E- HRM, WORKFORCE AGILITY AND ORGANIZATIONAL PERFORMANCE: A REVIEW PAPER TOWARD THEORETICAL FRAMEWORK

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Abstract: This paper focuses on review of literature regarding electronic human resource management followed by a revision of studies related to organizational performance and workforce agility. Generally, the paper provides a model to integrate the variables of electronic human resource management, workforce agility and organizational performance. The result of the review is employed to develop the study's theoretical framework. The framework comprises of an integrated literature and models of electronic human resource management adoption, and electronic human resource management implementation at the firm level, workforce agility and organizational performance.

Keywords: Electronic Human Resource Management, Workforce Agility, Organizational Performance, Theoretical Framework.

1. INTRODUCTION

Electronic Human Resource Management (E-HRM) was first defined in the late 1990s when e-commerce was expanding throughout the business world (Kovach, Hughes, Fagan & Maggitti, 2002; Olivas-Lujan, Raminez & Zapata-Cantu, 2007). In this regard, E-HRM has been interchangeably used with virtual HRM, human resource (HR) intranet, web-based HR, computer-based human resource management systems (CHRIS) and HR portals.

According to Panayaotopoulou, Vakola and Galanaki (2007), as technology is enhanced, organizations can make use of information systems for the management of significant number of HR processes effectively and in turn, this would contribute to making strategically significant information and knowledge available in order to enhance competitive advantage. The organizational core is formed by HR and thus, no matter how advanced the manufacturing procedure is or how revolutionary the product is that needs conceptualization, it entails qualitative and quantitative methods along with the entire breadth of HRM.

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Moreover, e-HRM uses information technology (IT) in two ways; first, technology is required to connect spatially segregated actors and allow interactions between them regardless of whether or not they are working in a room or in different places around the globe. In other words, technology forms the medium that connects and integrates. Second, technology complements actors by substituting for them in part or completely, in performing HR activities.

Furthermore, e-HRM offers a potential way to enhance services provided to HR department clients (employees as well as management), enhance efficiency and bring about cost-effectiveness in the HR department, and enable HR to transform into a strategic partner that contributes to the achievement of organizational objectives.

Generally speaking, the stimulation of organizational performance (OP) has always been a top priority in all organizations for its direct relationship with value creation. Although organizations are always attempting to produce superior results, influence and competitive advantage, some are struggling to succeed in these objectives and this may be attributed to the inaccurate assessment of management of their OP. Added to this the lack of a single measure/scale that measures OP may be related to the representation of OP as the extensive organization's ability to satisfy stakeholders' needs in order to maintain survival and continuity. In this background, there are three performance aspects namely, financial performance, operational performance and organizational effectiveness (Abu-Jarad et. al., 2010; Wartika, Surendro, Satramihardja, Supriana, 2016).

The conceptual definition of Workforce Agility (WFA) can be attributed to the concept analysis proposed by Breu et. al., (2001), wherein they defined the concept as an environmental responsiveness in turbulent and dynamic environment. It refers to the ability to react in a flexible and timely manner to unexpected internal and external changes in the environment (Bosco, 2007). Hence, an agile workforce is the major contributor to the realization of an agile organization and oversight of this factor may weaken the agility of the organization (Hosein & Yousefi, 2012). Furthermore, organizational agility may be achieved through the cooperation, allegiance, and capability of workers and these primarily stem from the worker's skills, knowledge, acuteness, experiences and intelligence (Meredith & Francis, 2000).

2. LITERATURE REVIEW OF E-HRM

This sub-section provides a review of studies dedicated to e-HRM. To begin with, Hadziroh and Yusliza's (2013) study studied satisfaction towards e-HRM in the context of government firms in Malaysia. The author proposed a model upon which three primary hypotheses were proposed to be tested in the future. The results of the research would offer insights into e-HRM area, specifically in the Malaysian context.

In a study of the same caliber, Jaradat (2013) examined e-HRM in terms of the issues and challenges faced in Jordanian universities. Data was gathered through a developed questionnaire and the findings showed that the above mentioned challenges significantly affected e-HRM faculty users in the Jordanian private universities, with the technology infrastructure taking top position, followed by employees technology knowledge, the inclination and conviction to use the technology among employees, and the organizational cultural. The author listed recommendations for the private Jordanian universities to enhance their implementation level of e-HRM application.

Moreover, Al-Mobaideen, Allahawiah and Basioni (2013) focused on the primary factors that influenced the adoption of HRIS in Aqaba Special Economic Zone Authority in Jordan. The study found that IT infrastructure significantly affected HRIS adoption whereas perceived usefulness, perceived ease of use, top management support and individual experience did not. The results also revealed no significant statistical differences in terms of demographic characteristics on the adoption of HRIS.

Also in Jordan, the determinants of the implementation level of e-HRM were examined in the context of Jordanian Shareholding Companies by Al-Dmour and Shannak (2012). The analysis found that the level of e-HRM implementation is moderate, with around 60% of the variations explained by internal factors and 14% by external factors. The differences between adopters and their non-adopting counterparts lie in the internal and external environmental characteristics. The authors listed some recommendations for policy-makers for the improvement of the e-HRM application levels.

Similarly, the effect of e-HRM on organization's market share in the context of Housing Bank for Trade and Finance in Jordan was examined in the empirical study carried out by Rawash and Saydam (2012). The findings highlighted the lack of empirical studies focused on the integration of EM and HRM to enhance the performance of the organization. The authors proposed the integration of both and confirmed their proposed hypotheses.

Meanwhile, in Sri Lanka, Pratheepan and Arulrajah (2012) looked into the application of e-HRM practices and their effectiveness in chosen Sri Lankan private banks. In particular, the Sampath Bank PLC and HNB PLC revealed large numbers of e-HRM practices with 28 and 16 practices respectively, while the Seylan Bank PLC and the Commercial Bank used 13 and 7 practices respectively. The authors found that the perceived effectiveness level of e-HRM practices was high and in comparing the perceived use level and effectiveness level of e-HRM among the selected banks, Commercial Bank of Ceylon had comparative higher use and effective that the other three selected banks.

In a broader study of e-HRM, Sareen and Subramanian (2012) conducted a strategic review of the researches done in the field of e-HRM to provide an insight into the e-HRM framework along with the advantages and disadvantages. The work provided a discussion of the impact of e-HRM on HR professionals to highlight implications for future studies dedicated to the topic.

In a study of the same caliber, Dhamija (2012) identified the concept of e-recruitment in light of e-HRM by gathering methods like e-mails, corporate websites and commercial job boards of e-recruitment. They also listed general pros and cons of e-recruitment.

Moreover, e-HRM was also examined in literature in terms of its ability to increase the HR function value by Parry (2011). The findings obtained from a large-scale survey throughout 12 countries revealed that e-HRM may assist HR to increase its value by becoming more strategic, but evidence was not supported in terms of reductions of costs savings in HR headcount. This indicates that organizations implement e-HRM to redeploy HR practitioners from transactional work to activities that are more strategic and value-added.

Also, a preliminary investigation of technology factors influencing attitude towards e-HRM use was carried out by Yusoff and Ramayah (2011). The factors including clarity of e-HRM goals, e-HRM trust, user satisfaction with e-HRM, perceived usefulness, perceived ease of use, intention to use e-HRM, user support, social influence and facilitating conditions) was examined for their effects on attitude towards e-HRM use among 51 Malaysian HR professionals. Future recommendations for HR professionals were listed by the authors.

In the same line of study, Foster (2008) conducted an exploratory analysis of e-HRM in HRM transformation, where he argued that various technological frames exist between key stakeholders groups, and such frames explain why inertial has arisen in some organizations. He contended that the technological frame domains analysis offers an insight to understanding and interpreting e-HRM as a way to examine the barriers that may prevent the e-HRM development. According to the author, this may also be used as a basis for strategies to manage e-HRM related change in a more effective way. He made use of a grounded theory approach to investigate the way UK public sector firms understand, plan and implement HR technology.

Aligned with the above studies is the one by Strohmeier (2007) who reviewed e-HRM and discussed its implications. More specifically, the author reviewed empirical work dedicated to e-HRM and explained some implications for future studies. His review indicated that the initial studies from different disciplines – those that are non-theoretical – employed various empirical techniques, and referred to several analysis levels and focal e-HRM topics. He presented some initial theoretical, methodical and topical implications to support a future study program in the topic.

In the HRIS adoption and use, collaboration of HRM and IT has been evidenced to be a crucial success factor in literature. More particularly, Panayotopoulou, Vakola, and Galanaki (2007) stated that such collaboration guaranteed successful integration of technology into the process of HRM in response to the need for HRM quality services.

E-HRM Functions

Organizations have been increasingly dependent on the e-HRM function to provide management solutions that contribute to human capital effectiveness and these solutions include e-recruitment, e-selection, e-training, e-compensation, e-performance appraisal, and e-communication.

E-Recruitment

A huge portion of research dedicated to e-HRM has addressed e-recruiting a solution that refers to the use of websites, web portals or kiosks for the attraction of applications to the organizations (Schalk, Timmerman & Heuvel, 2013) and allow their application for jobs online. Moreover, e-recruiting research has investigated the effects of several factors that are considered to impact the attraction of applications to organizations as well as their application intention; for instance, Ghazzawi & Accoumeh, (2014) focused on organizational and individual factors influencing the intentions of applicants to apply for jobs. In today's market, organizations can post job vacancies in an instant, producing applications and resumes for positions in a matter of hours as explained in Galanaki (2002), and Stone, Lukaszewski, Stone-Romero & Johnson, 2013).

E-Selection

Internet can facilitate the staff selection, especially when it comes to long distances. Video conferencing over the Internet was used widely in the early stages of the selection process, which can achieve amazing in cost reduction and time savings (Galanaki, 2002; Khashman and Al-Ryalat 2015). Online selection is a practice of online technology use to assess, interview and hire potential employees (Dhamija, 2012).

E-Compensation

Several articles have also been written on e-compensation and benefit systems such as Dulebohn and Marler (2005); Stone & Dulebohn, (2013). In particular, Dulebohn and Marler (2005) indicated that e-compensation refers to the use of web-based software tools that allow managers' effective design, administration and communication of compensation and benefits information. The authors showed that the use of e-compensation tools can furnish HR professionals and managers with

higher access to information that may contribute to maximizing the compensation initiatives effectiveness. Other authors cited in Stone & Dulebohn, (2013) conducted an assessment of the use of expert/decision support systems to promote employee satisfaction through benefits.

E-Training

In terms of workplace learning, such convergence provides learning materials for employees through different platforms (desktop computers, laptops, cellular smart phones, and agile digital book readers and media players. These contents that are accessed by employees for their learning of work-related knowledge and skills are labeled as e-learning and its proliferation at work is extending (Brown & Charlier, 2013).

E-Performance Appraisal

Studies dedicated to e-performance appraisal are still lacking in literature (Stone & Dulebohn, 2013). The contribution of technology to appraisal satisfaction can be traced through its contribution to performance management in two ways as noted by Cardy and Miller (2005); technology enables the measurement of an individual's performance through computer monitoring unobtrusively but in an automated manner that needs minimal input from individuals over their task performance; and technology is used as a tool to bring about the process of writing reviews or producing performance feedback.

E-Communication

Technology can be used to improve employees' communication. E-HRM includes personnel communication via electronic mails. The penetration rate of online communication, mainly e-mail, which is higher than 75 percent in corporate environments and e-mail has emerged as the communication medium of choice did (Bontis et. al., 2003; Khashman and Al-Ryalat 2015).

3. LITERATURE REVIEW OF ORGANIZATIONAL PERFORMANCE

Both efficiency and effectiveness form the core of the assessment and measurement of OP. IT developments have transformed HR functions in organizations and in the current times, majority of organizations have implemented HRIS to reinforce their HR functions and to improve the effectiveness and efficiency of the administration, decision making and sharing of information (Zafar, 2013).

According to Bartuseviciene & Sakalyte (2013), effectiveness and efficiency are two common measures used for OP, with the efficiency referring to the enhancement of internal processes in the organization (e.g., organizational structure, culture and

community), and the enhancement of entities' performance in light of management, productivity, quality and profitability (Pinprayong & Siengthai, 2012).

A large portion of literature concerning E-HRM evidenced its direct relationship with OP; for instance, Al-Hmouze (2016) examined the impact of E-HRM application on OP in light of innovation, customer satisfaction, marketing time, rapid adaptation, and HR process in the Royal Jordanian Company. The finding showed E-HRM application is significantly influence OP. The author recommended the firms to invest in E-HRM as it improves OP, provides benefits and enhances quality.

Khashman and Al-Ryalat (2015) examined the effect of e-HRM practices on the operational performance of the Jordanian telecommunications firms. Their findings revealed that E-HRM dimensions (i.e., e-recruitment, e-selection, e-training, e-performance appraisal, e-communications and e-compensation) significantly and positively impacted those of operational performance (i.e., time, cost, service quality and flexibility). According to the authors, solutions provide varying capabilities to enhance the ability of the firms to manage operational performance in the firms but such solutions are susceptible to disruptions of organizational culture if implemented recklessly.

The impact of e-HRM system on OP was examined by Bharti (2015) in a case study focused on the banking sector of India. The study pinpointed the e-HRM practices of public and private sector banks and the findings showed a significant positive relationship between e-HRM components and performance. On the basis of the study's findings, selected banks that employed several e-HRM practices manage their human resources in an effective and efficient manner. As for the overall e-HRM dimensions, the findings showed that in both public and private banks, such dimensions impacted the practices at a higher study level. The author reached to the conclusion that e-HRM was used increasingly in both types of banks throughout Delhi.

In the study by Oswall and Narayanapp (2014), the authors focused on the HRM evolution to e-HRM for the effectiveness and sustainability of the organization. Specifically, the author's objective in conducting the study is to trace the evolution of HRM throughout the years and the challenges that it faces in the 21st century. Their work presented the introduction of ICT to HRM in light of e-HRM, the contribution of HRM to the effectiveness and sustainability of the organization and the way e-HRM contributes towards both variables.

Furthermore, the effect of e-HRM on the job performance of employee was investigated by Kariznoee, Afshani and Moghadam (2012) by using a description-correlation model, with a statistical sample being 170 employees working in 15 manufacturing food companies. Data was gathered through two questionnaires, taking HR management tools into consideration, where Cronbach's alpha reliability

was found to be (.89). The authors found a significant and positive relationship between e-HRM and the performance of employees.

Meanwhile, e-HRM was also studied by Davoudi and Fartash (2012) in light of organizational success. On reviewing prior literature on e-HRM, the authors highlighted three types, after which they shed light on its applications and benefits, and the factors that drive successful e-HRM implementation in organizations. The authors proposed a model and illustrated the significant role of IT in supporting HR practices. They concluded that the integration of HR practices with IT contributes to organizational superior outcomes – a finding that has implications for managers and business owners.

Similarly, Bulchand-Gidumal and Melian-Gonzalez (2011) looked into how the positive influence of IT can be maximized to improve OP. The authors failed to explore the manner in which relationship between investments and IT and OP develops. Their empirical findings showed that IT planning and management affected the organization's endowment of resources, both physical and human) that ultimately positively impacts on each of the IT-related areas in organizations (applications, reliable and secure systems and communications, and training and support). Such areas functioning in turn, affects the IT impact on the organization in a positive manner.

4. LITERATURE REVIEW OF WORKFORCE AGILITY

Among the top significant factors in the manufacturing field is WFA, where an agile workforce can be timely reconfigured to adapt to the changing conditions through adaptive and proactive behavior. More specifically, agility has its basis on level of knowledge, inclination towards learning and different organization support activities that should be focused on in an organization that is attempting to be agile. As the workforce is the one that anticipates changes, not machines (Breu et. al., 2001) and they are the ones that contribute to the success of the organization via their knowledge, ideas, judgment and collaboration.

Employees need the flexibility to multi-task in different teams at the same time (Sherehiy et. al., 2007). According to Sherehiy et. al., (2007), resiliency is a work attribute of workforce agility that displays the effective functioning under stress in an ever-changing environment. This shows that employees harboring positive attitudes to changes, novel ideas, differences in opinions and methods, and those that are tolerant of uncertain and unexpected circumstances are resilient employees (Al-Faouri et. al., 2014).

Studies on workforce agility can be categorized into two groups; the first group focuses on agile manufacturing and has employed workforce agility as a dimension of agile manufacturing whereas the second group focuses on workforce agility (Alavi & Abd. Wahab, 2013).

The relationship between workforce agility and organizational intelligence was investigated by Sohrabi, Asari and Hozoori (2014) and Suharti & Pramono (2016). They found a significant positive correlation between workforce agility and organizational intelligence, where the entire components of the latter variable with the exception of strategic vision positively and significantly related with workforce agility. Conversely, all the individual components of workforce agility (with the exception of interpersonal adaptability) and organizational position positively and significantly related with workforce agility. With regards to sex and educational level, no significant relationship was evidenced.

In the empirical study of Alavi, Abd Wahab, Muhamad and Arbab Shirani (2014), the authors provided evidence enabling SME managers to understand and determine the relationship between organizational learning, organic structure and workforce agility. The findings of the tested hypotheses showed that organizational learning and the organic structure's dual dimensions (flat structure and decentralized decision making) can lead to enhanced workforce agility. Moreover, the authors revealed that organizational learning offers an appropriate environment for learning novel skills that promote knowledge that are influenced by the organic structure's characteristics. Specifically, a flat structure could boost the agility of the workforce owing to the interaction between organizational members precipitated by the decreased gap between the management levels – on the other hand, decentralized decision-making is expected to provide higher autonomy and responsibilities sharing at different organizational levels. The low formalization-workforce agility relationship was found by the authors to be positive but insignificant. They explained that the aspects of the infrastructure will urge the workforce to learn new knowledge and tasks and boosts their proactivity rather than merely adapting to changes or display resilient behavior. Despite the fact that these practices were acknowledged by scholars, their effects on workforce agility have not been examined in an actual manufacturing firm. Lastly, the statistical findings of this study, a model on workforce agility was recommended, where the implementation of workforce agility programs led participants to possess workforce agility.

Lastly, Hopp and Van (2004) cited in Muduli, (2013) claimed that an agile workforce can reinforce strategic objectives relating to cost, time, quality as well as variety. It is evidenced to contribute to productivity, profits and market shares, and to business ongoing competitiveness in an uncertain environment, and to improve the survival prospects of the organizations in a risky global business market.

5.   THEORETICAL FRAMEWORK

The study's theoretical framework refers to the basis upon which the whole research project is based upon. It forms logically developed, explained and elaborated relationships among the independent, dependent and mediating variables that

are explained in light of theories and relevant studies in literature. It also offers a platform upon which the measurement instruments can be developed (Sekaran & Bougie, 2013).

Studies dedicated to management research generally attempts to shed light on a phenomenon that is organization-related, and the most simplified way of phenomenon representation is through modeling. In this theoretical framework, OP is the phenomenon under focus that is considered to be the dependent variable, the e-HRM functions are the independent variables, and WFA is the mediating variable. A theoretical framework is presented in Figure 1.
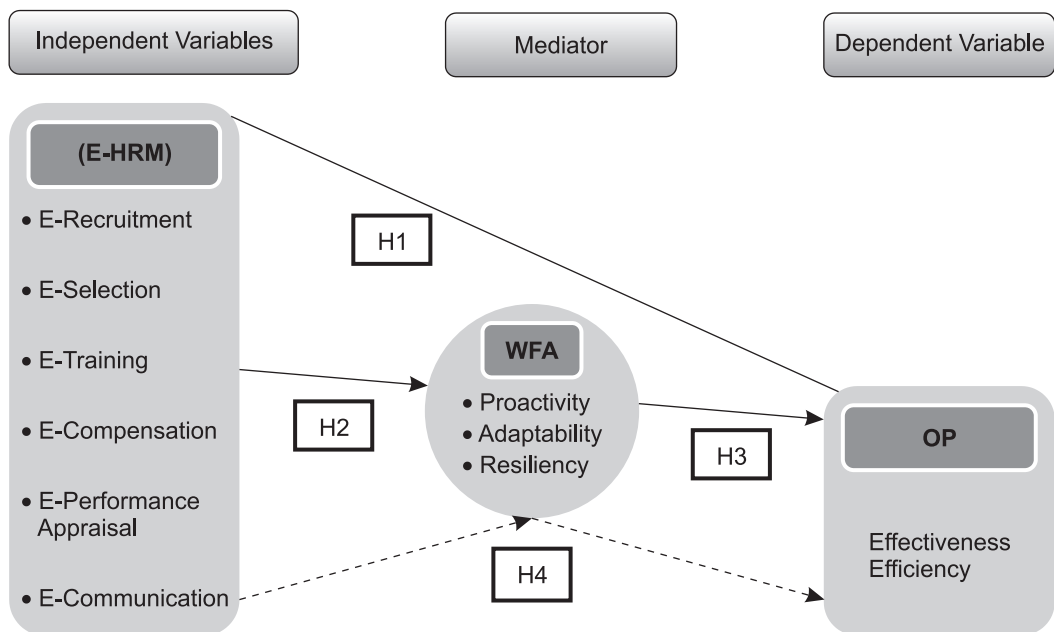

Figure 1: Theoretical Framework

6. OPERATIONAL DEFINITION

Operational definition is described as the editing process of conceptual definitions of the variables and dimensions for their tangible measurement (Zikmund et. al., 2013). In relation to this, Sekaran and Bougie (2013) stated that operationalization is carried out by noting the behavioral dimensions, aspects or properties that the concept denotes. This process reduces the abstract concepts into notable behaviors and characteristics. In this respect, a conceptual definition can be categorized into measureable elements via an operational definition to form a measurement index of the variable. The next sub-section provides the operational definitions of the study variables.

7. DEFINITION OF HRM

E-HRM is defined as a new managerial technique that has its basis on comprehending and using communication and information methods in conducting basic functions of HR management and development (Al-Kurdi, 2010). E-HRM is measured through its fundamental functions namely; e-recruitment, e-selection e-compensation, e-training, e-performance appraisal and e-communication. The operational definitions of the e-HRM functions are provided in Table 1.

Table 1
Definitions of the E- HRM functions

Dimension	Operational definition
E-Recruitment	The use of the website of the company as a recruiting tool via attracting candidates and receiving e-applications (Swaroop, 2012).
E- Selection	The use of the website of the company to facilitate the selection of staff, particularly in long distances. Using video conference over the internet; for instance, when used in the early stages of the selection process, it can bring about cost reduction and time saving (Khashman & Al-Ryalat, 2015).
E-Compensation	The use of the website of the company for planning employees' compensation (Swaroop, 2012).
E-Training	The use of the company's website to carry out learning or training, where e-devices, applications and processes are employed for the creation of knowledge, management and transfer (Swaroop, 2012).
E- Performance Appraisal	The use of the company's website to conduct an evaluation online of the employees' skills, knowledge and performance online (Swaroop, 2012)
E-Communication	The use of the company's website to bring about communication through e-mails – e-mails has become the communication medium of choice in firms (Khashman, & Al-Ryalat, 2015).

8. DEFINITION OF OP

OP is the internal processes improvement in the organizational, in light of management efficiency and effectiveness (Pinprayong & Siengthai, 2012). It is generally displayed by effectiveness (the organization's ability to achieve its objectives), efficiency (the ability of the organization to use resources in a proper way), employees and customers' satisfaction, innovation, products/services quality, and the maintenance of human resources. On the basis of Alkalha et. al.'s (2012) study, performance efficiency as a measure of resource cost relates with the achievement of goals.

9. DEFINITION OF WFA

WFA refers to the ability of the employee to react to and keep abreast of the unexpected internal and external environment changes in a timely manner (Bosco, 2007).

10. CONCLUSION

This paper uses a theoretical framework to provide a comprehensive model to understand the OP as the phenomenon under focus that is considered to be the dependent variable, the e-HRM functions are the independent variables, and WFA is the mediating variable. This theoretical framework would be our empirical study in the near future.

References

Abu-Jarad, I. Y., Yusof, N.. & Nikbin, D. (2010). A Review Paper on Organizational Culture and Organizational Performance. *International Journal of Business and Social Science,* 1(3), 26-46.

Alavi, S. & Abd. Wahab, D. (2013). A Review on Workforce Agility. *Research Journal of Applied Sciences, Engineering and Technology.* 5(16), 4195-4199.

Alavi, S., Abd. Wahab, D., Muhamad, N., and Arbab Shirani, B. (2014). Organic structure and organizational learning as the main antecedents of workforce agility. *International Journal of Production Research*, 52(21), 6273-6295.

Al-Dmour, R. H. and Shannak, R. O. (2012). Determinants Of The Implementation Level Of Electronic Human Resources Management (E-Hrm) In Jordanian Shareholding Companies. *European Scientific Journal*, August edition. 8(17), 204-235.

AL-Faouri, A., Al-Nsoor, M., and AL-Kasasbeh, M. (2014). "The Impact of Workforce Agility on Organizational Memory". *Knowledge Management Research & Practice*. 12(4), 432–442.

Al-Hmouze, L. H. (2016). The impact of Electronic Human Resource Management (e-HRM) Application on Organizational Performance: An Applied Study in Royal Jordanian. Master Thesis Submitted to Middle East University. Jordan.

Alkalha, Z., Al-Zu'bi, Z., Al-Dmour, H., Alshurideh, M., & Masa'deh, R. (2012). Investigating the effects of human resource policies on organizational performance: An empirical study on commercial banks operating in Jordan. *European Journal of Economics, Finance and Administrative Sciences*, 51, 44-64.

Al-kurdi, A. (2010). Human Resource Management Development-managerial development website, [Online], [Retrieved August 23, 2013]. Available: http://kenanaonline.com/users/ahmedkordy/topics/67676/posts/158040.

Al-Mobaideen, H. Allahawiah S., and Basioni E., (2013). Factors Influencing the Successful Adoption of Human Resource Information System: The Content of Aqaba Special Economic Zone Authority. *Intelligent Information Management*, 5, 1-9 http://dx.doi.org/10.4236/iim.2013.51001 Published Online January 2013 (http://www.scirp.org/journal/iim).

Bartuševičienė, I. & Šakalytė, E. (2013). Organizational Assessment: Effectiveness Vs. Efficiency. *Social Transformations in Contemporary Society*. 2013 (1), 45-53.

Bharti, P., (2015) Impact of E-HRM System on Organizational Performance: A Case study on Banking Sector. *International Conference of Advance Research and Innovation (ICARI-2015).* 202-204.

Bontis, N., Fearon, M., & Hishon, M. (2003). The e-flow audit: an evaluation of knowledge flow within and outside a high-tech firm. *Journal of Knowledge Management*, 7(1), 6-19. http://dx.doi.org/10.1108/13673270310463581.

Bosco, C. (2007). The relationship between environmental turbulence, workforce agility and patient outcomes. Ph.D. Dissertation, College of Nursing, The University of Arizona, Tucson, AZ.

Breu, K., Hemingway C., Strathern M. And Bridger D. (2001). Workforce agility: the new employee strategy for the knowledge economy. *Journal of Information Technology* 17(1), 21–31.

Brown, K. G., and Charlier, S. D. (2013). An integrative model of e-learning use: Leveraging theory to understand and increase usage. *Human Resource Management Review*, 23(1), 37-49.

Bulchand-Gidumal J., Melián-Gonzálezn S. (2011). "Maximizing the positive influence of IT for improving organizational performance". *Journal of Strategic Information Systems.* 20 (2011) 461–478.

Cardy, R. L., and Miller, J. S. (2005). *E-HR and Performance Management: A Consideration of Positive Potential and the Dark Side*. In Greutal and Stone (Eds.). The Brave New World of e-HR (138-165). San Francisco, CA: Jossey-Bass.

Davoudi, S. M. M., & Fartash, K. (2012). Electronic Human Resource Management: New Avenues Which Leads to Organizational Success. *Spectrum: A Journal of Multidisciplinary Research*, 1(2). 75-87.

Dhamija, P. (2012). E-Recruitment: A Roadmap towards E-Human Resource Management. *International Refereed Research Journal,* 3(2),33-39.

Dulebohn, J. H., and Marler, J. H. (2005). E-Compensation: The Potential to Transform Practice. In Greutal and Stone (Eds.). The Brave New World of e-HR (166-189). San Francisco, CA: Jossey-Bas+s.

Foster, S. (2008). An Exploratory Analysis of E-HRM in the Context of HRM Transformation. Business School, University of Hertfordshire, [Online], [Retrieved August 27, 2013]. Available: http://uhra.herts.ac.uk/bitstream/handle/2299/1405/S86.pdf?sequence=1.

Galanaki, E. (2002). The decision to recruit online: a descriptive study. *Career Development International*, 7(4), 243-51. http://dx.doi.org/10.1108/ 13620430210431325.

Ghazzawi, K. and Accoumeh, A. (2014). Critical Success Factors of the E-Recruitment System. *Journal of Human Resources Management and Labor Studies*, 2(2), 159-170.

Hadziroh, I. and Yusliza, M. Y., (2013) Satisfaction towards Ehrm in Government Organizations of Malaysia: A Proposed Model Based on Field Theory. Proceeding of the International Conference on Social Science Research, ICSSR 2013 (e-ISBN 978-967- 11768-1-8). 4-5 June 2013, Penang, MALAYSIA. Organized by WorldConferences.net.

Hosein, Z. Z. & Yousefi, A., (2012).The Role of Emotional Intelligence on Workforce Agility in the Workplace. *International Journal of Psychological Studies*; 4, (3), 48-61.

Jaradat, N. M. S. (2013). Electronic Human Resource Management: Issues and Challenges in Jordanian Universities. *Interdisciplinary Journal of Contemporary Research in Business*, 4 (12), 685-710.

Kariznoee, A., Afshani, M., & Moghadam, M .R.H., (2012). "The Examine of effect of e-HRM on employee's job performance". *Advanced Research in Economic and Management Sciences (AREMS)*. 6. (2012), 275-282.

Khashman, A. M. & Al-Ryalat, H. A. (2015). The Impact of Electronic Human Resource Management (E-HRM) Practices on Business Performance in Jordanian Telecommunications Sector: The Employees Perspective. *Journal of Management Research*, 7(3), 115-129.

Kovach, K. A., Hughes, A. A., Fagan, P., and Maggitti, P. G. (2002). Administrative and strategic advantages of HRIS. Employment Relations Today, 29(2), 43-48.

Meredith, S., & Francis, D. (2000). Journey Towards Agility: The Agile Wheel Explored. *TQM Magazine*, 12(2), 137-143.

Muduli, A. (2013). Workforce Agility: A Review of Literature. *IUP Journal of Management Research*, 12(3), 55-59.

Olivas-Lujan, M.R., Ramire Z, J., and Zapata-Cantu, L. (2007). E-HRM in Mexico: adapting innovations for global competitiveness. *International Journal of Manpower*, 28, (5), 418-434.

Oswal1, N. & Narayanapp, G.L. (2014). Evolution of HRM to E-HRM towards Organizational Effectiveness and Sustainability. *International Journal of Recent Development in Engineering and Technology. 2(4), 7-14.*

Panayotopoulou, L., Vakola, M., and Galanaki, E. (2007). E-HR adoption and the role of HRM: evidence from Greece. *Personnel Review*, 36(2), 277-294.

Parry, E. (2011). An examination of e-HRM as a means to increase the value of the HR function. *The International Journal of Human Resource Management*, 22 (5), 1146-1162.

Pratheepan, S., and Arulrajah, A. A. (2012). Application of Electronic Human Resource Management (E-HRM) Practices and its Effectiveness in Selected Private Banks in Sri Lanka: An Exploration. The Seventh International Research Conference on Management and Finance (IRCMF 2012), [Online], [Retrieved Augaust 27, 2013]. Available:: http://192.248.17.88/mgt/ images/stories/ research/ircmf /2012/ part%2002.159-175.pdf.

Pinprayong B. and Siengtai S. (2012). Restructuring for organizational efficiency in the banking sector in Thailand: a case study of Siam commercial bank. *Far East Journal of Psychology and Business,* 8(2), 29-42. [Online], [Retrieved January 12, 2015]. Available: http://www. fareastjournals.com/files/FEJPBV8N2P2.pdf.

Rawash, H. N. & Saydam, S. (2012). The Impact of Electronic Human Resource Management on Organization's Market Share: An Empirical Study on the Housing Bank for Trade and Finance in Jordan. *International Journal of Business and Social Science*, 3 (24) [Special Issue – December 2012], 113-120.

Sareen, P., and Subramanian, K. V. (2012). "E-HRM: A Strategic Review", *International Journal of Human Resource Studies*, 2(3), 119-127.

Schalk, R., Timmerman, V., & van den Heuvel, S. (2013). How strategic considerations influence decision making on e-HRM applications. *Human Resource Management Review*, 23(1), 84-92.

Sekaran, U., and Bougie, R. (2013). *Research Methods for Business: A Skill-Building Approach*. 6th edition. John Wiley and sons Inc.

Sherehiy, B., Karwowski, W. And Layer, J. (2007). A review of enterprise agility: concepts, frameworks, and attributes. *International Journal of Industrial Ergonomics*, 37(5), 445–460.

Sohrabi, R., Asari, M., & Hozoori, M. J. (2014). Relationship between Workforce Agility and Organizational Intelligence (Case Study: The Companies of Iran High Council of Informatics). *Asian Social Science*. 10(4), 279-287.

Stone, D. L., and Dulebohn, J. H. (2013). Emerging issues in theory and research on electronic human resource management (eHRM). *Human Resource Management Review*, 23(1), 1-5.

Stone, D. L., Lukaszewski, K. M., Stone-Romero, E. F., and Johnson, T. L. (2013). Factors affecting the effectiveness and acceptance of electronic selection systems. *Human Resource Management Review*. 23(1), 50-70.

Strohmeier, S. (2007). Research in e-HRM: Review and implications. *Human Resource Management Review*, 17, 19-37.

Suharti, L., & Pramono, A. (2016). Cultural intelligence among Indonesian students: Role of international experiences and their impact on the development of social network and adaptive performance. *Journal of Advances in Humanities and Social Sciences*, 2(3), 182-194.

Swaroop, K. R. (2012). E-HRM and how it will reduce the Cost in Organization. *Asia Pacific Journal of Marketing & Management Review. 1(4), 133-139.*

Wartika, K., Surendro, H., Satramihardja, I., Supriana, (2015). Business process improvement conceptual models to improve the efficiency of power consumption on computer use from the perspective of human resource performance. *International Journal of Business and Administrative Studies, 1*(3), 99-106.

Yusoff, Y. M., and Ramayah, T., (2011), "Factors Influencing Attitude Towards Using Electronic HRM", Proceeding of 2nd *International Conference on Business and Economic Research*, 1510-1520.

Zafar, H. (2013). Human resource information systems: Information security concerns for organizations. *Human Resource Management Review*, 23(1), 105-113.

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). *Business Research Methods*, 9th ed. Australia South-Western.