

EFFECTIVENESS OF DIGITALIZATION IN HRM: AN EMERGING TREND

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Abstract

Increasing use of digital tools in Human Resource practices by employers has grabbed the attention of researchers, academicians, and strategists all over the world. Several studies have been done which described the application of information technology in various practices of human resource and justified its impact on organizational effectiveness. The study aims at providing an analysis of the most relevant contributions related to the use of digital tools in HR and its advantages to employers which enable them to grow their organizations into dynamic and high-performance organizations. The study focuses on the recent literature on effectiveness of digitalization in HR and provides some conclusions and directions for future research.

Keywords-Human resource management, e-HRM, virtual-HRM, digitalization and digital transformation

INTRODUCTION

Technological breakthrough has revolutionized the communication method both at the personal as well as professional front. Information Technology (IT) has significantly improved the efficiency of the HR department in terms of recruiting and selecting, training and development, and other associated functions thus, enables companies to reduce their costs associated and improve the speediness in relation to the HR department. Digital technologies are used in various HR processes, most noticeably in such areas as working with large amounts of data (big data), computer-aided training, using artificial intelligence for personnel selection and evaluation, organizing employee feedback online and a number of other areas. A fundamentally new category of tools (intelligent systems) has emerged that can ensure an individual approach to developing leaders, evaluating candidates and finding the right people, recommending optimal training, identifying fraud attempts, developing stress in employees and other problems in the organization. Currently, software with elements of artificial intelligence is able to solve almost the full range of problems HR-managers face: from choosing a candidate to analyzing the emotional state of an employee (Berzinya, 2018). Such software can analyze the computer activity of a particular employee (e-mail, visited web pages, documents opened) and identify activities that reduce productivity, as well as assess the emotional state of employees based on their correspondence and messages in chat rooms.

The purpose of this paper is to present a systematic literature review which describes the effectiveness of digitalization in Human Resource Management and how it helps firms to grow into dynamic, high-performance organizations. The discussion that follows will highlight the current literature which provides a description of what role digitalization plays in effective human resource practices and aspect of e-hrm. This paper will then conclude with a summary examination of the literature regarding how digitization can be leveraged by the modern high-performance organization to meet the strategic challenges of the current competitive business environment.

METHODOLOGY & OBJECTIVES

The study involves a systemic narrative literature review methodology of peer reviewed academic articles pertaining to the E-HRM and digitalization. The paper presents a review of existing research work on effect of digitalization in HRM and state a theoretical framework which helped in explaining the topic of the study. The search engines were used to identify the relevant articles through keywords e-hrm, digitalization and digital transformation, as well books and conferences were used as inputs. Identified articles are used for the analysis and conclusion as well as the references cited in the articles are also considered.

- To investigate into the current status of development related to electronic human resource management (e-HRM) and to explore its impact on HRM
- To understand the aspects of E-HRM and depict the SWOT in context of digitalization.

DIGITALIZATION IN HRM

Before understanding the advent and role of digitalization in human resource practices, a glimpse on the term digitalization becomes inevitable. The term digitalization was initially mentioned by Robert Wachal, who used it in the sense of ‘digitalization of society’ in 1971 and explained its origin as the result of a more widespread use of digital technologies (Pieriegud, 2016). According to Kagermann (2015) digitalization may be defined as the networking of people and things and the convergence of the real and virtual worlds that are enabled by Information and Communication Technology (ICT). ICT with respect to Human Resource Management functions is termed differently viz., web-based human resources, human resource information system (HRIS), virtual human resource management, human resource intranet, computer based human resource management systems and human resource portals but the term e-HRM is the most widely used. Regarding the term e-HRM itself, its origin has been linked to the 1990s, with the idea of the emergence of e-commerce (Lengnick-Hall & Moritz, 2003).

E-HRM has been referred by many authors as any type of HR activities, either administrative or transformational, as long as that can be supported by information technology (Olivas & Zapata, 2007; Lau & Hooper, 2008; Panayotopoulou, 2007). However, E-HRM is considered as a web-based technology solution that makes use of the latest information and communication technology to deliver online and real-time human resource management solution (Olivas & Zapata, 2007). Strohmeier (2007) defined e-HRM as the ‘planning, implementation and application of information technology for both networking and supporting of at least two individual or collective actors in their shared performing of HR activities’. Lepak and Snell (1998) used the term ‘virtual HR’ to encompass a ‘network-based structure built on partnerships and mediated by information technologies to help the organization acquire, develop, and deploy intellectual capital’. Ruël, Bondarouk & Looise (2004) view e-HRM as a way of implementing HR strategies, policies and practices in organizations through a conscious and directed support of and/or with the full use of web-technology-based channels. However, different authors put emphasis on different aspects of e-HRM.

ASPECTS OF E- HRM

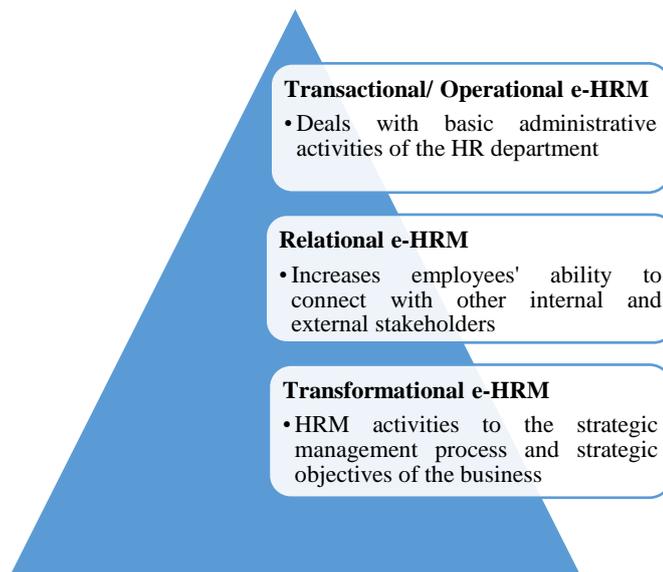


Figure-1: Aspects of e-HRM

First group of authors place an emphasis on the *transactional or operational* side of e-HRM, that is, the fact that HRM activities are more easily administered. They point out that e-HRM is such a concept in which it enables improvements in the administration of human resource activities and transactions (Kettley, & Reilly, 2003). According to this aspect, e-HRM consists of the basic administrative activities of the HR department such as payroll, personnel data management, departmental record maintenance and others which make up the bulk of the workload of the HR Department. A number of authors have supported the cost-reducing benefits and increase in efficiency created by e-HRM in this regard (Marler, 2009; Ruël et al., 2004). This is achieved through minimizing HR staff bonded to these activities, increasing processing speed and reducing the amount of administrative work, thus freeing time for other activities (Ruël et al., 2004; Ruta, 2005; Strohmeier, 2007). Similarly, according to Voermans and Van Veldhoven (2007) e-HRM represents administrative support for HRM by using internet technology.

Second group of authors places emphasis on *relational aspect of e-HRM* in which technology provides access to human resources data. It is stated that e-HRM implies the application of IT for networking or support between at least two individual or collective entities in their realization of HRM activities (Strohmeier, 2007). They believe that e-HRM represents the application of different types of technologies that enable managers and employees to have a direct access to human resources data and various administrative applications (Watson & Wyatt, 2002). Bondarouk and Brewster (2016) also indicated that e-HRM focuses on all integration mechanisms and all the content of human resources management that is transmitted through IT, which aims to make the HRM processes more consistent, more efficient, with better quality, and which should create long term opportunities for the stakeholders of the organization. Relational e-HRM may provide employees and managers with remote access to HR information, thus increasing their ability to connect with other internal and external stakeholders, as well as providing individuals with the tools to perform HR activities themselves. This again lessens the involvement of HR staff, allowing them to refocus their priorities (Poisat, P., & Mey, M.R., 2017). Finally, third group of authors puts emphasis on the *transformational aspect of e-HRM*. By improving the strategic orientation of HRM, e-HRM has the capacity to transform the HR function (Ruël et al., 2004). It is indicated that e-HRM is, in fact, a comprehensive name that covers all possible mechanisms and interactions between HRM and IT aimed at creating value for employees and managers in the organization, as well as for entities outside of them (Bondarouk & Ruel 2009, p. 507). A strategic HR function links HRM activity to the strategic management process and strategic objectives of the business. This leads to an integrated set of policies and practices developed to execute the company’s implicit or explicit business strategy through the management of the firm’s human capital (Martin-Alcazar, Romero-Fernandez & Sanchez- Gardey, 2005; Wright & McMahan, 1992). A pivotal goal of e-HRM is thus to contribute to the strategic alignment of the HRM function.

Table 1E-HRM activities

| Aspects of E-HRM | Benefits | Choices of HRM activity | Activities |
|---|--|---|--|
| <ul style="list-style-type: none"> Transactional/Operational e-HRM | <ul style="list-style-type: none"> Increased efficiency- Less HR staffs Speedy process Reduced cost Less administrative work | <ul style="list-style-type: none"> Either employees are asked to keep their personal data up to date through HR website or the administrative force to do it | <ul style="list-style-type: none"> administrative function like payroll, employee personal data, etc. |
| <ul style="list-style-type: none"> Relational e-HRM | <ul style="list-style-type: none"> Remote access of information Easy connectivity within and outside organisation Effectiveness of HR functions- Hr can perform the tasks themselves Simplified process and accuracy in data entry | <ul style="list-style-type: none"> Use of web-based application for recruitment and selection or to adopt the paper-based approach | <ul style="list-style-type: none"> Supportive business process by the means of training, recruitment, performance management, and so forth. |
| <ul style="list-style-type: none"> Transformational e-HRM | <ul style="list-style-type: none"> Assist in strategic integration of e-HRM with companies’ strategy Better HRM information as compared to firms not using E-HRM Swapped administrative with technology activities | <ul style="list-style-type: none"> Change ready workforce through web-based tools to be in line with strategic choices or use paper-based way | <ul style="list-style-type: none"> Strategic HR activities such as knowledge management, strategic reorientation, etc |

E-HRM, in fact, consists of the configuration of computer hardware, software and electronic networks that enable the execution of HRM activities. At the same time, the degree of physical presence of hardware and software and the degree to which they are used to coordinate individual and group transactions in the HRM area, irrespective of the geographical constraints and organizational horizontal and vertical differentiation of users, determines the level of development of e-HRM in organizations (Marler, & Parry, 2016).

HR management digitization is aimed at combining all areas of personnel management with the capabilities of rapidly developing digital technologies for transparency, consistency of alignment and measurement of human capital management processes, similar to the management of any other company assets (Fedorova, et al, 2017, Kokovokhin, et al, 2017). In the 21st century, HR have been able to revolutionize the experience of employees by the transformation of HR processes through the use of new digital platforms, applications, and methods of providing HR services including digital communication (Stephan et al., 2016).

IMPACT OF DIGITALIZATION IN HRM

Existing literature and case studies support the view that e-HRM results in increased productivity to the organization. This is seen in reduction in HR staff, cost savings and less administrative burden due to automation (Hawking, Stein & Foster, 2004; Ruël et al., 2004 as cited in Strohmeier, 2007). E-HRM also helps in achieving relational goals viz., the provision of high-quality services to the internal customers of the organization, through increasing the timeliness and improving the client-service orientation of HR professionals

(Snell, Pedigo & Krawiec, 1995 as cited in Lepak & Snell, 1998). According to Walker (2001), improving the level of service, reducing costs and allowing more time for higher value tasks are of great importance for the success of technology in the HR domain. Watson (2002) supported his views and stated that there are four factors providing evidence of the value of electronic HR- productivity improvements, cost reductions, return on investment and better employee communications. It may help reduce costs and improve productivity, also improve communication, reduce paperwork, and above all increase productivity, also some ways create an organization without boundaries (Mario Arias, 2005)

It is expected that the HR function provides strategic direction to human capital management in an organization and becomes a strategic partner in the achievement of organizational objectives (Hawking et al., 2004; Lepak, Bartol & Erhardt, 2005). Digitalization requires redesigning the role of HR professionals and developing new competencies that will help to ensure employee wellbeing and organizational sustainability in the digital era (Cantoni & Mangia, 2019, pp. 58-59). Thus, investments in technology are aimed at bringing about efficiency in operational tasks (Bell, Lee & Yeung, 2006; Lawler & Mohrman, 2003). It is believed that e-HRM can promote the quality of HR functions as well as help managers to supervise employees efficiently and effectively (Yusoff, Ramayah & Haslindar, 2010). In relation to the role of e-HRM and organizational productivity, it is argued that e-HRM helps to achieve the aim of globalization of organizations, which has led to the development of terms like global HRIS, global information system (GIS) and international human resource management (IHRM; Akmanligil & Palvia, 2004; Ruël et al., 2004). Many unknown and complex challenges are created by globalization. E-HRM provides considerable benefits in alleviating these challenges (Akmanligil & Palvia, 2004). Employees are able to work remotely, thanks to technological advancement, with HR staff able to carry out tasks from any location (Van Heerden, 2011). This increases flexibility and produces better results amongst staff. Farber et al. (2003) also mentioned in their study that automating processes improves the productivity of the HR team and facilitates its work. Automation offers the organization with an ability to save its time, and therefore money, allowing the business to invest in really important things (Chapman & Godollei, 2017). This implies that automation has reduced the burden on the organization in terms of costs associated with recruitment and selection; thus, allowing the business to remain competitive in terms of the HR function.

SWOT of e-HRM

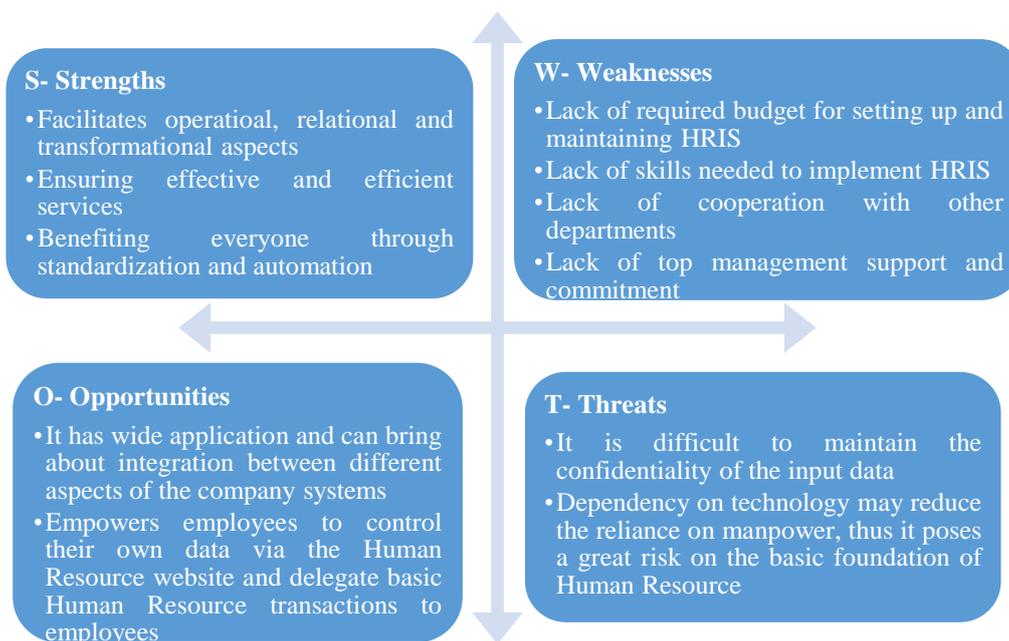


Figure-3: SWOT analysis of e-HRM

There are specifically designed digital tools for every function of HRM, whether it is operational, relational or strategic in nature. The productivity, effectiveness and efficiency of HR activities have been enhanced due to use of digital technology in organizations. It involves redesign of traditional HR management functions that is based on new digital business thinking, with a focus on people and work efficiency thus, benefitting every stakeholder. However, to bring digitalization in HRM, it requires investment as well as requisite skills to build and implement it. It means employers need to invest to embrace digital technologies and preparing their managers to have necessary awareness, skills, and resources to use these digital tools. Moreover, it poses several challenges in terms of maintaining confidentiality and retaining manpower. Though having limitations, e-HRM

has been adopted and implemented by number of organizations for sustainable growth because of its wide application and effective outcomes.

CONCLUSION

The paper has focused on reviewing the existing literature in relation to the automation and digitalization in HR processes, while ensuring that the literature is in accordance with the research objectives. Summing up, digitalization enables HR professionals to attract better talents, keep close track on employees' performance, anticipate their training needs in order to be proactive, encourage engagement by identifying and acknowledging each employee's potential. The study further concludes that digitalization has increased the company's global reach, which can be considered as an accomplishment in the 21st century. Moreover, the study also found that E-HRM applications have a significant positive effect on the effectiveness of HRM activities. It became evident that improved efficiency and effectiveness is amongst the underlying benefits resulting from digitalization and automation. Digitalization in HRM aims to enhance the organization's performance. To achieve excellence, HR professionals need to be more strategic and proactive and they need to gain expertise in the upcoming social and technical trends.

The findings can serve as a foundation for researchers for further research in e-HRM and it will give way to other researchers in the identification of related studies in the literature review phase of their work. The study has limitation as it is based on review of previous papers related to digitalization and E-HRM. Furthermore, there is a need of quantitative tool to collect data from HR professionals to understand their interpretation on digitalization in HRM and a study conducted on broader spectrum can help in exemplifying the viewpoint of digitalization in HRM.

REFERENCES

- [1] A. Sanayei and A. Marzaei (2008). Designing a model for evaluation the Effectiveness of E-HRM (Case Study of Iranian Organizations). *International Journal of Information Science and Technology*, Vol 6, No.2
- [2] Akmanligil M., & Palvia P. (2004). Strategies for global information systems development. *Information and Management*, 42(1), 45–59. <https://doi.org/10.1016/j.im.2004.01.001>
- [3] Al-Ghorab, Eman Mohammed. (2003). e-learning introduction to unconventional training. Publications of the Arab Organization for Administrative Development, Cairo, Egypt.
- [4] Al-Najar, Fred. (2008). e-government between theory and practice, al dar al jameya, Alexandria, Egypt.
- [5] Bell B.S., Lee S., & Yeung S.K. (2006). The impact of e-HR on professional competence in HRM: Implications for the development of HR professionals. *Human Resource Management*, 45, 295–308. <https://doi.org/10.1002/hrm.20113>
- [6] Brockbank, W. (1997). HR's future on the way to a presence. *Human Resource Management*, Vol. 36 No. 1, pp. 65-70.
- [7] Cantoni, F., & Mangia, G. (2019). *Human Resource Management and Digitalization*. Abingdon, New York, Torino: Routledge.
- [8] Cappelli, P. & Tavis, A. (2016). The Performance Management Revolution: The focus is shifting from accountability to learning. *Harvard Business Review*, pp. 58-67
- [9] Fedorova, A., Ferrara, M., Fierro, P. (2017). The General Data Protection Regulation (GDPR): From static to dynamic compliance. *Law and Economics Yearly Review*, 6, p. 283-302.
- [10] Galgali (2014). *Digital Transformation and its Impact on Organizations' Human Resource Management*.
- [11] Hopkins, Brian and Markham, James. (2006). *electronic human resources management*, (translated by Khaled Al Ameri), Dar al-Faruq for publication and distribution, Cairo, Egypt.
- [12] Kagermann, H. (2015). Change through Digitization—Value Creation in the Age of Industry 4.0. In H. Albach, H. Meffert, A. Pinkwart & R. Reichwald (Ed.), *Management of Permanent Change* (pp. 23-45). Wiesbaden: Springer Gabler. doi: 10.1007/978-3-658-05014-6_2

- [13] Kokovikhin, A. (2017). Diversity Management Competencies of HR Managers. Proceedings of the International Conference on Economics, Management Engineering and Marketing (EMEM) (pp. 256-263). Destech Publicat Inc.
- [14] Laumer, S., Eckhart, A., and Weitzel, T., (2010). Electronic Human Resources Management in an E-Business Environmentl, *Journal of Electronic Commerce Research*, 11, pp 240-250.
- [15] Lepak, D.P. and Snell, S.A. (1998), “Virtual HR: strategic human resource management in the 21st century”, *Human Resource Management Review*, Vol. 8 No. 3, pp. 215-34.
- [16] Marie Karakanian (2000). Are Human Resources Departments Ready for E-HR? *Information Systems Management*, 17:4, 31-35,
- [17] Marler, J. (2009). Making human resources strategic by going to the Net: Reality or myth? *International Journal of Human Resource Management*, 20(3), 515–527. <https://doi.org/10.1080/09585190802707276>
- [18] Marler, J. H., & E. Parry. (2015). Human resource management, strategic involvement and e-HRM technology. *The International Journal of Human Resource Management*, 1–21. doi:10.1080/09585192.2015.1091980
- [19] Molotkova, N. V., Makeeva, M. N., & Khazanova, D. L. (2019). Digitalized Personnel Management. In V. Mantulenko (Eds.), *The European Proceedings of Social and Behavioural Sciences* (pp. 757-767). Samara: Future Academy. doi: 10.15405/epsbs.2019.03.75
- [20] Nishad Nawaz (2014). HRIS as a Tool for Effective Decision Making in Select Software Companies in Bangalore, Karnataka, India. *International Journal of Business and Management Review*, 2(1), pp.90–107.
- [21] Panayotopoulou L., Vakola, M. & Galanaki, E. (2007). E-HR adoption and the role of HRM: evidence from Greece, *Personnel Review*, 36(2), pp. 277-294.
- [22] Patmore, B., Somers, J., D'souza, D., Welch, D., & Lawrence, J. (2017). Research report: The State of Digital HR in 2017. Retrieved April 13, 2019 from <https://www.hrzone.com/resources/the-state-of-digital-hr-in-2017>
- [23] Paychex. (2018). Paychex Pulse of HR Survey: Tech Adoption Continues to Build HR’s Strategic Skills. Retrieved April 14, 2019 from <https://www.paychex.com/secure/whitepapers/hr-pulse-2018>
- [24] Poisat, P., & Mey, M.R. (2017). Electronic human resource management: Enhancing or entrancing? *SA Journal of Human Resource Management*. ISSN: (Online) 2071-078X, (Print) 1683-7584. <https://doi.org/10.4102/sajhrm.v15i0.858>
- [25] Rakhy and Vijayan (2018). Digitalisation in Human Resource Management Process, the Opportunity for the Competence Management in Retail Sector. *International Journal of Pure and Applied Mathematics*. Volume 119 No. 12, 2569-2581
- [26] Rueˆl, H.J.M., Looise, J.C. and Bondarouk, T. (2002). E-HRM: a phenomenon observed more closely: developing a model for practice and research. *HRM [Journal of HRM]*. Winter.
- [27] Ruël, H., Bondarouk, T., Looise, J. K. (2004). E-HRM: Innovation or Irritation. An Explorative Empirical Study in Five Large Companies on Web-based HRM. *Management Review*, 15, 364-380.
- [28] Sharma, H. & Shukla, S. (2013). Human Resource Management in Digital Age: Trends in Indian Corporate H R Practices. *IRC’s International Journal of Multidisciplinary Research in Social & Management Sciences*. Vol.1, Issue 3.
- [29] Sheriff, A. & Ravishankar, G. (2011). Role of Electronic Technology in Human Resource Management. *APJRBM* .Volume 2, Issue 2
- [30] Stanton, J.M. and Coovert, M.D. (2004). Turbulent waters: the intersection of information technology and human resources. *Human Resource Management*, Vol. 43 No. 2, pp. 121-6).
- [31] Stephan, M., Uzawa S., Volini, E., Walsh, B., & Yoshida, R. (2016). Digital HR: revolution, not evolution. In J. Bersin, B. Dollar, N. Wakefield, D. Mallon, L. Monck, J. Stempel & S. Vijay (Eds.), *Global Human Capital Trends 2016. The new organization: different by design* (pp. 97-101). Deloitte University Press.

- [32] Strohmeier, S. (2007). Research in e-HRM: Review and Implications. *Human Resource Management Review*, 17, 19–37. <https://doi.org/10.1016/j.hrmmr.2006.11.002>
- [33] T.V. Bondarouk & H.J.M. Ruël (2009). Electronic Human Resource Management: challenges in the digital era, *The International Journal of Human Resource Management*, 20:3, 505-514, DOI: 10.1080/09585190802707235
- [34] Van Heerden, J. (2011). The impact of the implementation of e-HRM on the human resource management function. MBA, Faculty of Business and Economic Sciences, Port Elizabeth: Nelson Mandela Metropolitan University.
- [35] Walker, A. J. (2001). *Web-based human resources*. McGraw-Hill Professional.
- [36] Wellins, R. S., & Sadjady, S. (2018). HR under pressure: falling behind in the race to transform. In E. Sinar, R. L. Ray, S. Wellins, Neal, S., A. L. Canwell, A. L. Abel, A. Popiela, J. Dettmann, L. Rolland, L. Collins & T. Cotton (Ed.), *The Global Leadership Forecast 2018* (pp. 50-51). Ernst & Young.
- [37] Yusoff, Y.M., Ramayah, T., & Haslindar, I. (2010). E-HRM: A proposed model based on technology acceptance model. *African Journal of Business Management*, 4(13), 3039–3045.
- [38] Mazen J Al Shobaki, Samy S Abu Naser, Youssef M Abu Amuna, Suliman A El Talla. Impact of Electronic Human Resources Management on the Development of Electronic Educational Services in the Universities. *International Journal of Engineering and Information Systems*, 2017, 1 (1), pp.1-19.