

HR Digitalization as a Critical HR practice to Navigate through Covid-19 for the Improvement of the Employee Job Performance: Review Paper

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Abstract

Although digitalization of HR is popular nowadays, it is still in its infancy stage and studied by relatively less researchers. However, its significance has been more realized during the latest epidemic of Covid-19 as companies have to depend on working-from-home environment and moved toward digitalization in a tremendous speed. The main focus of this paper is to review the concept of HR digitalization, its advantages and disadvantages, the obstacles to implement HR digitalization. Moreover, the paper will also investigate the effect of HR digitalization on the employee job performance. The review revealed that HR digitalization has revolutionized the world HRM through the effective and efficient use of the social networking and internet websites. In addition, digitalization of HRM is not an easy decision or process before which the organizations have to consider many aspects and characteristics as well as to do much research and evaluation because there are several factors that participate into the successful implementation of the digitalized systems. Furthermore, digitalization of HR provides operational advantages but also other relational benefits, and more or less enhances from the employee job performance.

Keywords

Covid-19, HR, Digitalization, Employee Job Performance, Remote Work

1. Introduction

Large body of literature is discussing the new technologies introduced by the Industry 4.0 and their effect on the organizations and their performance. However, there is still a gap in literature regarding the effect of HR digitalization for pandemic mitigation, and how it can affect the employee job performance. Mitrofanova *et al.* (2018) defined digital HR as using digital tools and applications for solutions, experimentation, and innovation. Business world has seen tremendous improvement recently in HR digitalization due to the need to cope and navigate through the critical situation brought by Covid-19. This digital technology came with great advantages for both the organizations and the employees during Covid-19. According to Narayanamurthy & Tortorella (2021), the performance of employees and organizations has been improved with HR digitalization with the real-time connection such technologies provide between the physical and digital systems.

Tremendous changes have been brought by the epidemic of Covid-19 as a form of global pandemic that has imposed companies to target the digital business processes and virtual work, with HRM in the heart of these transformations to manage the unforeseeable future and the vague present conditions (Gigauri, 2020). According to the Sheppard (2020), it is advisable that businesses be ready for any changes and disorders that may happen in the future by the way of generating and using platform-based technologies and developing the models of business. Previous studies assured that technologies, like digital platforms, Artificial Intelligence, robotics, augmented reality, and block chain will play a big role in changing the job of HR professionals (Parry & Battista, 2019). For the purpose of digital work adaptation, new skills and techniques need to be learnt by employees to be more acquired in business (Sheppard, 2020).

To go further, the new pandemic of Covid-19 has forced companies to transfer to the digital operations; this shift has compelled HR to navigate their people through this unpredicted situation (Gigauri, 2020). Besides, the role of the HRM is to help organizations to advance in formulating the remote work policies and adopting

the necessary systems while also helping the employees to use these digital platforms and systems. In the world that is interconnected, organizations are always encouraged to adopt for any change (Carnevale & Hatak, 2020). Thus, there is a need for investigating the transition to the remote and acceleration of digitalization for organizations to respond to any pandemic such as Covid-19. New technologies make work flexible and produce a chance for workforce to remotely work. For the management of HR to ensure this, it has to produce suitable policies and systems of performance (Parry & Battista, 2019). Accordingly, HRM has to support companies to change the processes of business to digital space through porting the skills of the employee, creating organization culture adaptable to digitalization of the employee.

The acceleration and extension in the digital transformation of organizations has been facilitated by the advent of Covid-19 pandemic (Mhlanga & Moloi, 2020; Soto-Acosta, 2020). Companies have been struggling to keep their business by using numerous kinds of information and communication technologies. They are forced to telework and increase the use of digital technology implementation (Soto-Acosta, 2020). Compared to pre-lockdown, a huge number of people are pushed to try new digital services, and their internet usage is much more in Malaysia (The Sun Daily, 2020). The usage of video-conferencing services, e.g. Zoom, and content delivery services, as a part of the digital transformation in the organizations, has been increased ten times (De *et al.*, 2020). In other words, the never-expected situations brought about by Covid-19 required the adoption of new digital technology to preserve organizations sustainability (Indriastuti & Fuad, 2020). Technology is an important factor in organizations sustainability nowadays because digital technology influences companies and their activities. A recent survey was conducted by Digi to gather information about the HR digitalization among the employees in different Malaysian sectors. The findings revealed that 32% of the respondents suggested the ineffectiveness of current process of HRM because they are unsystematic and labor intensive while 21% of the participants believe that such processes are lacking to secure data, and difficult for tracking or measuring performance or growth (altHR, 2020). In addition, a survey was conducted by Forrester organization to try understand the current state of digital transformation and cloud adoption. According to the results, as presented in figure 1, a minor number of firms in Malaysia are implementing digital transformation or trying to expand it, with a large portion are still planning to implement it digital transformation.

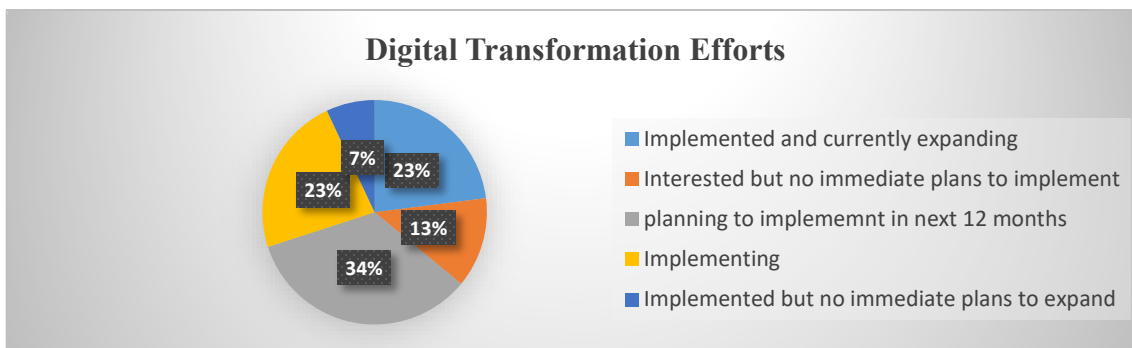


Figure 1. State of digital transformation (DT) in Malaysia
Source: Granzen A. (2021)

Nevertheless, the increase of using technology has touched the urgent need for HR digitalization that has been sought for a long time. Information and communication technology has recently been witnessed in business, and this has smoothed the way for the fourth Industrial Revolution, known as “Industry 4.0”. This new phenomenon is characterized by the adoption of advanced digitalization in workplaces and incorporates a multitude of technologies that span internet of things (IOT), Artificial Intelligence, 3D printing, cyber security and cloud-based manufacturing (Vaidya *et al.*, 2018). The survey results conducted by Forrester organization also show some reasons why those minority of organizations were successful in their digital transformation as depicted in Figure 2, with improved IT capability as the most contributing factor.

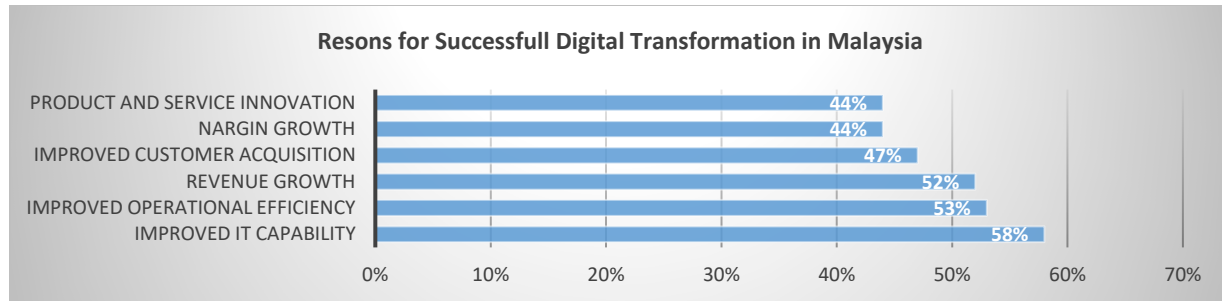


Figure 2. Reasons for successful digital transformation in Malaysian organizations
Source: Granzen A. (2021)

Because of these new systems, HR professionals have given much focus and importance to the HR strategy (Ahmed & Ogalo, 2019) that considerably eliminates their administrative burden (Stone & Dulebohn, 2013). These systems also reinforce HR efficiency (Bondarouk, Parry, *et al.*, 2017) and minimize costs of organizations (Findıklı & beyza Bayarçelik, 2015). In addition, newly conducted studies purposed a strong link between HR digitalization and the productivity of the employees (Iqbal, Ahmad & Allen, 2019), performance of organization (Iqbal *et al.*, 2019) and effectiveness (Obeidat, 2016).

The rapid technological development and its ever-spreading resulted in a digitalized society. This revolution in digitalization has its own consequences for companies on several levels. Previous researchers shed the light on the outcomes of digitalization on various aspects such as the preferences of customers, marketing, behaviors of the customers, and performance of businesses. Furthermore, the focus of many authors has been on how digitalization has eased the processes and functions of HRM such as HR planning, performance management, and recruitment (Bondarouk, Harms, *et al.*, 2017; Das & Sureshkrishna, 2019; Khashman, 2019). Nevertheless, the role of HR digitalization in facilitating or improving the effectiveness or efficiency of HR practices towards employee job performance was neglected. Thus this paper aims at reviewing HR digitalization definition and concept, HR digitalization practices, factors and obstacles affecting the implementation of HR digitalization. The paper will also review the advantages and disadvantages of HR digitalization. Furthermore, the paper will investigate how HR digitalization impacts the employee job performance.

2. HRM Digitalization: Definition and Concept in the Era of Digital Transformation

Numerous concepts refer to digital technology, e.g. digital transformation, digitalization and digitization (Strohmeier, 2020). Digital transformation is the networking of advanced technological development of all sections of the company across value chain levels (Andre *et al.*, 2018). It is the embracement of digital technology for the purpose of enhancing the performance of an organization (Indriastuti & Fuad, 2020). It is the process of using digital potentials for the purpose of fulfilling the goals of strategic and operational HR management (Strohmeier, 2020). Digital technologies of HR are a sort of instruments, e.g. HRIS, gamification, electronic pointing, chatbots, etc., techniques and services utilized to enhance the management of HR management work and eases the transformation of the company.

HR Digitalization, generally, can be considered as the alignment between the strategic choices and the behaviors of the employees with the help of technologies that are integrated in nature and flexible (Panos & Bellou, 2016). For Bondarouk & Ruël (2009), it is an umbrella term which involves all the possible mechanisms and the integration tools between IT and the management of HR, while Kristoff *et al.* (2018) define it as the way people use technology to fulfil their tasks and duties. However, there are still those researchers who are with the view that digitalization is a process. According to (Ketolainen, 2018), the concept of digital HR transformation is a movement into a digital HR where all the processes become data-driven and automated. It is the use of technologies that enables changing business. This view of digitalization to be a process was also supported by Bhatia (2016) who stated that digitalization is a process by which all types of information and analogue signals are converted into a digital format which can be understandable and processed by electronic devices or computer systems.

Furthermore, e-HRM was defined by Johnson *et al.* (2016, p. 29) as a system by which all the parties involved in the HR functionality implementation are connected and are able to deliver their jobs and fulfil the strategic decisions made. From the definition, it can be inferred that e-HRM is the platform or a system that is utilized by both internal

and external stakeholders of the organization for the purpose of accessing the processes and functions of the HR with wider aspects enabled by the information system (Johnson *et al.*, 2016). Drawing upon these definitions, Iqbal *et al.* (2019) stated that e-HRM is the way various HR practices and policies are integrated with the IT processes for the enhancement of the workplace conditions and adding value for the companies.

To be more specific, the digitalized HRM is bigger than an IT tool that is used for performing HR functions and activities. It is a method by which all activities of the HRM and IT are integrated within organizations for improving the performance of both the employees and the organization as a whole (Bondarouk & Ruël, 2013; Johnson *et al.*, 2016; Obeidat, 2016; Panos & Bellou, 2016). Das & Sureshkrishna (2019) stated that companies need to be ready for acquiring the new technologies for remaining competitive in this digital era. In this case, digitalization is seen as an imperative, a necessary change that organizations cannot escape because it has become a necessity due to Covid-19.

To illustrate the concept of e-HRM in the era of digital transformation, Palmer *et al.* (2017) and Maria (2020) have used the case study of Adobe company, global software company, to show how digitalization impacts HRM. In 2011, this company decided to change its business into selling a cloud-based software rather than being a provider of physical packages. In the new method, the customers have to download or sign up in the website for monthly or annual subscription rather than buying a CD. Similarly, the change has also meant a change in the whole way the employees were conducting their job which resulted in a new function for the HRM as well. HR employees had to put much effort to build the employees and develop them to be working effectively and in autonomy with the new cloud based approach. For instance, the previous method of performance appraisal was changed to the new annual reviews that can provide immediate and continuous feedback (Palmer *et al.*, 2017). Therefore, it is clear that much aspects of the organization have to be changed and new ways and methods have to be used.

3. HRM Digitalization Usage / Practices

In the literature, there are many concepts used to refer to the digital or electronic nature of the HRM. Such terms are electronic HRM, online HRM, virtual HRM, and web-based HRM. Nevertheless, the most common terms are e-HRM and HRM digitalization because other terms seem to have narrower intention. However, e-HRM and HRM digitalization are much inclusive and are used interchangeably.

Recently, digitalization is the focus of the organizations all around the world as the latest tool in HR practices (Bhagat, 2020). It has revolutionized the world of employee hunting and hiring through the effective and efficient use of the social networking and internet websites. HRM has many functions and practices that companies used to conduct in the traditional way, however, over the last decade, many organizations have made a tremendous shift to the new technology-intensive approach in executing HR tasks (Iqbal *et al.*, 2019). During Covid-19 and the several lockdowns imposed by the governments, digitalized HR could help in achieving the strategic goals as well as improving method, time, cost, and quality of HR services.

According to Nachit & Okar (2020), companies in the modern era go through digital transformation for all HR practices involving planning and hiring of new employees, and then compensating, appraising, and training them. The authors clarified that digital transformation has been accelerated due to Covid-19 ever than before with the aim of achieving the operations and activities of HR more efficiently and accurately. HR digitalization can grant advice to the managers of HR at various levels (Lawler & Boudreau, 2015), with certain extent of impact on the practices and activities of HR in the organization and its culture (Khashman, 2019). The digitalized HR system helps in supporting companies in the management of information, statistics, personnel and organizational archives which are recorded and then analyzed electronically (Johnson *et al.*, 2016). Some sub practices of the digitalized HRM are discussed below with reference to the Malaysian context during Covid-19:

3.1 E-Recruitment and Selection

E-recruiting is the process by which the potential candidates are attracted, selected and recruited through the use of the internet and other digitalized technologies such as conferencing candidates via online video (Musfiqur *et al.*, 2018). In the united states, only 16% of HR professionals stated that they are prepared to go fully virtual with the practices of hiring (Kuligowski, 2020). This was supported by Agahi (2020) who confirmed that HR managers lack the experience to use digitalized tools for the recruitment and selection process. Even this type of hiring or recruiting has existed years ago before the pandemic, Covid-19 has been seen as motive for enhancing and accelerating this virtual method. According to Stone *et al.* (2015), the companies utilize all the potential technologies for the assessment of the abilities and competencies of the candidates to select the most talented when using the digitalized recruiting.

Different job vacancies are advertised through the internet. Thus, digitalized recruiting does the work of managing the required job descriptions of the available vacancies, search and attract the potential candidates, and then goes up with the recruitment process (Kumar & Lalitha, 2016).

According to Bhagat (2020), social media platforms such as Skype, LinkedIn, Glassdoor and Facebook are some of the tools that digitalization provides for the companies to conduct the process of recruitment; and with the advent of Covid-19 new platforms for interviewing candidates such as Zoom Platform, Google meet, and Microsoft Team are widely used by the companies. Therefore, technologies and digitalization have helped a lot during Covid-19 and attracted more companies to the use of the digitalized recruiting. According to Mustafa, (2020), because of the lockdowns imposed by the Malaysian government, companies depend on video or phone interviews or even via virtual webinars.

According to JoAnn Hodgdon (2021), the result of a questionnaire distributed by Gartner to 334 HR leaders found that 86% of the companies are using new virtual technologies for the purpose of interviewing candidates. Besides, Nestle (Malaysia) Bhd has been utilizing interns to recruit trainees and mid-career workers (Mustafa, 2020). The company involved candidates in virtual career fairs with the help of partnerships with Lazada, Talentbank, and Seeds, and they continuously advertised vacancies social media platform as well as Nestle Malaysia career website. Another Malaysian company is the Axiata Group Bhd. According to Mustafa (2020), during Covid-19, the candidates went through two online interviews in the process of selecting the potential employees. Candidates are notified about the details of the interview such as the time, format and duration, taking to the consideration the differences in time with those living abroad. The candidates' documents are validated before the interviews which are taken place through Microsoft Teams.

3.2 E-Training

It refers to the new way of teaching and developing the employee knowledge, skills and talents with the use of the new technologies through the internet. It includes all types of training tool like online lectures, Webinars, Case Study discussion, and you can take the feedback of training through Google form (Bhagat, 2020). Besides, this method enables the HR professionals to place training programs on the internet or through digital devices such as CD where the employees are required to go through the content with no restrictions of time and place of training to obtain the required skills.

With Covid-19, companies faced a challenging task to train and develop their employees which forced them to go for virtual training. It has been proven most effective and efficient method for employee training and development with a great decrease in travel time and costs (Raiya Umar *et al.*, 2020). E-training covers several applications and programs that are web-based used by the companies for employee training and development such as SPOC and MOOC. With the critical situation of Covid-19, many new platforms has become so popular and used in Malaysia such as Zoom, MS-teams, Google Meet etc. According to FRAIJ (2021), many companies have cancelled the employee training programmes in Hungary to protect the employees because they lack the required facilities, with only small number of companies were able to conduct the online training. The author stated that those companies with no facilities to conduct the online training are more willing to conduct less training programs or stop it at all. In Malaysia, companies has also to the opportunity to shift to online training as well. For instance, there was strong growth in Sunago Education Sdn Bhd, as many companies such as Padini and Bakels (Malaysia) Sdn Bhd used Sunago Education to improve their skills in English Language (NST Business, 2020). GitHub, LinkedIn and Microsoft are other platforms that were popular during Covid-19 as well.

3.3 E-Compensation / e-Payment

It refers to all the digitalized systems utilized by the organizations to conduct the complete process of managing the compensation of employs and tracking the benefits programs based on the workforce participation. Certain employee information is collected and analyzed such as the classification and productivity rates of the employees as well as their absences and overtime work (FRAIJ, 2021). The e-payment systems do more than that in administrating compensation related issues such as retirement, insurance, and profit sharing (Musfiqur *et al.*, 2018). Thumb punching machine is a good example of how digitalization is used in compensation to facilitate the HR practices. The complete report of attendance can be downloaded with one press after the employees has given their finger print in the Biometric system every day at their arrival and departing times (Bhagat, 2020).

3.4 E-Performance Appraisal

It refers to the utilization of the digitalized programs, software and applications for the purpose of employee job performance measurement, recording the reviews of the employee job performance and providing feedback or suggestions for the employee job performance improvement (Majeed *et al.*, 2020). The criteria decided by the HR professionals according to the organizational goals and in alignment with the specific responsibilities of the employees. Several statements are provided by such system or technology for each category of performance, and then the appraisers can select the appropriate score of rating for each statement. Thus, the efficiency and effectiveness of the employees in achieving the company objectives is measured. Google form, for example, can be used to do the 360 degree performance appraisal and help keeping data about the core competencies and abilities of the organization workforce (Bhagat, 2020). In addition, using the digital technologies for deep data analysis to do the employee job performance appraisals will enable the organizations understand the employees' characteristics accurately and comprehensively (Zhou *et al.*, 2021). This in turn will lead to the development of a competent, effective, and highly performing workforce.

4. Factors and Obstacles Affecting the Implementation of HR digitalization

In developing countries such as Malaysia, the implementation of digitalized HR is surely in its infancy stage with much effort is still needed (Bondarouk, *et al.*, 2017; Musfiqur *et al.*, 2018). According to Digi survey, the surveyed companies have showed some reasons for not adopting digitalized HR platforms; high costs (44%), small size of the organization (28%), inefficiency of system in tasks consolidating (17%), and worries among employees to make their job redundant (altHR, 2020). Many factors do influence and hinder the effective implementation of digitalized HR. Therefore, many projects trying to implement digitalization in HR has reported less achievement or failure (Majeed *et al.*, 2020). Several researchers have divided the successful factors for digitalized HR system implementation into three levels which are people, technology, and organization (Bondarouk *et al.*, 2017).

The people factors are related to the organizations' employees and managers. In a review paper by Johnson *et al.* (2016) which traces the relation between MRM technological evolutions, it was found that the major obstacle in adopting e-HRM is the lack of workforce that is technically skilled; creating technostress (Kim & Shcherbakova, 2011). This is confirmed by Baskaran *et al.* (2020) who asserted positive influence of technology adoption on the condition that the organization provides the suitable skills development training programmes for the employees. This is because the digitalized systems depends on collecting huge data from the Internet, thus high-level skilled employees are needed to sort and classify these data (Johnson *et al.*, 2016). With Covid-19, Malaysia is intensifying the efforts toward the digitalized world. Top management support and user acceptance are among the most stressed factor related to people in determining the degree of success in the process of HRM digitalization (Bengtsson, 2017; Bondarouk, Parry, *et al.*, 2017). Therefore, the HR managers as well as the government related associations are playing a great role in facilitating the process. According to the CEO of the Malaysia Digital Economy Corporation, they aim at establishing Malaysia as the "heart of digital" Asean (Chau, 2021). There are many initiatives and reforms to increase the digital adoption for the SMEs and improving the required digital skills of the employees via implementing the public-private partnership programme such as the Premier Digital Technology Institution (PDTI), Industrial Skills Framework (IndSF), Digital Skills Training Directory for working professionals and a data technology collaboration program with technology giants. A good example in the Malaysian context for the Digital tools and applications is the altHR which was used by Digi for the past few years. This system was recently available publicly for helping the Malaysian organizations to go digital and navigate through the difficulties brought by the pandemic of Covid-19. As a digital solution for the HRM, altHR has many functionalities that enable the conisations managers with tracking the workflow in efficient way and increase employees productivity by reducing the labour intensive tasks. The features and functionalities of altHR include digital sales kits, management of expenses and contactless time tracking (altHR, 2020). In addition, a latest report by the Randstad Malaysia, a great percentage of Malaysian workers (89%) are positive about digitalization and willing to acquire the necessary skills (Writer, 2019).

The second category is the technology factor which covers all influencing factors of the technology itself or the extent toward which the organization is utilizing technology (Bondarouk *et al.*, 2017). It is, thus, necessary to evaluate the organizational needs and requirements and identify the specifications for the successful implementation of digitalization in HR as suggested by Majeed *et al.* (2020) who has also relates the failure to the lack of sufficient IT infrastructure. Besides, Maria (2020) has proposed other aspects to be taken to consideration as well that include characteristics of application, data and integration. In addition, Njoku *et al.* (2019) studied the relation between usefulness and ease of use with the attitudes of the top management managers towards the value of utilizing digitalized tools. In this study results revealed a positive and strong regarding the factor of usefulness perception, while the same

results revealed negative and weak association with the factor of ease of use perception. Furthermore, other factors were also highlighted such as data characteristics (Nabila & Mamoon, 2017) and integration (Murphy, 2018). Strohmeier (2020) mentioned that organizations face difficulty to centralize and computerize the HR department and integrate the digitalized systems with the appraisal structures and the payroll.

Finally, the third category is the organizational factors. These factors related to all the characteristics of the organization. These factors include organizational size, the methods of project management and planning, the accessibility to data, the privacy and security concerns, core capabilities and resources (Bondarouk *et al.*, 2017). The organizational factors that influence the successful digitalization of HRM have been divided by (Majeed *et al.*, 2020) into two main sub-categories that include the characteristics organization and the organizational resources and capabilities which are discussed in the following paragraphs.

On one hand, resources and capabilities are the main obstacles to implement digitalization in HRM. A study conducted by Abdali (2019) found that budget limitations and financial constraints are playing a fundamental role to evaluating the success of implementing corporate digitalization based on the data obtained from HR managers. This is because huge costs need to be spent for the process of digitalizing HRM, and there might be budgetary constraints that make a big influence on HR managers' decisions. This was also confirmed by Murphy (2018) who reported that corporate budget was the biggest issue faced by HR managers in acquiring new digital technologies. Majeed *et al.*, (2020) adds that HR managers lacks the awareness of the digitalized HR systems potentials. This was supported by (Njoku *et al.*, 2019) who reported the gap in technological knowledge which reduces the utilization of digital tools, and Ketolainen (2018) who stated that the digitalization development has been neglected for a long time and only recently HR companies started to realize the potential of such skills and tools.

On the other hand, organizational aspects and characteristics are also having a significant role in the success of the HRM digitalization process. A study conducted by Ketolainen (2018) revealed that the method used to digitalize HRM and its success rates are affected by factors such as the organizational size, its sector and the geographical and business area in which the organizations are operating. For instance, the size of the organization is having a positive correlation with digitalization according to (Majeed *et al.*, 2020; Mugerwa, 2019). This means that the bigger the organization, the easier and more successful are the organization to digitalize the HRM. Ketolainen (2018) has confirmed that digital transformation is more common in large companies and medium rather than the small companies. Other factors that impacts the implementation of digitalization in HRM are the organizational and structure and complexity, organization culture, and leadership (Thite, 2020). In regards to the organization structure, it is more difficult to adopt technology if the organizational structure is more complex and bureaucratic. Besides, when the organizational culture support the agile and adoptable nature where employees are free to create and express their ideas, they are having more ability to adopt digitalization tools. Furthermore, the digital world needs competent, visionary and inspiring leaders who supports the initiatives, experiments and investments in digitalization.

Thus, it can be concluded that different factors can contribute to the success or the failure of implementing HRM digitalization. The readiness to implement and adopt E-HRM tools and practices in SMEs depends heavily financial, expertise, and technical resources (Waheed *et al.*, 2020). Therefore, Digitalization of HRM is not an easy decision or process before which the organizations have to consider many aspects and characteristics as well as to do much research and evaluation.

5. Advantages and Disadvantages of HR Digitalization

With the new digital revolution in the business world and the current concern in facing epidemic crisis such as Covid-19, digitized HRM has proved to be the solution that provides several advantages. E-HRM is an internal optimization tool (Nöhammer & Stichlberger, 2019). This integrated computerized system creates value for both the employees and the organizations because it enables the alignment between the HR practices and the strategic objectives. Several researchers (such as: Ibrahim, 2021; Panos & Bellou, 2016; Piabuo *et al.*, 2017; Rawash, 2012; Roman, 2017) have conducted studies on e-HRM research and documented its importance. According to the Digi survey among employees working in Malaysian sectors, the majority of the respondents (88%) expressed that the digital-led working environment has eased their workload, 37% of the respondents believed digitalized HR tools saves time while 29% reported data accuracy as one of the benefits gained from Digitalization (altHR, 2020).

Primarily, variety of potential benefits and advantages have been illustrated in previous studies on how E-HRM facilitates the operational tasks of HRM. According to Musfiquir *et al.* (2018), saving budget and time, easier and

secure accessibility to HR information, strategic fit between the HR strategy and the HR System, communication and efficiency improvement, HR services enhancement, improving of employee's competences, knowledge and skills. All these will lead to efficient and effective HRM which in turns could lead to better organizational and employee job performance. This is confirmed by the study of Khashman & Al-Ryalat (2015) who stated that the operational performance of the corporations is positively influenced by E-HRM and Rawash (2012) who confirmed the improvement of the overall profitability of corporation via improving the employee job performance. In addition other advantages were also highlighted in the literature review such as increasing the HR efficiency, decreasing the administrative burdens, facilitating HR planning, reducing costs, and improving employee job performance (Yusoff *et al.*, 2015).

Mainly, one of the most highlighted advantage of E-HRM is the generation and then the easier accessibility to data which increases accumulation of knowledge and enables much general flexibility in the work environment (Nöhammer & Stichberger, 2019). The utilization of E-HRM provides more advanced analytical abilities to analyze the data through algorithms which increases and facilitates the flows of information in the organization. Rasal & AL Naiem (2020) adds that E-HRM is a support to HR managers in facilitating the process of accessing the data, encouraging the IT usage and centralizing of data, faster transportation for services, alignment of HR approach the organizational strategies, clear policies, roles and legislations, and also enhancing employee skills and knowledge.

Another significant advantage that is emphasized is that E-HRM saves much costs. Lager & Milojkovic (2018) stated that digital tool implementation in organizations reduces the incurred costs due the fact that such tools will help speeding up the processes and the information management. However, there is inconsistency in findings regarding the issue of saving costs. For instance Reddick (2009) revealed that no significant relation between cost saving and using of E-HRM. Another study was conducted by Murphy (2018) which found that using E-HRM does affect the motivation of the employees but no clear evidence was found on reduction of HRM operating costs.

Efficiency in the operations of HRM is another advantage of HRM digitalization. According to Maditheti & Gomes, (2017), although it is commonly believed that a number of resources are scaled down by the automation which affects the employee job performance, the usage of E-HRM can create smarter provisioning of resources because it is used in higher-value collaborative operations and activities. This was confirmed by the study of Murphy (2018) which confirmed that E-EHM leads to efficiency improvement.

More importantly, in investigation the benefits of HR digitalization, time saving is highly stressed. Digitalization converts the employees from labour intensive to and makes them think on more significant and valuable things such as organizational development, objectives and strategies positioning the company better than other competitors in market and makes the organization known for governance, strong culture and be the best place to work (Maditheti & Gomes, 2017). This results in an increase in the productivity of the HRM function. Moreover, the process of HRM are more simplified faster and simpler (Démeijer, 2017). Again, this will leads to employees and managers who focus on more meaningful activities toward their functions.

In regards to effectiveness, the review of the previous studies shows that through digitalization of HRM, organization is more effective in increasing the quality of administration and flexibility of HR and creates lesser bureaucracy within functions. According to Limoncelli (2018), organizations can store and document the data of a large bulk of employees for a long span of time in hustle and smooth manner with mere errors with the help of the automation and digitalized tools. This was also confirmed by Murphy (2018) who stated that employees feel more stressless and focus on working more efficiently when they are working from home utilizing digital tools because the administrative work is reduced. Therefore, it can be concluded that HRM digitalization enables employees to focus on more strategic functions that can create high value with less errors because the workforce are less involved in tasks that are low-level administrative.

In addition to the previous organizational and operational advantages, many other relationship consequences are gained from the digitalization of E-HRM. According to Murphy (2018) commitment of employees, who feel more connected, is improved by utilization of digitalization. More than half (56%) of the respondents interviewed stated that after the digital tools were introduced to the work environment, they felt more connected. Another study was conducted by Mugerwa (2019) through employing interviews among HR professionals. The respondents agreed that digital tools and strategies contribute to harmony at work as well as they simplify and aide the process of employee job performance appraisal, training and communication. The creation of more communication was highlighted by Lager & Milojkovic (2018) who stated that digital tools creates more communication channels.

Another highlighted aspect is the motivation of employees. Shah *et al.* (2020) has suggested that digitalization of HR does influence the employee motivation in organizations. According to the authors, the organization should determine the causes when the employees produce poor performance which could be because of poor rewards, employee deficiencies/insufficiencies, or inconsistent initiatives of motivation. This is confirmed by the study of Fedorova *et al.* (2019) who investigates how the employees' motivation is affected by the digitalization. The findings show that the utilization of digital tools to monitor employee work, the employees gain more motivation for enhancing their performance, undertaking new projects, and obtaining more recognition from the supervisors.

After discussing the advantageous aspects of HR digitalization, the negative aspects must be also weighted. Through the analysis of the previous studies, only few negatives are identified. First, one main disadvantage of digitalization of HR is the security of data (Odegov & Pavlova, 2018) and management of sensitive information of employees (Kristoff *et al.*, 2018). This is confirmed by Kristoff *et al.* (2018) who confirmed that secret and confidential information is one of the main constraints for implementing the digitalization of HR. Other aspects are the scarcity of required skills and the financial ability to acquire IT skills and the lack of awareness among the decision makers on the potential of HR digitalization. However, the researchers believe that not all these aspects can be considered as disadvantages but only difficulties that the organizations must deal with.

6. HR Digitalization and Employee Job Performance

Although, HR digitalization has been mentioned and discussed by several previous researchers, however, it has not got its enough investigation. In this section, the researcher tries to establish the effect of HR digitalization on the employee job performance based on the previous studies. Different dimensions of the technology adoption have been explored such as the employee attitudes, behaviors, and acceptance (Baskaran *et al.*, 2020), its impact on the HR functions (e.g. Evseeva *et al.* (2019); Savola & Troqe (2019)), advantages and disadvantages of different recruiting methods, and challenges for HR managers (Das & Sureshkrishna, 2019). Another study conducted by Das & Sureshkrishna (2019) has argued that technology has brought several implications for the HR professionals and managers. This is supported by Bengtsson (2017) who confirmed that digitalization is the new norm that must be adopted by HR managers.

Bondarouk *et al.* (2017) conducted a comprehensive review study to offer a better insight on the HR digitalization for a longer period of time globally. The researchers confirmed that there is much potential for the digitalization of HR to enhance the effectiveness of HR and contribute to the achievement of the corporate goals and objectives. This was supported by the recent study of Iqbal *et al.* (2019) who found employee productivity to be positively impacted by HR digitalization in a study among the employees working in the banking sector in Pakistan. The participants in this study were working in banks that already introduced the e-HRM. Another study was conducted by Narayanamurthy & Tortorella (2021) to study the influence of Covid-19's work implications (such as: virtual connection and working from home environment) on the performance of employees. The study included the IR 4.0 technologies as the mediator in the framework. The findings revealed that the implications of Covid-19 are affecting the performance of the employees and that the technologies of IR 4.0 moderate the enhancement of employee job performance. The researchers highlighted that the performance was enhanced by such technologies due to the real-time connection established between the physical and digital systems. The results are supported by Olsen & Tomlin (2020) who stated that the digitalization is not only enabling companies to reduce costs, provide a flexible work environment, increase speed, and improve quality, but it also reduces the tensions between the stakeholders and, thus, enhances the employee job performance. Lager & Milojkovic (2018), for example, in a study on how digital adoption has been adopted by organizations to manage employees, found that it can improve employee engagement on organizational activities. Another study by Fedorova *et al.* (2019) found that the digitalization reduces the routine tasks and human errors which is also an enhancement of employee job performance.

Iqbal *et al.* (2019) examined the direct links between e-HRM and productivity as well as the mediated links between e-HRM, perceived HR service quality and productivity. It was revealed that e-HRM practices have a statistically significant positive effect on managers' perceptions of labor productivity. The study also revealed that e-HRM practices influence the quality of HR service, and that the quality of HR services fully mediates the relationship between e-HRM practices and managers' perceptions of labor productivity. Results highlight the importance of designing and implementing e-HRM systems so that they support organization workflow and enable workers to carry out a range of HR and non-HR activities more efficiently.

Umar *et al.* (2020) investigated the relationship between electronic Human resource Management (E-HRM) practices and employee job performance (i.e. task, contextual, adaptive performance, and counterproductive work behavior at the individual level. Both e-communication, and e-compensation were significantly and positively related to all the dimensions of employee job performance (i.e. task, contextual, adaptive, and counterproductive work behavior). Also, e-training was found to be positively related to task and adaptive performance only. Similarly, results showed that e-performance appraisal practice was only related to contextual performance and counterproductive work behavior. On the contrary, e-training practice demonstrated no significant effect on contextual performance and counterproductive work behavior. Similarly, no significant direct effect was found between e-performance appraisal and task and adaptive performance.

Several other researchers have also conducted similar studies. First, Ibrahim (2021) explored the impact of e-HRM on workforce-performance in a rural area of Pakistan. Findings of the study revealed that there is a significant positive relation between operational e-HRM and workforce performance. However, there is an insignificant relationship between Relational e-HRM and Transformational e-HRM with Workforce performance. Therefore, the current study found that Operational e-HRM is compatible for rural Industries in Khushab as compared to Relational e-HRM and Transformational e-HRM. Second, Nurlina *et al.* (2020) analyzed the relationship of e-HRM implementation to employee job performance both directly and indirectly through the moderating effect of human resource service quality variable, both practically and theoretically. This study explores four hypotheses in a comprehensive fashion; the results of this study show that all hypotheses have positive and significant effects both through direct and intervening relationships. Among the three direct relationships, the relationship of e-HRM variables on HR Service Quality is the greatest and the most dominant. In addition, Narayanamurthy & Tortorella (2021) examined the impact of Covid-19's work implications on employees' performance. Second, the study seeks to verify the moderating role of I4.0 base technologies on this relationship. The results revealed that COVID-19's work implications (i.e. home office work environment, job insecurity and virtual connection) do impact employee's performance, although not at the same extent. Further, we found that I4.0 technologies moderate the enhancement of employee's performance.

Nevertheless, other researchers in the literature review have explored the operational efficiency. Khashman & Al-Ryalat, (2015) conducted a study with the aim to identify the impact of electronic human resource management practices through the main study dimensions represented in the (e-recruitment, e-selection, e-training, e-performance appraisal, e-communications and e-compensation) on the operational performance. The results showed that there was an existence of a positive statistically significant impact to dimensions of electronic human resources management (e-recruitment, e-selection, e-training, e-performance appraisal, e-communications and e-compensation) on the dimensions of operational performance (time, cost, quality of service, and flexibility). Another attempt was by Muqaddim & (Hosain, 2021) to reveal the role of some chosen electronic human resource management (E-HRM) practices on the operational efficiency (OE) in Bangladeshi garment sector. Results after a vigilant and comprehensive statistical analysis exposed that all the selected independent variables have positive relationships with the dependent variable (OE). However, such positive relationships are stronger (significant) in case of e-compensation & benefit, HRIS & e-communication, e-personal profile and e-performance appraisal whereas such positive relationships are comparatively weaker (insignificant) in case of e-recruitment & selection and e-job analysis.

In conclusion, through the analysis and the discussion, it can be said that digitalization of HR provides operational advantages but also other relational benefits that include motivation and engagement of employees, high quality communication and creating more communication channels. Therefore, it can be concluded that HRM digitalization enhances the performance of the firms. This is because the organizations can utilize the advanced digital tools to collect and process the employees' data which enables the organizations from identifying the most contributing employees making the most difference towards the corporate performance success via analyzing data. This will help a lot in all the HRM functions such as compensation, training and development, and recruitment (Amladi, 2017). In addition, using the digital technologies for deep data analysis will enable the organizations understand the employees' characteristics accurately and comprehensively (Zhou *et al.*, 2021). This in turn will lead to the development of a competent, effective, and highly performing workforce. Many researchers (such as: Bondarouk, *et al.*, 2017; Bondarouk, Parry *et al.*, 2017; Yusoff *et al.*, 2015) have emphasized the significant contribution of using the E-HRM practices for the improvement of employee characteristics and their performance. Based on the discussion above and the outlined studies, it can be concluded that HR digitalization more or less affects the employee job performance as well as the operational performance. This can be illustrated by the fact that HR digitalization facilitates the efficient and effective implementation of HR functions and practices in the work environment.

7. Conclusion

This review paper explored the topic of HR digitalization at different levels. First, the paper reviewed the concept of HR digitalization. It was found that it has its foundations in the previous research, but it established itself as fundamental process of the today remote business work environment because it can replace all the traditional systems of HR practices. It was also found that several obstacles affecting the successful implementation of HR digitalization that can be grouped into three levels which are organization, technology, and people (such as budget limitations, financial constraints, lack of technically skilled workforce, management support and user acceptance, and small size of the organization). In addition, digitalization of HR provides operational advantages as well as other relational benefits that include motivation and engagement of employees, high quality communication and creating more communication channels. It can also alleviate the inherent tensions between these key operational priorities. Therefore, most of the previous research shows HR digitalization as a significant aspect in the business world. Nevertheless, the concept is still in its infancy stage in most of the developing companies, and little scientific and systematic research was conducted to explore the HR digitalization which has been gained popularity and significance in the recent time during the Covid-19 pandemic which has uncovered the weakness of the traditional HR practices and weaknesses. Therefore, future research is encouraged to scientifically examine more practical aspects of this concept such as how it affects the employee job performance. Government and policy makers should also invest in HR digitalization and provide the essential infrastructure that enables the organizations to sustain epidemic crisis such as Covid-19 and develop more advanced systems.

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