MASTER THESIS

The constant research on adoption and consequences of e-HRM. A comparison between past and present.

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Preface

This work presents my research done for the Master Thesis in Business Administration, specialization in Human Resource Management of my double degree program. It therefore represents one of the last pieces of a path that is coming to an end. It was certainly not easy, I personally encountered various obstacles that more than once threw me down but at the same time, thanks to the people I had close to me, I had the strength and tenacity to go on to get here.

For this, first of all, I would like to thank my first supervisor, Tanya Bondarouk, a professional, helpful and motivating woman as well as a teacher. From the first moment she showed herself to be a point of reference for all of us, taking an interest in our difficulties and needs, not only as students. Your advice and help was fundamental, I could not have completed this journey without your support! I would also like to thank, Jeroen Meijerink, as second supervisor, for your valuable comments and advice to improve my work.

A special thanks to my Family, my parents and my brother, for supporting me from miles away, for not making me feel alone, for always having the right words, for reminding me how much I am worth and not to give up. Thank you for making me the person I am today, it is above all thanks to you.

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Finally, thanks to myself, once again, for not giving up, for having come this far, a significant goal that serves to remind me to believe more in what I do!

With Love,

Roberta

Abstract

Following globalization and technological developments, changes in the last decade in electronic human resource management (e-HRM) are significant, due to advancements in such technologies as robotics/AI, analytics, machine learning. The goal of our work is therefore, to learn whether these new technological developments brought about new antecedents to the success of e-HRM. Our study was motivated by the question, what are the factors that determine the success of e-HRM from 2010 to 2020, also going to implement and enrich an already existing research covering a period of time from 1970 to 2009.

We therefore conducted a structured literature review and to do this, two research databases (Scopus and Web of Science) were used, from which a particularly large number of articles emerged. After a careful review and filtering of the articles, properly read and analyzed according to the objectives of the work, which took place in several stages, we reached 62 final articles. Within them, we identified the determining factors for the adoption of the e-HRM and the related consequences. The results show a substantial confirmation of what has already been analyzed about e-HRM factors in the previous 40 years (Bondarouk et al., 2017), despite some differences were then presented and discussed. What can be noticed is an increasing importance of involvement of the user, who plays a fundamental role in the e-HRM success, and therefore the use of the technology behind it.

Keywords: Human Resource Management, Electronic Human Resource Management (e-HRM), Technology, Adoption, Consequences, Structured Literature Review

Table of content

1. INTRODUCTION

Following globalization and recent developments in information and communication technology, the world has evolved by adapting, becoming increasingly dynamic and complex. In fact, the evolution of the digital era has caused significant changes on almost every aspect of our society, changing the way we live but above all how we do our work (Stone, Deadrick, Lukaszewski, & Johnson, 2015). In recent decades there has been an increasing use of modern information technologies (IT) in particular in the field of human resource management (HRM) (Ahmed & Ogalo, 2019) which has allowed, through the creation of software and hardware, to modify numerous processes. The traditional technologies that distinguished HRM in the early '70s (e.g. Personal computers) have been accompanied over time by the more modern ones (e.g. World Wide Web), up to the present day characterized by the presence of autonomous technological systems (e.g. Artificial Intelligence (AI), Machine learning, Robotic Process Automation (RPA) and so on). This integration of technological information and HRM is known as electronic HRM, or more commonly as e-HRM (Nivlouei, 2014). However, over the years the definitions that have been given of e-HRM are multiple and have evolved over time due to continuous changes.

Initially, in fact, we moved from a first definition of e-HRM as support for human resource management through web technology (Boundarouk & Ruel, 2009) to the conceptualization of e-HRM like "an umbrella term covering all possible integration mechanisms and contents of between HRM and Information Technologies, aiming at creating value within and across organizations for targeted employees and management" (Bondarouk & Ruel, 2009). In recent years, however, greater importance has been given to the use of the internet and web technologies that have further changed the meaning of e-HRM. While some authors have defined e-HRM as the application of computers and telecommunication devices based on web technology to HR practices for commercial purposes (Stone et al., 2015), or as a development of HRIS (Nivlouei, 2014), others have described the eHRM as a mechanism to access the functions and information of human resources management, in an increasingly easier and accessible way to all organizational stakeholders (Stone & Dulebohn, 2013).

Ultimately, the use of highly technological tools has become a relevant strategy for achieving a competitive advantage for organizations as they offer alternative ways to contribute to organizational effectiveness. Precisely for this purpose, many companies have decided to implement their strategies to keep up with the times and to face the economic challenges dictated by innovation and change (Nivlouei, 2014)

However, e-HRM studies never ended. The new types of knowledge, techniques and skills required to carry out these increasingly avant-garde activities are requiring researchers' attention regarding the evaluation of the consequences, to analyze both the positive aspects of these changes but also the negative and sometimes unwanted effects. The advantages recognized to this new mechanism of managing human resources are many but also contradictory from different points of view and an in-depth study of the same allows to (re)appropriately evaluate the organizational strategies to allow survival and competitiveness.

The functions of e-HRM, as also highlighted in the studies conducted by Marler and Fisher (2013), play a significant role as they are a valid means of improving efficiency, effectiveness and also the quality of management by changing the operational structure of human resource management, transforming its practices and functions. At the same time, technological development will require an organizational change which will reduce the human contribution on management practices. Among the main advantages recognized to e-HRM we have the reduction of organizational costs, an improvement in production activity, a reduction in management times and the creation of a better working environment (Nivlouei, 2014).

Nevertheless, the positive aspects of these developments will be contrasted by as many negative effects related to greater administration, work stress, reallocation of resources (Bondarouk, Parry, & Furtmueller, 2017), loss of jobs and creation of new ones, appearance of new organizational forms and so on (Bondarouk & Brewster, 2016).

To study the effects and consequences of these transformations, an analysis of what are the determining factors should be done first. The variables that can influence changes due to e-HRM are manifold, such as the application context. Based on the use that is made of new technologies and factors such as organizational dimensions, geographical position and sector of belonging, the consequences and effects of the changes can be various and all distinct from each other. In addition to contextual factors, human capital also plays a crucial role in that they represent the core of the e-HRM action (Bondarouk & Brewster, 2016).

Given the presence of these conflicting results and the growing number of articles that continues to be published on the management of human resources integrated with information technology and other disciplines, the purpose of this research is to go and provide an overview of the determining factors of success e-HRM. It should be noted that the term *success* of the e-HRM refers, within our work, to the two parts that make it up: the adoption of e-HRM and its consequences. The factors that determine the adoption of the e-HRM, in fact, are an essential prerequisite to be able to be further studied to analyze the consequences and reach the final result, that is the one that obtains a successful e-HRM. In this regard, we have developed the following research question:

What are the factors affecting the success of e-HRM as found in one decade (2010-2020) of e-HRM research literature?

The goal of this work perfectly marries previous work conducted by Bondarouk et al. (2017). The focus of their work aimed to analyze four decades of literature until 2009 and continuing in this direction we will focus on a review of the literature from 2010 to nowadays, focusing on the same themes to implement and integrate the results. The literature review will be conducted to find the determining factors of success as they belong to different disciplines such as information systems, human resource management and management.

Before going into the literature analysis, the following section describes the methodology used to search for articles and the methodology used to analyze them. Then in the first part of the work a systematic literature research will be carried out with a twofold objective. In addition to providing greater clarity on developments over the past few years of technology implementation in human resource management practices, this research will also provide an overview of the key factors influencing the consequences of e-HRM over the time span between 2010 and 2020. Subsequently we will implement the previously studied model, concerning the identification of the factors necessary for the achievement of a successful e-HRM.

2. STRUCTURED LITERATURE REVIEW METHODOLOGY

2.1. Literature search

To find detectable material to explain the role of technological innovation has had on HRM, a systematic bibliographic research was conducted. In this regard, we searched into two database, ISI Web of Science and Scopus, using keywords such as 'e-HRM', 'electronic HRM', 'digital HRM', 'virtual HRM', 'web (based) HRM', "HRM online", "HRIS", "HRIT" and "Computer-based human resource management" and in more detail those shown in the table below (*Table 1*). To refine the research, we have associated filters, for the first database we connected filters relating to the management discipline and the IT information system, for Scopus was applied "Business, management and accounting" discipline filter. Furthermore, we applied another exclusion decision that was the temporal one, so the articles taken into consideration cover a period from 2010 to recent publications, leading to a final result of thousands of articles.

We carried out an increasingly detailed analysis for the selection of the articles, as shown in the *Figure* 1 below. Initially, starting from all the 8158 articles that came out of the research databases, we selected only those of them that seemed to have a connection with the field of human resources management, scanning the title only, and eliminating all duplicates, leading to a result of 1207 articles. Subsequently, we performed a more in-depth analysis, revisiting the titles and related abstracts, further eliminating the articles that did not have the purpose of our work as their main objective. Therefore, we selected only the articles concerning HRM in general, excluding those with references to specific functional areas of HR such as e-recruitment or e-learning. In doing so, the selection led to a result of 355 articles covering a time laps from 2010 until now.

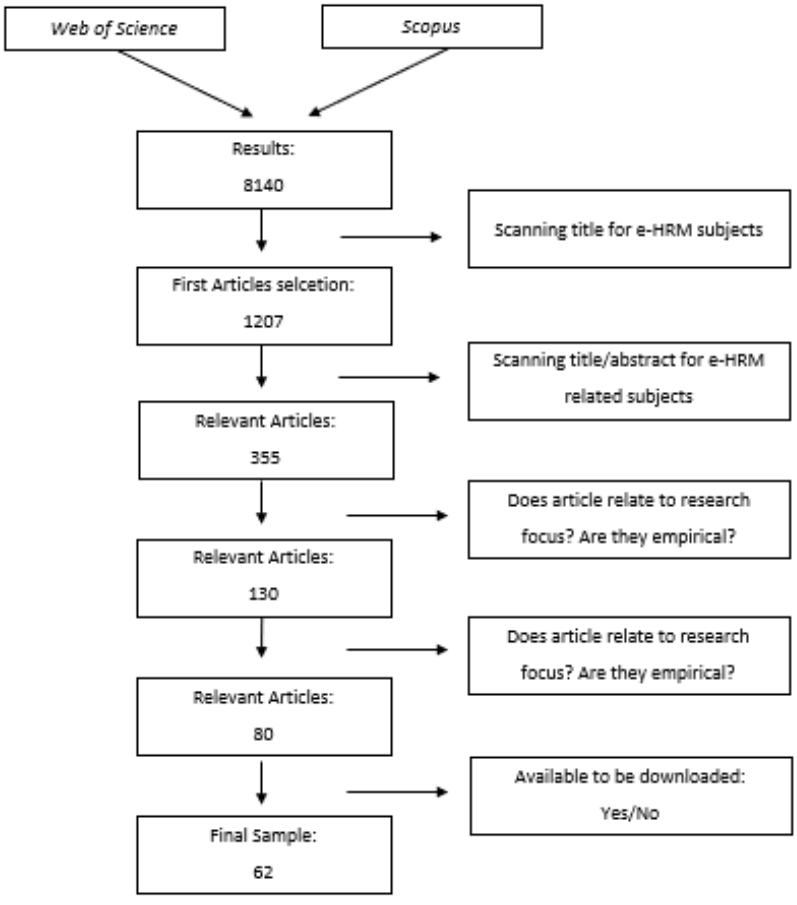
Before reaching the final result we analyzed he titles and abstracts several times. Together with the senior researcher, we analyzed the abstracts to determine whether there were empirical papers, and whether there was a clear connection with our research question. Since our review and our model are based on a literature review, we focused on factors that have been studied empirically as long as they are relevant to the purpose of our work. A preliminary sample of 130 articles resulted from this analysis. For a more detailed analysis, we made a subsequent analysis of the latter, going further to exclude the articles that were found to be conceptual or outside the search question, for a total of 80 articles.

Finally, articles that were not available for download were excluded that led us to the final result of 62 articles.

Table 1-Seacrh Query

	Number of results	
Search Query	*Web of Science*	*Scopus*
e-HRM	77	103
eHRM	9	10
e-HR	16	17
Electronic HRM	50	79
Electronic Human Resource Management	125	340
Online HRM	36	51
Online Human Resource Management	177	367
Web HRM	44	50
Web Human Resource Management	170	240
Web based HRM	31	28
Web based Human Resource Management	112	149
HRIS	39	75
Human Resource Information Systems	1146	1520
HRIT	0	1
Human Resource Information Technology	920	1318
Virtual HRM	24	23
Virtual Human Resource Management	114	168
Digital HRM	12	36
Digital Human Resource Management	96	264
Computer Based Human Resource Information Systems	47	74
Total:	***3245***	***4913***
	***Grand total:* 8158**	

Figure 1



2.2. Analysis of the Articles

To identify factors that determine the adoption of e-HRM and its consequences, we began our selective analysis of the articles. During the coding process, we carefully read the articles and identified the data that appeared to be relevant to the search. To simplify the work and have greater clarity, we have created an overview of the articles by using a specially created grid (*Appendix 1*), in the columns of which the following keys have been inserted:

- Full reference of the article
- Research Goal / Research Question
- Country where the empirical research was conducted
- Theories / concepts used in the research
- Methods used within the research
- Factors that determine success of e-HRM
- How do the authors define / operationalize or measure e-HRM success ?

In this way the articles were read and analyzed in search of this information, then placing them into the grid.

To better identify the success factors, we used the so-called TOP model (Bondarouk et al., 2017). This model considers *Technological (T), Organizational (O) and People (P)* factors as predictive factors for the successful adoption of new technological systems and an improvement in organizational performance. Thanks to this model which offers a clear and well-founded distinction, it allows us to frame the factors under study within one of the three categories mentioned. However, belonging to a specific class of factors is not exclusive, since the same factor can belong to different categories, and moreover these are not mutually exclusive (Bondarouk, 2014). We used this as a support for the two research flows that conduct the entire work: the first one that analyzes the factors that determine the adoption of e-HRM and the second one that analyzes the consequences of e-HRM (*Figure 2*).

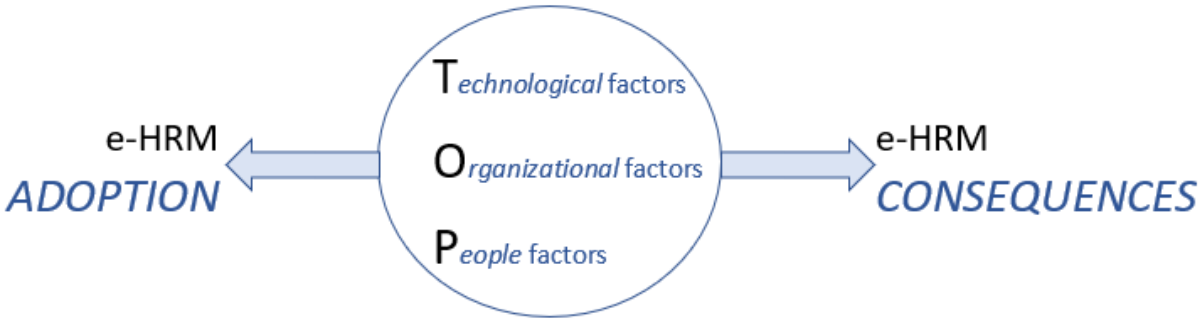


Figure 2- TOP Model (Technological, Organizational, and People Model) and research streams

Therefore, the results were reread and grids were created, which will then be presented in the findings, within which the factors that determine the adoption of the e-HRM and the respective consequences deriving from it are inserted. Once we created these grids, we went in search of data that supported our results in order to support the search with information that has been empirically proven.

3. FINDINGS

3.1. Factors that determine the adoption and consequences of e-HRM in 2010-2020

The electronic human resources management (e-HRM) is a field in continuous evolution stimulated by the dynamism of technological changes that favor its development and implementation (Barrett & Oborn, 2013). Over the years, literature has also grown hand in hand. In fact, an ever increasing number of articles deals with different aspects and facets of this new way of managing human resources.

In this sense, we proceed with the analysis of the factors that determine, influence and favor the adoption of e-HRM. However, these factors, as well as the consequences, do not refer to a single target of users but rather are aimed at the entire organization. We therefore refer to factors that are adopted both at the managerial level but also at the level of individual employees, depending on the situation in which we find ourselves.

Below is a brief mapping (Table 2) of those that have been identified as essential factors for the adoption of e-HRM, distinguishing them in organizational, personal and technological factors. So let's proceed with the analysis.

e-HRM adoption (2010-2020)		
Organizational Factors	***People Factors***	***Technological Factors***
Size	*Users' opportunities*	*Systems' quality*
Age	*Age*	*Appropriation*
Strategic context	*Education*	*Systems' age*
Culture	*Social influence*	
Economic conditions	*User's personality*	
Geographical area	*Language skills*	
National culture	*Perception*	
Technological penetration	*Acceptance*	
Per capita GDP	*Perceived usefulness*	
Levels of communication	*Technological skills*	
Structure	*Experiences*	
Structure of HRM		
Social influence		

Table 2- Factor affecting e-HRM adoption in 2010-2020

3.1.1.Organizational Factors

One of the aspects that has received the greatest interest in the studies is that concerning the organizational factors within which it is possible to have an optimal development of the new human resource management system.

In particular, there are several studies in which it emerged that the adoption of e-HRM mainly depends on the *size of the organization* within which you want to develop it. Several authors have analyzed the relationship between organizational dimensions and the adoption of e-HRM. Strohmeier & Kabst (2014), in a study based on a German sample, divided the users into "non-users", "operational user" and "power user" precisely to demonstrate the degree of use of the e-HRM. The research showed that non-users is associated with organizations with ≤ 66.5 employees, followed by operational users with > 66.5 and ≤ 864 employees and finally power users with > 864 employees. This demonstrates that in large organizations, the chances of this new method of managing human resources is higher than in small organizations (Galanaki et al., 2019; Parry, 2011; Strohmeier & Kabst, 2014; Lazazzara & Galanaki, 2018; Iqbal et al., 2019). One possible explanation to this aspect, lies in the fact that only big organizations are able to cope with the initial investment required for the adoption of highly technological systems of HRM and also in these types of organizations the resulting costs saving can be greater thanks to the presence of economies of scale that allows them to benefit from the results (Parry, 2011; Iqbal et al., 2019).

In the search within Pakistan banks of Iqbal et al. (2019), another important organizational factor is presented in determining the adoption of the e-HRM. This one concerning the *age of the organization* itself. In most cases in fact, younger organizations are more in favor of adopting electronic human resource management systems than older ones. This is due to the fact that older firms have older IT systems which require very high modernization costs which, in turn, take too long to depreciate (Panayotopoulou et al., 2010; Iqbal et al., 2019). The companies that are born in modern times, on the other hand, already see themselves into a highly technological world and therefore to move with the times (Panayotopoulou et al., 2010).

The *strategic context* in which organizations operate is also a relevant factor. The presence of commercial strategies, coping with the growing competition ensures that organizations are committed to adopting cutting-edge systems to meet business needs in a highly globalized market, also ensuring collaboration beyond organizational and geographic boundaries (Panayotopoulou et al., 2010; Lazazzara & Galanaki, 2018). Berber et al. (2018), stated in his study that the presence of business strategies in organizations will be determined in the use of e-HRM ($x^2 = 13.541$; $p = 0.000$).

However, other factors related to the organization must also be considered, such as *culture*, *economic conditions, national variables* that are decisive in assessing the adoption of e-HRM or not. From the study conducted by Panayotopoulou et al. (2010), on companies in European cities, emerged that depending on the *geographical area* in which they operate, organizations adopt different behaviors towards management systems, as well as based on the industrial sector in which they are located but also in relation to *national culture* in force in certain organizations. In fact, the results show that the companies of a specific geographical cluster, in the case under consideration North, Central and Southeastern European countries, share the same characteristics in terms of *technological penetration*, *per capita GDP*, *levels of communication* and *culture* etc. All these affinities allow to influence the formation and the adoption of human resource management practices.

The *organizational structure* is another element to evaluate the possible adoption of the e-HRM. Bondarouk et al. (2016), places us in an emerging international context such as that of Tunisia, in which it highlights the fact that the decision-making process in the branches of multinationals is strongly influenced by that of the head office, which therefore does not allow for full autonomy in this regard. Study also

conducted by Heikkilä & Smale (2011), with data coming from the foreign human resources of two multinationals, one European and Finnish one, in which it is confirmed that the degree of social influence dictated by the central offices determines the behavior of use also of the subsidiaries (Heikkilä, & Smale, 2011).

The requirement concerns the quality of the human resources service that underlies the organization. In order to adopt an electronic, therefore highly technological, human resources system, in addition to the suitable tools, you must also have a solid and *well-formed structure of HRM* at the base to be able to undertake this new way of doing management. As demonstrated by Bondarouk et al. (2015) investigation within a Belgian ministry, so far as there was not a human resources management system strong enough to start, the introduction of technological systems to it will lead to the failure of the entire system. The analysis revealed values between 44.7 and 51.3% which deny frequency-linked mediation, just as proof of the strength of the HRM that underlies it, or an adoption that does not depend on the use made of it.

3.1.2.People Factors

The advent of the digital world presents a great challenge not only for employers, but also for employees and authorities. These challenges must be modeled on the basis of the economic and strategic needs of the organization but must also take into account *everyone's opportunities* (Mazurchenko, & Maršíková, 2019). Precisely for this reason, beyond the organizational aspects, fundamental for the introduction of e-HRM, we must not underestimate the importance that the individual has in undertaking this new way of managing human resources.

The first factor, which undoubtedly receives particular attention regarding the adoption of e-HRM, understood as the use that is made of it, concerns the *age of employees*. The presence of young employees, in fact, facilitates the adoption of new systems as they are practical in terms of technology compared to older employees, who have grown up in completely different contexts and with lower, if not completely absent, technological levels. Precisely this age difference in employees leads to the onset of contrasting attitudes towards technology and therefore e-HRM. The older generations prefer the manual way of doing things, compared to the younger ones, considering the new system elaborate and difficult to use (Ramayah & Kurnia, 2012; Galanak et al., 2019; Školudová, 2017).

In addition, another important factor for the adoption of e-HRM concerns the *skills* and *education* of individuals. From the studies conducted by Galanaki et al. (2019) and Lazazzara & Galanaki (2018), it was found that the adoption and consequent success of the e-HRM is positively linked to the level of education of the employees (Lazazzara & Galanaki, 2018). When employees are better educated, the probability of failure is less and employers are more likely to make investments of this type, confident of their success. Confirming what has been said, from the interviews conducted by Mahfod & Khalifa (2018), on a sample of 87 employees, it emerged that the lack of skills necessary for the use of these technological systems has a negative impact on its use and therefore on its effectiveness.

Always in the study of Mahfod & Khalifa (2018) it was discovered that a greater use of e-HRM systems is linked to *social influence*, or to the influence that people have on the thoughts of others. The Cronbach's Alpha value is used to test the reliability of the items measuring each variable, in the case in question has produced an average result of 3.03. This indicates that the company supports the use of e-HRM, thus promoting its diffusion. Results also supported by Rahman et al. (2016), which highlights how in the banking and financial sector of Bangladesh, social influence together with behavioral intention are decisive in the adoption of HRIS.

Without a doubt, this factor is also closely related to the national culture in force within the organizational context, represented by the set of beliefs and values typical of a given work environment (Panayotopoulou et al., 2010).

Other typical factors concern the *user's personality*. Erdoğmuş & Esen (2011) highlight within their study, how the traits of an individual's personality can be fundamental for acceptance, use and therefore the success of technology. Mahfod & Khalifa (2018) highlight how an optimal level of attitude turns out to be positive towards e-HRM (Cronbach's alpha mean value of 4.01). With regard to what has been said then, organizations must adapt their growth and innovation strategies also according to the needs and characteristics of the individual employees, in order to be able to earn profitability (Mahfod & Khalifa, 2018).

Again with reference to the personal characteristics of individual users, *language skills* also deserve proper attention. According to Heikkilä & Smale (2011), it is precisely the latter that determines the ability of users to understand the instructions and thus to positively influence their actual use.

Acceptance and perceived usefulness represent two other essential elements for the success of the e-HRM (Ramayah & Kurnia, 2012). Often at the basis of multiple studies on the subject, these two factors highlight the characteristics and predispositions of individual users which in turn allow for a clear overview, useful as a starting point for possible strategies and adoptions. Factors such as the complexity and compatibility of the new systems are connected with the use made by users. While *compatibility* ($\beta = 0.264$, $p < 0.01$), it is positively related to extent of use of HRIS, as it is compatible with the lifestyle conducted by the user and therefore a high use of the same. The *complexity* ($\beta = 0.203$, $p < 0.01$), as it has been the subject of several studies based on the TAM model, on the contrary is a factor that determines a scarce use of technology as it is considered difficult and consequently not properly exploited . In fact, the ease of HRM, as described in Ruël & Van der Kaap (2012) in terms of *facilitation conditions* ($\beta = 0.20$; $p < 0.01$), *data quality* ($\beta = 0.37$; $p < 0.01$), *technological skills* ($\beta = 0.11$; $p < 0.05$) and *policy consistency* ($\beta = 0.24$; $p < 0.01$) , are closely related to the creation of HRM value ($\beta = 0.63$; $p < 0.01$).

3.1.3. Technological Factors

Over the years, technological evolution has been fundamental to determine the impact of the new way of managing human resources on the entire organizational system. In fact, *good technological systems* represent the basis for ensuring an excellent e-HRM success. The advantages of the new human resource management systems will depend not only on the technology made available but, above all, as already mentioned above, also on the way in which this technology is perceived, accepted and used by users as the latter represent the degree user satisfaction in relation to the use of the system (Betchoo, 2016; Bondarouk et al., 2015; Wickramasinghe, 2010).

However, the importance of technological systems and the contribution of the industrial revolution are recognized by a large number of organizations. Having a good technological knowledge, therefore having a good starting point, is undoubtedly a starting point please the evolution of highly technological HRM. Ramayah & Kurnia (2012) have demonstrated, analyzing the responses of 88 employees experienced in the field of human resources within organizations based in Malaysia, that *IT support* is a determining factor in the use of strategic human resource management systems ($\beta = 0.393$, $p < 0.01$) as well as the *reactivity* of information ($\beta = 0.601$, $p < 0.01$), the *external professional connection* ($\beta = 0.341$, $p < 0.01$) and the *transformation activity* ($\beta = 0.339$, $p < 0.01$).

From the study carried out in Ruël & Van der Kaap (2012), within companies based in the Netherlands, the concept of *appropriation* that goes beyond the concept of use is particularly interesting. In fact, the

concept of appropriation has the objective of measuring the use of new IT systems taking into account the real objectives and intentions of the system. From the analysis carried out on the basis of 151 valid responses received, it emerged that the appropriation, as well as the frequency of use, are positively correlated to the creation of HRM value ($\beta = 0.43$; $p < 0.01$; $n = 151$) ($\beta = 0.20$; $p < 0.01$; $n = 151$) which are the main objectives of the introduction of innovations within the organizational context. This means that when e-HRM applications are mostly used, the creation of value is greater, especially in the case of appropriation.

As mentioned in the analysis of organizational factors, the adoption of e-HRM also depends on the age of the organization, which in turn is linked to the *age of the IT system* adopted by the same. Indeed, Wickramasinghe (2010) shows that the age of the web-based HRM system is directly linked to the satisfaction of the users who use it and therefore to the use they make of it ($t = 5.42$, $p < 0.001$). The respondents of the study showed higher satisfaction levels when the systems were less than 5 years old, and therefore appeared to be quite modern.

3.2. Consequences of e-HRM adoption

An implementation of the management system does not facilitate and improve only the human resources department, but contributes to the improvement of both the staff and the services offered by the organization as a whole (Moussa & Arbi, 2020).

As well as for the factors that influence the adoption of e-HRM, the consequences due to its adoption can also be divided according to the respective factors. We would therefore have organizational, personal and technological consequences (*Table 3*).

e-HRM consequences (2010-2020)		
Organizational Consequences	***People Consequences***	***Technological Consequences***
Cost saving	*Appropriation*	*Speeding up*
Relocation of users	*Frequency of use*	*Facilitating and improving*
Reduction of routine work	*Productivity*	*Effectiveness*
Time saving	*Inter-personal relationships*	*Service quality*
Efficiency	*Improvement of knowledge*	*Dissatisfaction*
Efficacy	*Training and updating*	*New products and Services*
Standardization of work	*Stress, fear and anxiety*	
Improvement of organizational systems		
Improvement of organizational performance		
Accuracy		
Speed		
High quality of data		

Table 3-Consequences of e-HRM adoption in 2010-2020

3.2.1. "Organizational" Consequences

When one thinks of the consequences of the introduction of new systems of human resource management, one thinks first of all of the resulting *reduction in costs* (Barrett & Oborn, 2013; Lazazzara & Galanaki, 2018; Berber et al., 2018). However, it is not necessary to think of a reduction in costs in terms of staff reduction, as shown in previous studies, but rather, it is possible to verify cost reductions in other sectors. In fact, compared to the initial expenditure necessary for the introduction of new IT systems, the reduction of costs that follows, within an organization, can be seen from different points of view. As shown in the research from Parry (2011), on the basis of human resources policies and practices of 12 countries, the reduction of costs, in this case, is identified in the lesser use of paper material, suitably replaced by IT material. If on the one hand this reduction is viewed positively since it does not lead to job cuts, on the other it can be seen as a failure of the new human resource management system since it does not guarantee normal system operation without the necessary presence of the human being. At the same time, however, the failure to lay off employees can be understood as a fair *relocation of human resources* within organizations, going to fill new job positions.

This reallocation of personnel will not lead to a significant reduction in costs, but will undoubtedly lead to an increase in the overall value of the e-HRM which will contribute to the achievement of the competitive advantage of the organization, obtained through a more efficient use of the resources available and optimal management of services (Parry, 2011). The use of technological information therefore entails important work changes that also lead to the reduction of routine work (Ramayah & Kurnia, 2012; Fenech et al., 2019).

The reduction of costs due to the automation of the activities, administrative and not only, is also strictly connected to the *reduction of the execution times* of the activities and bureaucratic practices (Moussa & Arbi, 2020; Bondarouk & Ruël, 2013).

The e-HRM results are mainly linked to concepts of *efficiency, efficacy, standardization of work* and *improvement of organizational systems* as a whole (Parry & Tyson, 2011; Nagendra & Deshpande, 2014; De Zubielqui et al., 2019; Fenech et al., 2019; Obeidat, 2016). De Zubielqui et al. (2019), from the interviews collected regarding the information of business innovation activities in Tasmania, supported what previously said, namely that innovative HR practices have a positive influence on *organizational performance* ($\gamma 5b = 0.108$, $p < 0.003$).

But also the data collected in Serbia by Berber et al. (2018), show what are the main advantages of the introduction of e-HRM. In particular, in addition to a reduction in costs, there is also talk of *accuracy, speed and quality of data* (Davarpanah & Mohamed, 2013). From the analysis of these factors carried out by Davarpanah & Mohamed (2013) on the basis of 103 interviews conducted between targets of academic and non-academic people, it generated mean scores of 3.65, 3.40 and 3.53 respectively, all positive values confirming the quality and functionality of the system. In addition, Barrett & Oborn (2013) and Fenech et al. (2019), showed how, thanks to the use of IT systems, greater access to human resources data is also guaranteed, ensuring the supply of constantly updated data on employees and their performance.

3.2.2. "People" Consequences

The results of the study Iqbal et al. (2019) shows the positive impact that e-HRM has on *employee productivity*. In particular, the research was conducted through 17 private banks in Pakistan. After a distinction between operational, relational and transformational e-HRM, data analysis revealed that all three

types of e-HRM had a positive impact on employee productivity, especially operational productivity (β = 0.1541, t = 2.4378) and relational (β = 0.3164; t = 5.4081), while the transformational one is supported by lower but still positive values (β = 0.103; t = 3.479). The positive link between these two factors (e-HRM and employee productivity) therefore improves the quality of human resource processes, and is also a primary source for evaluating the introduction of new technology-based management systems.

The growing organizational technology also translates into a high demand for digital skills in many jobs. In particular, Mazurchenko & Maršíková, (2019) explicit in his study, such as the positions to which increasing digital skills will be required, will be those of those responsible for human resources, precisely in order to deal with highly technological systems. The knowledge of certain technological skills will become over the years an essential requirement for users' candidacy.

However, in order to allow optimal use of all technological tools, organizations will have to work hard to provide users with the necessary tools, as well as fundamental *knowledge*, through *training and updating* programs (Udekwe & Andre, 2017; Abdeldayem & Al dulaimi, 2020).

If on the one hand the use of IT systems is seen as an obstacle to *inter-personal relationships*, on the other the adoption of HRIS allows an immediate exchange of knowledge that contributes to the overall development of the company (Moussa & Arbi, 2020).

In adopting technological tools, the differences between individuals must always be kept in mind. When these differences are underestimated, feelings of *stress, fear and anxiety* come into play which interfere with the user's full involvement with the organization (Blom et al., 2019).

3.2.3. "Technological" Consequences

Analyzing Five HR managers of large institutions in the UAE, Fenech et al. (2019) have found that digital transformation is mainly used in *speeding up*, *facilitating and improving* human resource management practices rather than for data analysis and therefore for analyzing the organizational strategies.

From the research of Obeidat (2016), within organizations in Jordan, it emerged that the use of e-HRM is positively related to the *effectiveness* of human resource management, in particular the positive effects are had in terms of *service quality* (β=0.563, p¼0.000) and availability (β=0.539, p¼0.000)

But the aspects of the introduction of technological systems are not always entirely positive. As emerged from the study of Shahreki et al. (2019), on the basis of 167 respondents, the negative, and therefore unwanted, effect that can lead to the introduction of highly technological systems should not be underestimated. In fact, the introduction of HRIS systems can be seen as a threat to human resources employees, as they see their work change. This can lead to a level of user *dissatisfaction* (β = -0.15; p <0.05) which can turn into leaving the workplace (β = -0.17; p <0.05).

Despite the numerous aspects and facets that must be taken into account in the evaluation of the e-HRM system, there are numerous organizational sectors that have benefited from the adoption of the ICT. Rahman et al. (2016) conducted a research study, within banks, public and private, and financial organizations, discovering that the adoption of ICT brings significant benefits. These include the ability to *offer new products and services* to the whole world through the use of web channels in order to facilitate their faster dissemination, remain efficient and innovative.

4. DISCUSSION

In this section of work we will analyze the results emerged from our study through a direct comparison with the results of previous research conducted by Bondarouk et al. (2017) to analyze, over time, any differences and/or equality in terms of factors and consequences of the e-HRM. Moreover our TOP factors and consequences will also be inserted at the end of the discussion, in a graph, for a general overview (*Fig.3*).

4.1. Reflection on Historical developments

The first element that stands out from the research is that from the review conducted, an ever-increasing number of articles on the subject emerged compared to previous decades (62 articles for the decade 2010/2020 in comparison to 69 articles for the period 1970/2009), proving that the use of the technology in the management of human resources is constantly evolving and consequently the curiosity of any changes in terms of factors. However, the substantial difference, in terms of articles, factors and consequences, is not particularly noticeable in relation with the last decade (2000/2009) as much as with the previous ones as already emerged in past research.

Research on the discipline of Human Resource Management has allowed us to identify the TOP factors (Technological, Organizational and People) that influence the adoption and consequences of e-HRM. Thanks to the presence of these factors, we can compare with the respective ones of the past decades.

4.2. Factors affecting e-HRM adoption

By starting the comparison precisely from the technological factors that determine the adoption of e-HRM, it is possible to see how these have grown over time and become decisive. The technological evolution has in fact created increasing interest in the knowledge of technological factors that would allow the adoption of equally technological systems in the field of human resources.

Literature has gone from a simple interest in creating software suitable for specific organizational needs and its possible customization (Magnus & Grossman, 1985), to the study of specific factors of the new systems. In the decade 1990/1999, the quality of the IT systems in terms of ease of use, usefulness and integrity of the data provided was of greater interest. Interesting is the study of factors concerning the dissemination of information on existing applications (Bro Derick & Boudreau, 1992) since they made it possible to clarify the characteristics of the new systems both for the organization and for users.

In the following period, the one that covers the years 2000/2009, the clear and fast structure, the advantage that this new way of managing organizations gave, were considered fundamental factors for the adoption of e-HRM. But IT infrastructure was also fundamental, since organizations that did not have a good infrastructure for implementing e-HRM would then find themselves in serious difficulty. This meant that the compatibility of e-HRM with existing systems was also an additional important factor for implementation. The importance of technological factors has grown hand in hand with technological evolution as a whole and more and more have become fundamental for evaluating the implementation of human resource management systems. To the factors previously analyzed, those factors that in recent years have proven to be particularly important can be added as they highlight the effective use of the systems in relation to the

real business objectives. Among these factors we find the reactivity of the systems, the compatibility, the age of the system in question and not least the concept of appropriation behind it (Ruël & Van der Kaap, 2012; Wickramasinghe, 2010; Ramayah & Kurnia, 2012) . As is easily understood, these factors are all positively correlated to the degree of use that is made by users since by increasing their use due to the timely response of the systems, the value of the e-HRM as a whole is also increased.

What we can say ultimately is that the study of the technological factors that influence the adoption of e-HRM has evolved, not setting aside those of previous years, but rather they have simply been expanded, through more in-depth studies and have been added of new ones.

As far as organizational factors are concerned, research in this regard has evolved considerably, leading to a substantial growth in these factors. The first organizational factors that emerged from empirical research, fundamental for the adoption of e-HRM, mainly concerned the organizational dimension and the budgets available to companies (Mayer, 1971). While this happened in the first decade of analysis (1970/1989), in the subsequent period (1990/1999) technological evolution led to analyze other essential factors for the adoption of the new method of human resource management. In particular, in addition to the organizational dimension, the age of the HRIS department also assumed importance (Haines and Petit, 1997). In fact, the spread of technology has meant that only the largest and recently founded organizations are able to support the funding necessary for the implementation of the HRM. In the coming decade (2000/2009), the sector in which the organization operates took on an important role in the adoption of systems, in particular it was found that the banking sector was positively correlated to the adoption of highly technological systems (Strohmeier & Kabst, 2009). However, the predisposition of an organization to the adoption or not of these systems is particularly influenced by the general skills in technology as well as the predisposition of employees to this evolution.

The factors listed above are all present in the analysis made in the decade 2010/2020. The organizational structure as a whole in fact has received increasing interest from researchers in order to identify essential factors in the adoption of e-HRM. As in previous periods, also in the latter the size and the organizational age have a central position in the evaluation of the introduction of highly technological systems (Strohmeier & Kabst 2014; Iqbal et al., 2019). To these are added organizational factors such as culture and national variables, but even more the geographical area in which the organization is located. The geographical area in which we find ourselves positively influences the adoption of the information system at the same pace as the industrial sector and the culture in force (Panayotopoulou et al., 2010). Therefore, the strategic context in which organizations operate therefore becomes a determining factor in the choice of adopting technological systems to face competition. However, the growing globalization has led many organizations to locate their branches far from the headquarters for economic and non-economic reasons. This has translated into a strong influence of the choices of the subsidiary in terms of e-HRM since their choices were dictated by those of the central offices which therefore did not allow them full decision-making autonomy (Heikkilä, & Smale, 2011).

With regard to people factors, in the previous study there was a significant increase in these factors compared to the 1990s. This is due to the fact that over time, in addition to the importance of technological and organizational factors, a predominant role has been played by the users. Indeed, the user is the key role between wanting to implement new human resource management systems and the effective implementation. The perception of new systems and their use by individuals is essential in the study of adoption factors. Precisely for this reason in recent years an increasing importance has been given to them, with regard to their age, their training, the skills they possess and their behavior in comparison with the new highly technological systems. In the analysis of these factors, we do not notice significant differences

between the decade 2000/2009 and that of our study 2010/2020, probably because the importance of the employee himself has grown considerably in the new millennium and the studies that have been carried out in terms of factors have evolved mainly in the decade preceding ours.

However, they are increasingly successful and the literature on the matter is still of particular importance precisely to underline the importance of the individual in relation to technological evolution and organizational developments.

4.3. Factors affecting e-HRM consequences

Continuing the analysis with the comparison of the consequences between the various periods analyzed, we can easily see how the analysis of these has increased significantly in more recent times. This can be explained by the fact that initially there was a tendency to focus on factors that determined adoption as a highly technological system was completely new in the field. Over the years, however, the consequences of this implementation have also been studied, especially in the organizational sector and in relation to personnel.

The consequences dating back to the first analysis period (1970/1989) do not present a large amount of data as there was no empirical basis for demonstrating the changes that the technological implementation had made to the human resource management systems. However, hints of positive consequences have appeared in some studies in terms of greater efficiency and effectiveness that have served as a launching pad for future studies. Indeed, in the following decade innumerable consequences were analyzed, especially at an operational level, in terms of greater precision and accuracy of data, reduced time and costs, greater IT capabilities and more consistent communications. Consequences that have continued to emerge during the following studies, in which again the amount of information about it has grown considerably and has allowed ever more in-depth studies.

Over the period 2000/2009 the operational consequences remained unchanged, some studies on cost savings were deepened and the advantages in terms of effectiveness and efficiency were reconfirmed. However, the relational and transformational consequences have intensified. Improvements, in terms of HR services both internally and externally, have been recorded and even more in terms of strategic planning. The use of e-HRM allows organizations to carry out long-term strategies confirming the fact of the importance that this highly technological method can bring benefits to the organizational business.

In our work the consequences that emerged are all evidence of the previous ones. In fact, there are no notable differences. The main goal of e-HRM has been recognized as speeding up and facilitating HR practices for general improvement (Fenech et al., 2019; Obeidat, 2016). The growing literature has tried to deepen the studies through empirical evidence that aimed in more detail. In particular, the study has been deepened in terms of consequences on costs, highlighting the fact that this reduction in costs does not necessarily translate into a reduction in staff, but rather, thanks to the introduction of e-HRM, it can take place under different points of view, one of which could be the use of less paper material (Parry, 2011). The automation of human resource practices has brought significant advantages since, in addition to a reduction in material, it also leads to a reduction in execution times which also translates into a cost advantage as the work done is less and the employees can engage in other activities within the organization (Moussa & Arbi, 2020; Bondarouk & Ruël, 2013).

An important factor that emerged between the consequences of the 2010/2020 decade was the positive correlation between e-HRM and the impact on employee productivity (Iqbal et al., 2019). This factor is an important success which, through careful analysis, is essential for evaluating the introduction of e-HRM.

What has not been analyzed in the last period concerns the protection of personal data. While in other decades it was found as a fundamental factor for the adoption of e-HRM highlighting the pros and cons, in recent years there has been a tendency to underestimate this aspect. However data privacy is a fundamental element that many times is lacking due to the presence and use of highly technological systems which, through automation and internet channels, allow the retrieval of a large amount of data and the subsequent exchange , easy and timely, of information without the user's consent.

But there is still the presence of negative aspects. Following the introduction of technological systems, e-HRM also had negative effects on employees, who saw the importance of their workforce decrease in the organization, due to a partial replacement with IT systems. This has therefore translated into a level of dissatisfaction which can manifest emotions such as anxiety, stress and fear (Blom et al., 2019) that can even translate into a level of dissatisfaction that can degenerate in the abandonment of the job, to return to perform the old tasks.

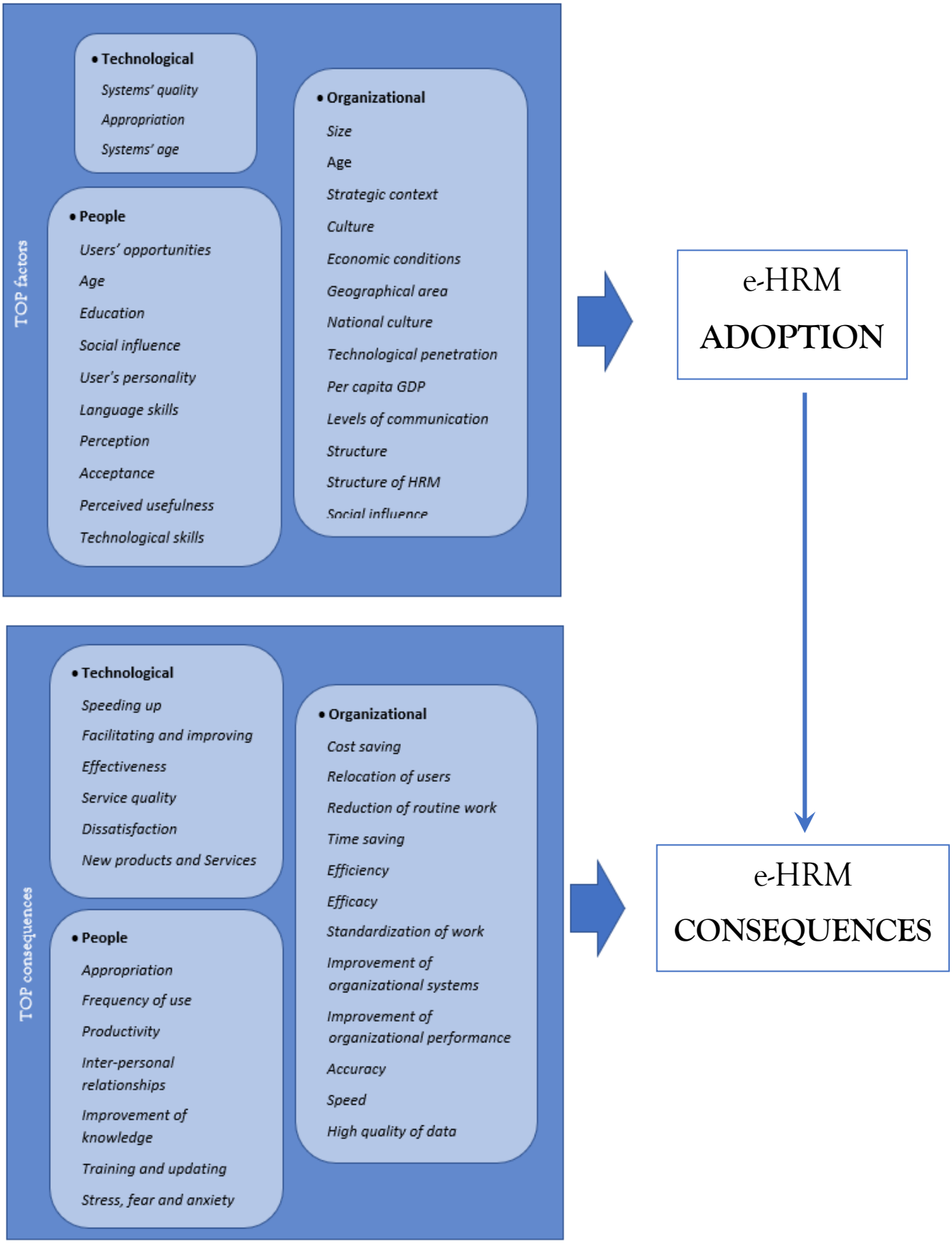


Figure 3-TOP factors and consequences of e-HRM (2010-2020)

4.4. Extra reflection

Looking at the comparison previously made, it is possible to notice how a clear development of literature has occurred in recent years. From our literature research we have been able to see how articles on e-HRM and similar subjects have increased substantially. A total of over 8 thousand articles emerged from the results of the two search engines used for a period of only 10 years (2010/2020), unlike the 6648 that emerged from the research by Bondarouk et al. (2017) that spanned a 40-year time span (1970/2009). This is just an example which serves as a starting point to make people understand the evolution and growing interest in electronic human resource management and everything related to it. The growth in e-HRM has involved many countries thanks to globalization and technological development that has affected much of the world. In fact, the new millennium is synonymous with technology, cutting-edge IT systems, with automation, labor revolution, 4.0 industries, the reduction of routine work and the reallocation of users that has led to the transformation of various organizational aspects. The studies have affected a large number of countries, European and otherwise, going to touch different realities from one another, going into very distant cultural and organizational contexts which, in this way, have allowed us to have a general overview of e-HRM.

However in terms of e-HRM, the studies and analyzes carried out in the last decade have not brought results substantially different from those of the previous period, although some factors have obtained greater relevance and attention over time than others. This can be explained by the fact that in the e-HRM there has been a substantial development in the transition from the 90s to the new millennium, years in which the growth on the factors, by adoption and consequences, of the e-HRM has been of a certain thickness. The results of the years 2000/2009 have provided a great baggage for literature, as well as for practice, and although the years we studied (2010/2020) have not been so productive of novelties, they have nevertheless been useful for a continuous study e-HRM, to highlight how technological evolution is acting in the area of human resources and how in turn organizations are adapting to these continuous developments in order to align business interests with those of the economic world.

Moreover, on the review carried out on a total of 62 selected articles, it is possible how the methods used for the research were mainly based on surveys, questionnaires and interviews properly structured to obtain the information suitable for the research goal. While there are clearly fewer articles that were based on statistical data and this was also a limitation for our study.

As far as the theories are concerned, the one that has been used the most is undoubtedly the Technology Acceptance Model (TAM), followed by the theory of acceptance and use of technology (UTAUT), the Resource Based View (RBV), confirming the importance of users in relation to technology, and finally the Diffusion of Innovation (DOI) perspective. However, there are not a few studies based on the formulation of hypotheses that have to be confirmed or rejected.

Furthermore, having reached this point of our work, in light of the results reported, it is advisable to clarify and reflect, in order not to create confusion, on the terms e-HRM and Digitalization, that are often used as synonyms. The latter, also defined as digital transformation, refers to a process of optimization of internal practices in order to obtain a positive effect "on the future opportunities and trends of the organization" (Mosca, 2020) based on the use of technologies to improve and transform business operations and beyond. The term e-HRM instead refers to a new interpretation of the way human resources management is done, an implementation of traditional HRM combined with the use of technological artifacts (Ruël et al., 2004). So we can understand digitalization as a component of e-HRM, a tool through which it is possible to transform human resource management up to electronic (e-HRM). Having said that, in fact, no articles have been found in common with the work done by Maria Mosca (2020) on the theme of

digitalization, proof of the fact that the two topics differ considerably and furthermore digitalization is a topic placed more recently than the e-HRM.

4.5. Limitations

In light of the above, it can be seen that this study is not without limitations.

Firstly, in fact, we were limited by the research method used, the use of interviews and/or questionnaires in 70% of the articles did not allow us to obtain statistical data capable of supporting certain aspects, sometimes leaving arguments in the shadows that have not been carefully analyzed but deserve further study.

Secondly, another limitation always concerns the choice of our methodology. In fact, the exclusion of the study of technology within the functional areas of human resource management does not allow us to have a complete vision of how certain functional areas (e.g. e-recruitment, e-learning, e-development) can change following the introduction of the technology, the benefits that can derive from it or any difficulties. Future research could be addressed in this sense, analyze factors and consequences in relation to individual functional areas to further improve research and make a comparison with these studies.

Thirdly, despite the growing literature on the subject on e-HRM and the technological development of today, it is appropriate to reflect on how the selected articles of our research do not deal with the topic of autonomous technology (i.e. Artificial Intelligence, Robotic, machine learning). It might seem completely strange since we talked, precisely in the introduction of this work, about technological change over time and how automation has changed the way human resources are managed. However, this can be explained by the fact that our research, being the continuation of a previous work carried out, was based on the insertion in the search engines of traditional terms regarding the management of electronic human resources, thus excluding all those articles which dealt with HRM automation, since these form a distinct subcategory in the field of HRM itself which has developed more recently and for which information was not available in the first years of the study carried out. This represents a further limitation for our study but at the same time the basis for deepening the studies by changing the keywords (i.e. robotic HR, HR automation, Artificial Intelligence in HRM) and thus focusing on the automation of the e-HRM.

Finally, the last limitation in our study is the model used to conduct the research. Basing our framework on the TOP model, we went to analyze all the technological, organizational and people factors, confirming the model itself and the importance of these factors. Nevertheless it would be advisable to analyze further factors to enrich and make the research more complete, such as institutional, environmental, economic and all other types of factors that can in some way influence the adoption and consequences of HRM.

5. CONCLUSION

The purpose of this work was to provide a clear, detailed and data-supported view, which allows you to have a general overview of what are the main factors that determine the adoption of e-HRM in the period of 2010-2020, and the consequences that derive, continuing the previous research.

The research question that led the entire work was the following:

"What are the factors affecting the success of e-HRM as found in one decade (2010-2020) of e-HRM research literature?"

We used the previous work of Bondarouk, Parry & Furtmueller (2017) as a guide model to obtain a similar analysis that would allow for a simpler and more linear comparison. As emerged from the results, consistently with Bondarouk et al. 2017, two research flows were used also in our case. One of them aims to analyze the factors that determine the adoption of the e-HRM while the other focuses on the consequences of this adoption.

What emerged from our study is the extract from a long literature research that has evolved over time. It is important to note that empirical studies have been carried out in much of the world, synonymous with globalization and technological development worldwide. European and non-European case studies were analyzed, from developed and less developed countries, from different sectors, with divergent realities and cultures, which allowed us to get a 360-degree view of what may be the effects of the new way of managing human resources, when we move into realities other than ours. A series of factors and consequences act as a starting point for an optimal analysis of the introduction of e-HRM.

In the analysis, these factors/consequences were grouped into three macro classes: Technological, Organizational and Personal to have a picture, as well as being in agreement with the previous study, more linear, clear and easily understandable. Among these sets, the greatest importance found at the end of the analysis is given to the organizational and personal factors/consequences. The importance of organizational objectives plays an important role, a goal to be achieved, a purpose for which to act, as well as the importance of users' attitudes towards e-HRM, the means by which to achieve the goal, the fulcrum of the implementation. However, the technological factors are not overlooked, on the contrary, a good knowledge of these factors build an excellent starting point for proceeding with the implementation of the highly technological human resource management system, the essential tool.

In conclusion we can affirm that our work has produced confirmations and reiterated concepts of the previous work by empirically proving them and reporting examples from real and interesting case studies. With this work we complete a five-decade analysis path of research on disciplines such as human resource management, IT information systems and management and accounting. We provide a complete overview of empirically studied factors that allow you to have a general overview of what has been the evolution of the implementation of the e-HRM and its consequences, not only at an organizational level but also at the personal and user level of the users and technology. This therefore provides not only implications for research as it is further enriched, but also for practice because it allows, through examples of case studies, to understand what the pros and cons of e-HRM are. It is therefore a valuable aid for professionals to direct their choices.

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Appendix 1- Article's overview

Full reference of the article	***Research goal/ research question***	***Country***	***Theories/ concepts used***	***Methods***	***Sample***	***Findings: Factors that determine success of e-HRM***	***How do the authors define/ operationalise or measure e-HRM success?***
Hauptmann, S., & Steger, T. (2013). "A Brave New (Digital) World"? Effects of in-House Social Media on HRM. German Journal of Human Resource Management, 27(1), 26–46. https://doi.org/10.1177/239700221302700104	whether, and, if so, how social media usage influences and changes the everyday life of organizational members and, therefore, of HRM.	Germany	The authors include the dynamics of using social media over time. For this, they refer to ideas of structuration theory (Giddens, 1984) that are closely related to the encounter perspective.	Qualitative	They conducted two case studies in two different organizational settings with different social media technologies in use. The first case (*Business Soft*) is a medium sized German software company. The second case (*Inno Research*) is an interdisciplinary German university research group. The data consist of the complete text history of microblogging, of one semistructured face-to-face interview. Using an offline browser, they were able to analyze the communication flow than they use the QDA software 'Atlas.ti'.	First, the design, i.e., the technical configuration of social media, restricts but also enables certain activities. It sets the organizational structures that determine how everyday activities are coordinated. Second, they identified a new array of interaction that parallels the ordinary areas of interactions in organizations as part of membership.	they focus on two structural conditions – technology and social structure – and discuss them in light of the challenges for HRM.
Galanaki, E., Lazazzara, A., & Parry, E. (2019). A cross-national analysis of e-HRM configurations: integrating the	-Which configurational types exist in e-HRM adoption? -Which contextual factors explain the		In order to disentangle the complex interaction between HRM and technology, they propose a new	Mixed Method	The data employed in this study stem from the Cranet survey. Questionnaire back-translation, sampling	Summarising the findings, the following propositions can be made:	For determining different types of e-HRM configurations a set of binary categorical

information technology and HRM perspectives. In Organizing for digital innovation (pp. 261-276). Springer, Cham.	emergence of a certain configurational type of e-HRM?		configuration model based on the type of technology and HRM activities performed by organizations.		criteria and data collection procedures were over-seen by partner business schools and universities operating in each country. Consistent with an explorative configuration approach, cluster analysis with hierarchical Ward's distance was applied in order to see how companies are grouped ac-cording to their e-HRM application.	P1: Four types of e-HRM configurations can be identified named "non-usage", "HR primacy", "Integrated e-HRM", and "IT primacy". P2: Organizational size, SHRM and competing in international markets contribute more to determine the actual type of e-HRM configuration. P3: The lack of cooperation between IT and HR departments generates hybrid e-HRM configurations and unsuccessful adoption P4: The effect of national policies triggering innovation is more useful than broader geographical clusters in analysing different e-HRM configurations.	variables were employed. extent of IT for HRM, extent of e-HRM usage. In order to contextualise e-HRM configurations a set of variables that showed relevance in previous general e-HRM research was employed. Organizational size, Global competition, HRM position on the Executive Board, strategic involvement of HRM, e-HRM outsourcing, growth of the market, revenue, service quality, productivity, profitability, innovation stock market performance and environmental matters
Panayotopoulou, L., Galanaki, E., & Papalexandris, N. (2010). Adoption of electronic systems in HRM: Is national background of the firm relevant?. New Technology, Work and Employment, 25(3), 253-269.	RQ1. Is there any evidence of meaningful differences or similarities in the level of e-HRM adoption between different countries that is associated with different socio-cultural factors? RQ2. Is there any evidence of difference in the predictors of	Europe		Mixed Method	Their data concern 13 European countries. The sample consisted of 4300 companies from the above 13 European countries that are common to the CRANET and GLOBE. The data analysis consisted of three distinct phases. First, the data from the 4300 European companies were cluster	Countries in each cluster appear to share similar characteristics, in terms of their deployment of back and front-end HRM systems, as well as some general country characteristics, including national culture. The second research question would suggest that the adoption of e-HRM is region-specific	*National Background* (culture, Economy, Internet Penetration) *Organizational Level Factors* (size, firm performance, educational level) *HRM context* (centralization of HRM functions, strategic importance of HRM

	adoption of front-end and back-end systems of e-HRM between different countries?			analysed in order to determine countries' proximity in terms of socio-cultural context and use of e-HRM. Then, two stepwise linear regressions were performed on the original data of companies operating in homogenous clusters of countries	and affected by other factors than mere HRM or operation considerations. several of the mentioned independent variables appeared to affect the extent of use of both back and front-end e-HRM systems, but in a different way in each cluster of countries	function, internal communication, training) *E-HRM variables* (computerized HR information system, e-RM deployment, number of HR functions served by HRIS)
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(05), 1146-1162.	This article examines the potential use of e-HRM as a means to increase the value of the HR function, within the framework of the resource-based view.	The resource-based view (RBV). H1: Organizations with that use e-HRM will have a lower ratio of HR staff to total employees. H2: HR functions in organizations which use e-HRM will play a strategic role in the organization. H3: Organizations in which the senior HR manager has more experience will be more likely to use e-HRM. H4: Organizations that use e-HRM will be more likely to have a high devolution of HR tasks to line management. H5: Organizations that use a high level of e-HRM will also use a high level of HRO.	Qualitative	Their investigation is based upon cross-sectional data derived from the 2003 Cranet survey of 12 countries. These countries have all seen a growth in the use of e-HRM over the past ten years. The use of a survey allowed the authors to examine relationships between the use of e-HRM and other characteristics of the HR function and wider organization. The questionnaire consists of a number of questions about HRM policies and practices and workforce characteristics at the organizational level	Authors' findings do not support the suggestion that e-HRM may allow HR to reduce headcount (and therefore costs) through the completion of transactional activities (generic labour) in a more efficient manner. The relationship between e-HRM use and a strategic orientation suggests that these activities may be strategic, but it may be that HR staff are also being redeployed into shared-service centres or into technology support roles	*Dependent measures (*e-HRM use, e-HRM sophistication) *Independent measures* (Ratio of HR to employees, Strategic involvement of HR, HR manager experience, Devolution to line management, HR Outsourcing, Employee qualifications) *Controls* (Organisation size, Organisation age)

			H6: Organizations with a high level of qualified employees will be more likely to use e-HRM.				
Obeidat, S. M. (2017, August). An examination of the moderating effect of electronic-HRM on high-performance work practices and organisational performance link. In Evidence-based HRM: A Global Forum for Empirical Scholarship. Emerald Publishing Limited.	Does the inclusion of e-HRM enhance the influence of HPWP on organisational performance?	Jordan	H1. There is a significant positive relationship between HPWP and organisational Performance H2. There is a significant positive relationship between e-HRM and organisational Performance H3. e-HRM use positively moderates the relationship between HPWP and organisational performance	Qualitative	A large self-administered survey in the Jordanian manufacturing and financial sectors was carried out. The questionnaire was evaluated by a number of researchers in order to ensure content validity of the survey questions. A seven-point Likert scale was adopted in order to measure the level of constructs used in this study.		the survey questions used to measure HPWP, organisational performance, e-HRM, and control variables were all taken from previously published surveys (company ownership and the sector within which the company operates).
Erdoğmuş, N., & Esen, M. (2011). An investigation of the effects of technology readiness on technology acceptance in e-HRM. Procedia-Social and Behavioral Sciences, 24, 487-495.	A research was conducted in e-HRM field to test the effects of technology readiness on technology acceptance.	Turkey	The paper based on two theories from complementary areas: Davis's Technology Acceptance Model and Parasuraman's Technology Readiness Index (TRI).	Qualitative	The data for this study were collected from a sample of Human Resource (HR) managers representing top 500 largest private sector companies in Turkey. The data for this study were obtained by using a questionnaire. In order to identify the underlying structure of various measures a series of factor analysis were carried out.	four types of technology readiness have different effects on perceived usefulness and perceived ease of use about e-HRM. *Optimism and innovativeness* dimensions of technology readiness have positive effects on perceived usefulness and perceived ease of use. On the contrary it was found that *discomfort and insecurity* dimensions have not any significant effects on perceived usefulness and perceived ease of use.	

Maier, C., Laumer, S., Eckhardt, A., & Weitzel, T. (2013). Analyzing the impact of HRIS implementations on HR personnel's job satisfaction and turnover intention. The Journal of Strategic Information Systems, 22(3), 193-207.	How does the implementation of HRIS in organizations affect HR personnel job satisfaction and turnover intention?	Germany	Drawing on the literature on technology adoption and work-related consequences, the authors develop six hypotheses regarding how HRIS- and job-related attributes and beliefs influence HR personnel turnover intentions. H1. The greater the perceived ease of use of an implemented HRIS, the greater the perceived usefulness H2. The greater the perceived ease of use of an implemented HRIS, the more positive the attitude about using the system. H3. The greater the perceived usefulness of an implemented HRIS, the more positive the attitude about using the system H4. The more positive the attitude about using an implemented HRIS, the greater the job satisfaction. H5. The more positive an individual's job satisfaction, the lower the turnover intention. H6. The more positive an individual's attitude	Qualitative	They undertook an empirical study in 2010, during which we surveyed 150 HR employees at implementation stage. Before and after the survey, they also conducted interviews to accompany the empirical survey	Authors provide evidence that the implementation of an HRIS has a profound influence on the employees in terms of job satisfaction and turnover intention. Their study introduces individual-level consequences of HRIS implementations and raises the level of awareness regarding (un)intended consequences of HRIS implementations. The results reveal that an HRIS implementation not only has the anticipated effects, but that attitudes toward the new HRIS have an indirect effect on turnover intention that is fully mediated by job satisfaction	As both perceptual beliefs and attitude of TAM, as well as the two work-related outcomes, are measured by reflective indicators, content validity, indicator reliability, construct reliability, and discriminant validity needed to be observed to validate the measurement model Perceptual beliefs, Attitude, Job satisfaction, Turnover intention. To control our results, we included the three demographical variables age, gender, and work experience, as well as one personality trait

			toward using an implemented HRIS, the lower the turnover intention.			
Ramayah, T., & Kurnia, S. (2012). Antecedents and outcomes of human resource information system (HRIS) use. International Journal of Productivity and Performance Management.	The purpose of this paper is to test some antecedents and outcomes of human resource information system (HRIS) use in Malaysia	Malaysia	H1. Perceived relative advantage is positively related to extent of HRIS use. H2. Perceived compatibility is positively related to extent of HRIS use. H3. Perceived complexity is negatively related to extent of HRIS use H4. Perceived trialability is positively related to extent of HRIS use. H5. Perceived visibility is positively related to extent of HRIS use H6. More extensive use of HRIS enables increased information responsiveness by HR professionals. H7. More extensive use of HRIS enables greater information autonomy for HR professionals H8. More extensive use of HRIS enables HR professionals to make greater use of external professional links. H9. More extensive use of HRIS requires HR professionals to spend	Mixed Method	A research model based on a questionnaire gleaned from the literature was used to collect data through a purposive sampling technique. Only those companies in Penang, Malaysia which are using HRIS were targeted. The data collected were analyze using structural equation modelling technique with the use of partial least squares approach.To assess the model, we used SmartPLS M3 2.0 to estimate the parameters in the outer and inner model. PLS tries to maximize the variance explained of the dependent variables.	Results show that four out of the five antecedents are significant predictors of extent of use and that extent of use is significantly related to all five outcome variables. This paper provides further evidence on the appropriateness of using Roger's innovation attributes to measure different dimensions of attitude towards extent of HRIS use and Remenyi's and Zuboff's IT framework to measure the outcomes from the extent of HRIS use.

			more time on transformational activities H10. More extensive use of HRIS requires HR professionals to spend more time on IT support activities.			
Dahlbom, P., Siikanen, N., Sajasalo, P., & Jarvenpää, M. (2019). Big data and HR analytics in the digital era. Baltic Journal of Management.	How do the HR functions of our case companies utilize HR data, including BD, for HRA currently? RQ2. Which are the delimiting factors of HRA utilization, and how could these challenges be overcome? RQ3. How do HRA and role transition of the HR function interrelate?	Finland		Qualitative	This is an explorative case study based on qualitative interviews in nine leading Finnish companies. The data were acquired through semi-structured interviews. The actual analysis of data proceeded from close reading of the transcribed interviews to acquaint ourselves with the data. Next, the data were codified to form coherent themes which then served as vehicles for communicating our findings.	Their findings suggest that the challenges of making an impact on business-related decision making through data concerning workforce are numerous. To overcome these challenges, it is essential to have the required elements in place simultaneously: meaningful applications; access to appropriate, good quality data, including BD; the tools and expertise to harness the data available; and the needed skills to conduct analysis and deliver recommendations for action. It is also essential to find the means to overcome the hesitation of decision makers to rely on HR data and analysis, rather than intuition and past experience, when it comes to

						decision making regarding "soft" people-related business decisions.	
Dias, I., & Sousa, M. J. (2015). Business Intelligence applied to Human resources management. In New Contributions in Information Systems and Technologies (pp. 105-113). Springer, Cham.	The paper explores theoretically and empirically the implementation of a Human Resources Information System (HRMIS) impacts on the decision making of the Human Resources Managers through the use of business intelligence (BI) tools, as reports, analysis, dashboards and metrics or measures.	Portugal	H1: Business Intelligence is positively associated with HRM decision taking. H2: Business Intelligence will significantly predict HRM decision taking.	Qualitative	This research was based on a survey research design method. It involved a self-designed questionnaire in collecting data. The sample size for the study was 43 clients of a Human Resources software company in Portugal	This research paper finds that BI is positively associated with HRM decision taking and that also helps to predict HRM decisions in terms of future workforce planning and management	(i) HR Managers satisfaction with information gathered from the HRMIS by business intelligence tools regarding their decision making process. (ii) HR Technicians satisfaction with the quality of decisions made by HR managers according to the business tools used.
Strohmeier, S., & Kabst, R. (2014). Configurations of e-HRM-an empirical exploration. Employee Relations, 36(4), 333-353.	The purpose of this paper is to investigate types, contexts and consequences of electronic HRM (e-HRM) configurations to get a deeper understanding of the reasons, kinds and success of different e-HRM types	Germany		Mixed Method	The study is based on the German sample of the CRANET in 2009. The paper uses a cross-sectional survey of senior HR persons and analyses data with exploratory methods (cluster analysis, classification tree analysis and analysis of variance). To test for non-response bias the sample was partitioned into early and late answering organisations and a t-test was performed. To test for	The current study aimed to explore the systematic differences in e-HRM types. Based on the configuration approach and an explorative research design, it was discovered that: - three types of e-HRM – "non-users", "operational users" and "power users" – actually exist, while this trisection constitutes a stable and replicable result; - there is a sparse set of contextual variables – in	as indicators of operational e-HRM, e-personnel record keeping and administration, e-payroll, e-time and attendance management and e-access control were employed because they are typical for administrative HR work and distinctively aim at operational objectives. As indicators of relational e-HRM, the realisation of e-manager (self) service and e-employee (self) service were employed. as

				common method variance we performed a Harman-test for the variables used. To identify different types of e-HRM configurations cluster analysis was employed as a classic method of explorative configuration research.	particular, the size and strategic orientation of business and human resources – that is systematically associated with these three types; and - all three configurations contributed to organisational success, while the "power user" configuration somewhat exceeds the other configurations.	indicators of transformational e-HRM, the major four managerial HR functions of e-recruiting, e-compensation, e-training and development and e-performance management were employed. A set of categorical and numeric variables that showed relevance in previous general e-HRM adoption research was employed.
Parry, E., & Tyson, S. (2011). Desired goals and actual outcomes of e-HRM. Human Resource Management Journal, 21(3), 335-354.	1. What are the goals stated by organisations when introducing e-HRM? 2. What are the actual outcomes experienced by organisations as a result of the introduction of e-HRM? 3. What factors affect the realisation of stated goals for e-HRM?	UK	Qualitative	They have adopted a qualitative case study methodology in ten organisations. The number of interviewees for each case study was dictated by the advice of the HR Manager, the organisational structure, end users of e-HRM and availability of interviewees. Firstly, the analysis followed a deductive or top down process. Information related to the five themes identified from the literature was categorised firstly as a goal or outcome and then into one of the themes. At the same time, information that	Organisations introduced e-HRM to reduce headcount within the HR function, to improve cost effectiveness, remove the use of paper in HR processes or to improve the speed of processes. The introduction of e-HRM had significantly reduced the transactional work of the HR administration teams in Cancer Research UK, allowing the HR function time to work on more complex or value added tasks, and to spend more time advising managers.	HR skills Training in e-HRM use Engagement with e-HRM Design of the e-HRM system Familiarity with technology

					did not fit into one of these five categories was coded all together into a single separate category. This information was then re-coded to identify additional goals or outcomes emerging from the case studies and also to identify factors that might affect the realisation of goals.	**Factors affecting the realisation of e-HRM goals** HR skills, Training in e-HRM use, Engagement with e-HRM, Design of the e-HRM system, Familiarity with technology. E-HRM outcomes are mainly related to efficiency, service delivery and standardization, relational outcomes and potential improvements in organisational image. The realisation of improved efficiency and effectiveness is dependent on the design and implementation of the system and increased effectiveness and involvement in delivering the business strategy may depend on appropriate redeployment and up-skilling of HR staff.
Betchoo N.K. (2016), Digital transformation and its impact on human resource management: A case analysis of two unrelated businesses in the Mauritian public	-What is digital revolution in essence? -How does digital revolution impact on human resource development?	Mauritius	The research hypotheses were developed as follows: H1: Digital revolution impacts positively on human resource development.	Qualitative	The research was undertaken in two public organisations: The Université des Mascareignes and two public post offices located in north and the	The research sums up that digital revolution has a positive impact on human resource factors and is bound to play an influential role at the workplace. Human

service, IEEE International Conference on Emerging Technologies and Innovative Business Practices for the Transformation of Societies, EmergiTech, pp. 147-152	-What is the effect of digital revolution on the talent management? -How does digital revolution influence performance at work?		Null Hypothesis: Digital revolution has no impact on human resource development. H2: Digital revolution has an effect on the talent management. Null Hypothesis: Digital revolution has no effect on the talent management. H3: Digital revolution n influences performance at work. Null Hypothesis: Digital rev15olution influences performance at work.		eastern part of Mauritius. To ensure credible results, a relative comparison was made before using a questionnaire method.	resource managers and practitioners have to understand and apply good systems to ensure the effective management of data transformation in business. It is also understood that there must be effective coordination between the implementation and use of digital technologies to harness benefits in the three suggested variables discussed in this study.
Mazurchenko, A., & Maršíková, K. (2019). Digitally-Powered Human Resource Management: Skills and Roles in the Digital Era. Acta Informatica Pragensia, 8(2), 72-87.	The paper aims to introduce aspects of digitalization and robotization in the work of HR practitioners, identify positive and negative aspects of this phenomenon, and the challenges for HR created by new digital technologies. The research questions focus on: “How do digital tools and technologies influence the way HR functions are implemented?”, “What are the benefits and risks of using technologies in HR?” and “Which roles and competencies of HR professionals will be the	Europe		Quantitative	Secondary data from the literature review and the database of the European Commission were used for the data analysis in this paper. As well as primary data collected within the surveys SHARPEN related to the issue of human resource management in SMEs was also used in this paper. In the second stage authors analysed secondary data from the following sources: the database of the European Commission, surveys of multinational professional services networks (PwC, Deloitte,	The findings from this survey demonstrate that the power of digital transformation is only beginning to emerge, and HR tends to be slightly late to the party of technology adoption. The paper identifies the merits and demerits of digitalization in HR. In the case of jobs in HR, digital competencies are becoming more and more important, and the positions of HR managers were identified as those where the trend of growth in importance of digital skills will increase in the next five years.

	most important in the digital era?".				EY, etc.) studies and reports of management consulting firms (Capgemini, McKinsey, etc.).	Not only using the Internet and working with computers but also social media implementation has become an essential part of HR.	
Tanya Bondarouk, Rainer Harms & David Lepak (2015): Does e-HRM lead to better HRM service?, The International Journal of Human Resource Management, DOI: 10.1080/09585192.2015 .1118139	firstly, to establish the importance of the interplay between technological and organizational aspects and, secondly, to examine HRM service quality as an outcome of e-HRM implementation.	Belgium	Based on Adaptive Structuration Theory H1: There is a positive relationship between the HRM strength and the quality of HRM services H2: The positive relationship between HRM strength and the quality of HRM services is mediated by the frequency of e-HRM use. H3: There is a positive relationship between the strength of e-HRM and the quality of HRM services. H4: The positive relationship between the strength of e-HRM and the quality of HRM services is mediated by the frequency of e-HRM use H5: In situations with a high degree of appropriation, the mediating effect of the frequency of e-HRM use in the HRM Strength–HRM Service Quality relationship is stronger	Mixed Method	The research was conducted within a Belgian ministry. They employed response facilitation techniques. OLS regression was used to test a *direct effects model*. They separately tested the proposed relationships on all three dimensions of HRM service quality. Next, they compared the regression coefficients of the two models to identify any differences in the mediation effect. then tested for moderated mediations using the method suggested by Preacher et al. (2007) that treats the mediator as a continuous variable and avoids the perceived drawbacks of the sub-group approach	e-HRM technology is considered to be strong if it ensures unambiguous, relevant and easy-to-use messaging for end users. the potential advantages of e-HRM would be dependent on how the e-HRM technology was used. In other words, they expected to find that employees appropriation of e-HRM would play a moderating role in the relationship between e-HRM characteristics and HRM service quality. Authors also examined the role of frequency of use, assuming it would mediate the relationships between the strengths of both e-HRM and HRM and the HRM service quality. HRM strength is a key antecedent of HRM service quality, meaning that if organizations do not have a strong HRM	e-HRM strength HRM Strength Usage of e-HRM Perceived HRM Service quality

			than that in situations with a low degree of appropriation. H6: In situations with a high degree of appropriation, the mediating effect of the frequency of e-HRM use in the e-HRM Strength–HRM Service Quality relationship is stronger than that in situations with a low degree of appropriation.			system to begin with, they should not implement e-HRM: it will fail.
Francis, H., Parkes, C., & Reddington, M. (2014). E-HR and international HRM: A critical perspective on the discursive framing of e-HR. The International Journal of Human Resource Management, 25(10), 1327-1350.	the following research objectives: 1. to critically examine how e-HR is constituted as discourse and how this shapes relations of power between HR practitioners and line managers; 2. to explore the paradox and ambiguity of the emergent e-HR discourse, arising from the wider discursive, social and economic context in which it is located; 3. to consider the practical and ethical consequences of the discursive framing of HR duties required of line managers, focusing upon managerial 'agency' in	London		Qualitative	The empirical investigation presented here primarily focuses on interview data gathered as part of a wider case study investigation into e-HR within a leading global oilfield services provider, published earlier. Data collection included a web-based survey across two strategic business units, followed by interviews with the HR director and a purposive sample of (nine) line managers who were responsible for different service areas.	The contribution of this study at this more practical level is to elicit thinking and constructive dialogue amongst HR academics and practitioners about the line/employee facing role in HR work and how various dialogic OD interventions might be used to help facilitate negotiated agreements amongst stakeholders who have a vested interest in e-HR outcomes. Authors argue that it can be very difficult to build genuine relationships based on trust, reciprocity and exchange in the move to e-HR, given that this inevitably undermines HR opportunities to

	shaping the practice of HRM, including the type of support services provided by the HR function				engage with people together with the risk of alienation as their work becomes more systems-led and mechanized.
Ziebell, R. C., Albors-Garrigos, J., Schultz, M., Schoeneberg, K. P., & Perello-Marin, M. R. (2019). eHR Cloud Transformation: Implementation Approach and Success Factors. International Journal of Intelligent Information Technologies (IJIIT), 15(1), 1-21.	it will analyse fields such as IT and HRM, and how much more effort is needed to bring and integrate them together. This article focuses on the "digital employee management" and especially on how to transform HR processes into the digital world with the help of cloud technology.	Germany	Qualitative	this study is conducted using a qualitative approach. They have based their methodology on the review of seven case studies. This field study was carried out from 2012 to 2018. The case studies selected justify the followed method since they have been implemented in large companies with experience in IT projects and working in a variety of sectors, industry, and services. The experiences described below results from several HR Cloud implementation projects in Germany during 2012-17.	1. The literature review shows a significant focus on the effects of digital HR transformation. However, the concrete implementation is often ignored, and only the results are assessed retrospectively. This article bridges between analogue and digital HR worlds; 2. It shows experience from real projects as well as stakeholder notions: The stakeholders and their respective influence are analysed and offer an improved possibility of project management. The role of stakeholders contributes in particular, as various articles have suggested; and 3. Cloud Architecture: The article contributes to the IT view of cloud architectures, because this depends on various (functional) parameters and the final stage of

						expansion must optimally reflect the organisational HR requirements.	
Lazazzara, A., & Galanaki, E. (2018). E-HRM adoption and usage: a cross-national analysis of enabling factors. In Digital Technology and Organizational Change (pp. 125-140). Springer, Cham.	What factors influence e-HRM technology adoption and usage for HRM?		DOI perspective	Mixed Method	The first is the Cranet survey. The survey provides comprehensive information about the HRM practices of organizations and uses the participating companies' HR directors as the key informants. The second source of data is the 2015 Global Innovation Index (GII). SEM analysis was deemed necessary to test the model. The STATA14, module SEM-GSEM and the STATA SEM path diagram modules were used. In the first step, regular SEM analysis was conducted to confirm the model for the firm-level relations. In the second step, generalized SEM was applied, as it allows for the introduction of multilevel variables.	They built on diffusion of innovation theory and the institutional literature to disentangle the factors enabling HRM innovation. They created three groups of factors: institutional, organizational, and HRM. Furthermore, they also ascertained the intensity of the adoption and diffusion among HRM practices. Confirming previous results, organizational size significantly influenced not only e-HRM adoption but also its usage for HRM	Dependent variables. There are two dependent variables in this study: extent of e-HRM adoption and extent of e-HRM usage. Country context Organizational context: Organizational size, Global competition, economic sector. HRM context: HRM position on the Executive Board, strategic involvement of HRM, e-HRM outsourcing.
Bondarouk, T., Schilling, D., & Ruël, H. (2016). eHRM adoption in emerging economies: The case of subsidiaries of multinational	First challenge: explain the discrepancy between promised and realized outcomes partially due to processes of how	Indonesia	the DOI theory	Qualitative	They chose the Indonesian context. 11 companies agreed to participate in their study.	Results indicate that the adoption of eHRM in subsidiaries of MNCs in international, emerging economy contexts such as Indonesia is highly	eHRM adoption level, attributes of the innovation (Relative advantage, Compatibility, Complexity, Trialability,

corporations in Indonesia. Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration, 33(2), 124-137.	companies and their employees use and adopt eHRM. Second challenge: examining eHRM adoption from an international perspective, with most focusing on developed economies. Final challenge: examining eHRM adoption through the DOI theory.				They collected the data through semi-structured interviews.	affected by the decision making process at the MNC's headquarters. Findings indicate that managers tend to have a weak influence in the decision-making process of eHRM adoption. Subsidiary managers must find a way to make their voices heard in this process.	Observability), and attributes of the environment (Communication, Knowledge and skills, Cultural influences, Availability of resources, External influences, Management support).
Ruël, H., & Van der Kaap, H. (2012). E-HRM usage and value creation. Does a facilitating context matter?. German Journal of Human Resource Management, 26(3), 260-281.	to what extent does usage of e-HRM applications predict HR value creation, and which contextual factors facilitate or inhibit this relationship?	Netherland	H1: The higher the appropriation of e-HRM applications and frequency of use, the greater the value created for HRM H2a: The higher the HRM facilitating conditions, the greater the value created for HRM. H2b: The higher the separate HRM facilitating conditions, the greater the value created for HRM H3a: The relationship between the appropriation and frequency of use of e-HRM applications and value created for HRM is moderated by the HRM facilitating conditions: the relationship is	Mixed Method	Data were collected from the Netherlands-based branches of three different, large, international organizations. For this study, authors developed a questionnaire to collect data. The questionnaire was checked by three academic researchers from three different universities. This was done to refine the questionnaire. Explorative factor analysis (via PAC) was used to identify the three dimensions of dependent variable HRM Value Creation	Of particular interest is the use of the concept of appropriation which goes beyond just usage in terms of frequency of system usage. It aims to measure usage in line with the intentions of an application or system. Appropriation of e-HRM is confirmed to be positively related to value creation factors. Findings indicate that contextual factors, as HR facilitation, are directly positively related to HRM value creation. Results show that if there is no contextual facilitation, e-HRM usage is positively related to HRM value	Value Creation Effectiveness Ease of use and Usefulness Efficiency Efficient handling of documents and personal data HR Service quality Usage of e-HRM e-HRM appropriation Frequency of use HRM facilitation) Facilitating conditions Data quality HR's technology competence HRM consistency

		stronger if the HRM facilitating conditions are better. H3b: The relationship between the appropriation and frequency of use of e-HRM applications and the separate dimensions of value creation for HRM is moderated by the HRM facilitating conditions: the relationships are stronger if the HRM facilitating conditions are better.			creation. Furthermore, the contextual factors, facilitating conditions, data quality, HRM technology competences, and HR policy consistency are also positively related to HRM value creation.	
Mahfod, J., & Khalifa, N. Y. (2017). Electronic human resource management (E-HRM) system.	1. To determine the relationship between employees' performance expectancy and E-HRM Usage in HR department. 2. To investigate the relationship between the employees' Effort expectancy and E-HRM Usage in HR department. 3. To determine the relationship between the employees' Social Influence and E-HRM Usage in HR department. 4. To examine the relationship between the employees' Facilitating Conditions and E-HRM Usage in HR department.	a research framework based on the Unified Theory of Acceptance and Use of Technology Model,	Mixed Method	The instrument that is employed for this study is a self-administered questionnaire with closed-ended questions adapted from, with modifications to make it specific to the organization HR department employees. The research population is including the HR employees in the organization who are the user of electronic human resource management (E-HRM) system. The sample size taken for the study is 150. However, the valid returned questionnaires were 87, which serves as a sample	In order to meet the demands of today's knowledge-based economy, it is necessary for organizations to maximize the potential and productivity of their employees, a goal towards which E-HRM could be of help. this research indicate to organizations to understand how the employees' attitudes are essential towards electronic human resource management system to able to improve the stability, and gain profitability. It will also increase the employee's and	Performance expectancy (PE) Effort expectancy (EE) Social influence (SI) Facilitating Conditions (FC) Attitude towards using e-HRM system

					for this study. The Cronbach's Alpha value is used to test the reliability of the items measuring each variable	performance while working on the system. The employees can understand the system usability.	
Berber, N., Đorđević, B., & Milanović, S. (2018). Electronic human resource management (e-HRM): A new concept for digital age. Strategic Management, 23(2), 22-32.	the aim of this paper is to point out the significance of e-HRM concept, its most important characteristics, advantages, potential shortcomings, and to explore the level of use of e-HRM in Serbia.	Serbia	a review of the literature referring to e-HRM	Mixed Method	The analysis was carried out on the database of the Cranet Research from 2015/2016, by using the SPPS software. The standardized questionnaire used in the research is divided into six parts. Data analysis was done using the SPSS statistical program, by using descriptive statistics and the Spearman's Chi-Square test.	The paper points out that the key advantages of such a system are the faster, more accurate and easier processing of information about employees, cost savings, the release of HR managers from administrative tasks, increased access to HR data, standardization of HR processes within the company, more consistent and up-to-date data on employees and their performance, and the like. In short, using the e-HRM concept, this function is able to achieve a significant positive impact on the entire operation of the organization, as its application increases the efficiency and effectiveness of its work.	▪ Use of the e-HRM in an organization; ▪ Use of the self-service system for managers; ▪ Use of the self-service system for employees. For the purpose of a more detailed analysis, the mentioned variables were placed in relation to the variables of the size, sector, and industry of the enterprise in order to determine the level of use and representation of these systems in organizations in the Republic of Serbia.
Lin, L. H. (2011). Electronic human resource management and organizational innovation: the roles of information technology	This study conducted an empirical investigation to test: (1) direct effects of employee's creativity, IT infrastructure, and VO structure adoption on	Taiwan	Hypothesis 1: Employee's creativity is positively related to organizational innovation Performance	Qualitative	Data were collected at organizational and individual levels. To collect organizational data, the	The first finding in this study demonstrated that employee's creativity is an extremely important determinant of	Employee's creativity within an organization Organizational innovation

and virtual organizational structure. The International Journal of Human Resource Management, 22(02), 235-257.	organizational innovation and (2) identify the moderating effects of IT infrastructure and VO structure adoption on the relationship between employee's creativity and organizational innovation.	Hypothesis 2a: IT adoption is positively related to organizational innovation Hypothesis 2b: IT adoption positively moderates the relationship between employees' creativity and organizational innovation. Hypothesis 3a: The adoption of VO is positively related to organizational innovation performance. Hypothesis 3b: VO adoption positively moderates the relationship between employees' creativity and organizational innovation.		proposed hypotheses were tested on a sample of information and computer firms located in Taiwan's largest science park, the Hsinchu Science-based Industrial Park (HSIP). This study adopted hierarchical regression to test research hypotheses. Prior to discussing regression results, all variables were standardized for refined diagnostic analyses that confirmed the adequacy of all models.	organizational innovation; however, some other control variables, such as training, also had a fair influence on innovation. The second set of findings revealed that the adoptions of IT and VO are more influential than employees' creativity and all control variables as IT and VO have both direct and indirect effects on organizational innovation. This study also demonstrated that IT has a direct influence on organizational innovation performance.	The independent variables (Adoptions of IT and VO structure) Control variables (top manager professionalism and employee training)
Strohmeier, S., Bondarouk, T., & Konradt, U. (2012). Editorial: Electronic Human Resource Management: Transformation of HRM? German Journal of Human Resource Management, 26(3), 215–217. https://doi.org/10.1177/239700221202600301	Transformation of HRM? Is it ever possible?		Qualitative	a review of recent books on e-HRM. Mapping major academic functions, books on researching, teaching, and practicing e-HRM are considered.	The review uncovers that the considered books offer a heterogeneous plethora of insights into researching, teaching and practicing e-HRM. Still, however, it is not easy to get the "big picture" of e-HRM and further contributions to the respective categories are both possible and necessary.	

Wickramasinghe, V. (2010). Employee perceptions towards web-based human resource management systems in Sri Lanka. The International Journal of Human Resource Management, 21(10), 1617-1630.	the focus of this paper is on the discussion of the results of an empirical investigation into employee perceptions toward web-based HRM systems in Sri Lanka. The paper examines a number of specific questions. These include the type of web based HRM modules (functionalities) deployed; the perceived usefulness of web-based HRM systems; user acceptance of web-based HRM systems in terms of user satisfaction and system usage; individual, organisational and system conditions that explain the level of user satisfaction and system usage; and the extent to which web-based HRM systems led to devolve HRM workload to employees.	Sri Lanka	in this study, the acceptance of the web-based HRM system is measured by the system usage and user satisfaction.	Qualitative	The sample for the study was selected from the firms that use web-based HRM system as a stand-alone automation serving employees' HRM needs. The self-administered questionnaire was chosen as the main mode for data collection. The survey questionnaire was designed covering the aspects related to the web-based HRM system that are outlined in the earlier sections. The analysis of the survey data was conducted using SPSS. In addition to descriptive statistics, independent sample test, correlation and stepwise multiple regression analysis was used. To determine how independent variables predict the two dependant variables, stepwise multiple regression was performed	The web-based HRM system acceptance is assessed based on the user satisfaction and system usage. The findings led to reveal that the system usage is high. The level of complexity is moderate. The moderate level of system complexity reveals perception towards the ease of use. The findings of the study also highlight the time related, cost related and organizational performance related conditions that support the system usage and user satisfaction. The findings revealed that the user satisfaction is moderate.	-Organizational characteristics -System conditions and performance -Individual characteristics
Tansley, C., & Kirk, S. (2016). Exploratory learners, HR ambidexterity and E-HRM projects. In Human	What are the processes through which exploratory learners facilitate HR	UK	Ambidexterity as a balance of exploitation/exploration	Qualitative	A case study of HR specialists and management of a UK local authority (TLA) was examined. Fourteen		

Resource Management, Innovation and Performance (pp. 130-144). Palgrave Macmillan, London.	ambidexterity through e-HRM systems?				semi-structured interviews were conducted. A second data gathering activity was the observation of a one day Human Capital Management (HCM) workshop. All interviews were transcribed and analyzed to identify key themes. Analysis was done initially by the creation of mind-maps from the interview transcripts. Emerging themes were then used in NVIVO, a software qualitative data analysis package.		
Fındıklı, M. A., & beyza Bayarçelik, E. (2015). Exploring the outcomes of Electronic Human Resource Management (E-HRM)?. Procedia-Social and Behavioral Sciences, 207, 424-431.	Research questions consisted of reasons underlying to use EHRM and functions, what are the benefits of electronic HRM, and the changes in organizational outcomes as employee commitment, cost effectiveness and competence.	Istanbul	1.H1: E-HRM for all functions allows to reduce the time spend for HRM process. 2.H1: E-HRM for all functions allows to reduce administration costs. 3.H1: E-HRM for all functions allows to improve communication between organization, manger and employees	Qualitative	Sixteen human resource specialists, who are working for service industry, were asked to participate in our study. In the sample four of companies were Turkish biggest GSM service providers. Semi-structured interviews were conducted using an interview guide designed specifically for this study	time management, easy acquiring and access to personal data, and reduce administration costs was the primary motivator for electronic human resource applications	use EHRM and functions, what are the benefits of electronic HRM, and the changes in organizational outcomes as employee commitment, cost effectiveness and competence
Bissola, R., & Imperatori, B. (2013). Facing e-HRM: the consequences on employee attitude towards the organisation and the HR department	what are the effects of the different categories of e-HRM practices on the relationship between employees and the organisation in Italian	Milan	H1: The organisational affective commitment of SME employees will be greater the higher the perceived level of	Qualitative	A survey was carried out to collect data from 1778 employees. The sample was drawn from the alumni of two Italian universities and four	The result confirms the use of different types of e-HRM practices in SMEs and contributes to literature on the intersection between ICT	adoption of e-HRM systems, level of technological familiarity, attitudes toward the organisation (measured as affective

in Italian SMEs. European Journal of International Management, 7(4), 450-468.	SMEs? What are the effects of the introduction of e-HRM practices in Italian SMEs on employee perceptions of the HR department?		adoption of relational e-HRM systems. H2: The competence of the HR department in SMEs will be perceived as greater the higher the perceived level of organisational adoption of relational and transformational e-HRM systems. H3: The perceived efficiency of the HR department will be greater the higher the perceived level of organisational adoption of operational e-HRM systems by SMEs.		colleges. Auhtors estimated three multiple regression models, one for each employee attitude respectively towards the organisation (*commitment*) and the HR department (*competence and efficiency*).	and SMEs, reinforcing the relevance of different types of technology-based solutions specifically in SMEs where, more than in other contexts, usability and cost reduction seem to be critical factors. the results corroborate the general relevance of e-HRM systems in influencing the employee-organisation relationship in SMEs. The findings reinforce the importance of considering attitude towards technology in explaining the results in relation to the adoption of new technological solutions	commitment), and perception of the HR department.
Rahman, M. A., Qi, X., & Jinnah, M. S. (2016). Factors affecting the adoption of HRIS by the Bangladeshi banking and financial sector. Cogent Business & Management, 3(1), 1262107.	This study attempted to identify the salient factors affecting adoption of HRIS by Bangladeshi banking and financial sector	Bangladesh	theory of acceptance and use of technology (UTAUT) model. H1: Performance expectancy influences users' intentions for the adoption of HRIS. H2: Effect expectancy positively influences users' intentions adoption of HRIS. H3: Social influence affects users' intentions adoption of HRIS.	Qualitative	In the survey questionnaire, the target population for this research was employees working in various public and private banks and financial organizations in Dhaka, the capital city of Bangladesh. A structured questionnaire was utilized for the collection of data and for measuring the constructs of the	This study has found social influence has both direct and indirect effect on the adoption of HRIS. The indirect effect comes from the mediation factor of behavioral intentions. Banking and financial sector have been significantly benefited by the adoption of ICT throughout the world. Adoption of ICT facilitates offering new	Performance expectancy Effort expectancy Facilitating conditions Use behavior Behavioral intention Social influence

			H4: Facilitating conditions of adoption of HRIS positively affects users' use behaviors of adoption of HRIS. H5: Users' behavioral intentions for the adoption of HRIS positively affects use behavior of HRIS. H6: Behavioral intentions mediates the relationship between social influence and use behavior.		proposed research model	product and services through different delivery channels, remain efficient, cost effective, and innovative.	
Musfiqur, R., Mordi, C., & Nwagbara, U. (2018). Factors influencing e-HRM implementation in government organisations: Case studies from Bangladesh.	The aim of this study is to examine the impact of e-HRM systems in government organisations in a developing nation		TOE and DOI theory	Qualitative	Both primary and secondary sources of data were used in the study. Firstly, primary data that provide importantly and relevant data source was used to gather first-hand data that has not been generated by others. Semi-structured interviews were conducted in the study	the cost reduction, better HR support, ease access to data and information, encouraging the IT usage, fast delivery for services, centralising the data, improving the knowledge of employees, clear legislations and rules, aligning the HR strategy with organisation strategy, etc.; these are an example of the benefits	seven different dimensions; technological, environmental, organisational, political, economical, legal and social
Nagendra, A., & Deshpande, M. (2014). Human Resource Information Systems (HRIS) in HR planning and development in mid to large sized organizations. Procedia-	1. To identify the contribution of HRIS recruiting subsystem to the workforce planning of an organisation 2. To investigate the contribution of HRIS subsystem to the	Pune		Qualitative	For data collection, the respondents were HR managers from mid to large sized organizations in Pune. Questionnaires were distributed to 50 senior and junior HR executives involved in	There is a high positive relation between HRIS job analysis and the effectiveness of HR planning. Most organisations observed the HRIS contribution to efficiency of HR planning	role of HRIS in recruitment and selection, role of HRIS in training and development and common role of HRIS in recruiting and training and development.

Social and Behavioral Sciences, 133, 61-67.	training and development of the workforce of an organisation 3. To explore the overall contribution of HRIS to HR decision making and aligning of the HR strategy to the organization.s strategy.				both HR planning and HRIS	through HRIS skill inventory, HRIS TNA, HRIS training program evaluation, HRIS succession planning, HRIS labour demand and supply analysis and decision-making. The study revealed that the relationship between increased usage of HRIS results in an increase in both effectiveness and efficiency of the organization.	
Marler, J. H., & Parry, E. (2016). Human resource management, strategic involvement and e-HRM technology. The International Journal of Human Resource Management, 27(19), 2233-2253.	The objective of this study was to empirically evaluate competing perspectives concerning the relationship between e-HRM and the strategic role of HRM. Is technological transformation a precursor of strategic HRM, as some suggest, or is information technology simply a tool to execute strategic decisions, in which case HR strategy precedes the deployment of e-HRM?		H1. The use of more e-HRM capabilities within an organization results in greater involvement of HR personnel in strategic decision-making. H2. The use of more e-HRM capabilities within an organization is the outcome of greater involvement of HR personnel in strategic decision-making	Qualitative	The data used in this study were taken from the 2003-5 Cranet survey. The questionnaire consisted of a number of questions about e-HRM use and sophistication, and about HRM policies and practices at the organizational level. The covariance between e-HRM and HR strategic involvement can be partitioned into three components	Managers involved in making strategic decision can determine the extent of an organization's e-HRM capabilities but so too cans the deployment of E-HRM have significant effects on the strategic role of HRM in organizations. The results highlight how the outcomes of combining information technology and human resource strategy may co-evolve in tandem with external stakeholders such vendors, political institutions and market competitors	Instrumental Variables Organization Mission Business strategy HRIS Integration Dependent Variables HR Strategic Involvement e-HRM capabilities Control Variables Size
Davarpanah, A., & Mohamed, N. (2013, November). Human	What are information systems success factors	Malaysia	The authors use DeLone and McLean information systems success model,	Mixed Method	The institution launched a performance management system	Based on factor analysis and reliability analysis results, information	Information Quality System Quality Service Quality

resource information systems (HRIS) success factors in a public higher education institution context. In 2013 International Conference on Research and Innovation in Information Systems (ICRIIS) (pp. 79-84). IEEE.	in a public higher education context?		trust model and Ulrich human resource roles model.		that records annual performance of academic and non-academic staffs. A survey research questionnaire approach was used to collect the data for this research. Data are analysed using SPSS Version 20. The research uses factor analysis and reliability analysis.	quality items include information timeliness, undersatandibility and completeness are valid. information quality, system quality, service quality, structural assurance and user satisfaction comprise human information system success factors in a public higher education institution	Situational Normality Structural Assurance User Satisfaction Perceived benefits of system
Školudová, J. (2017). IT CHALLENGES OF HUMAN RESOURCE MANAGEMENT FOR GENERATION Y. In Proceedings of the International Scientific Conference of Business Economics, Management and Marketing, ISCOBEMM 2017. Masarykova univerzita.	The aim of this paper is to determine whether Enterprise Social Network positively affects Human Resource Management for generation Y.	Czech Republic		Mixed Method	The methodology of primary research is based on questionnaire research. This research was attended by 69 students of the University of Pardubice. The methodology of secondary research is based on comparative qualitative research on the basis of a survey conducted in the Czech Republic. For statistical evaluation was used program STATISTICA	The digital world allows for faster time and more effectively connection between businesses and their employees, customers and business partners. Managers also address what new sophisticated tools to implement to the business management.	The challenge for HRM therefore is to identify actual digitally induced changes in attitudes, qualifications, behaviours and expectation of younger employees.
Iqbal, N., Ahmad, M., Raziq, M. M., & Borini, F. M. (2019). Linking e-hrm practices and organizational outcomes: empirical analysis of line manager's perception. Revista	This research aims to investigate whether operational, relational, and transformational e-HRM practices improve employee productivity in the workplaces of commercial banks in Pakistan	Pakistan	The study contributes to the RBV. H1a: Operational e-HRM practices are positively and directly associated with employee productivity. H1b: Relational e-HRM practices are positively	Mixed Method	There are no secondary data sources for examining how e-HRM influences workplace outcomes in Pakistan. A structured self-administered questionnaire was sent to 11 banks. Structural equation modeling was	The results indicate that e-HRM practices, categorized as operational, relational, and transformational, have the potential to improve employee productivity. Adopting e-HRM practices improves the quality of HR	Employee productivity HR service quality Operational e-HRM practices Relational e-HRM practices Transformational e-HRM practices Organization size and

Brasileira de Gestão de Negócios, 21(1), 48-69.			and directly associated with employee productivity. H1C: Transformational e-HRM practices are positively and directly related with employee productivity. H2a: Higher adoption rates of operational e-HRM practices are positively associated with HR service quality. H2b: Higher adoption rates of relational e-HRM practices are positively associated with HR service quality. H2a: Higher adoption ra t e s o f transformational e-HRM practices are positively associated with HR service quality. H3: QHRS mediates the relationship between operational, relational, and transformational e-HRM practices and employee productivity		employed to analyze the data. The data were analyzed using two sequential processes to examine the causal relationship. First, confirmatory factor analysis (CFA) was performed using PLS-SEM. In a second step, the theoretical relationship was tested. Factor analysis was conducted to distill and group the factors.	processes, which in turn leads to higher employee productivity. This study extends the existing e-HRM models by identifying that QHRS mediates the relationship between operational, relational, and transformational e-HRM practices and employee productivity	organization age were used as control variables
Furtmueller, E., Wilderom, C., & Tate, M. (2011). Managing recruitment and selection in the digital age: e-HRM and resumes. Human Systems	"What are the requirements of digital resume forms from the recruiters' perspective?" This main question is broken down into the following three sub-questions:	Netherlands		Qualitative	Authors first determined which specific companies were active at two career fairs, the Nobiles career event in Utrecht and the Nationale Carrierebeurs in Amsterdam. The interviews were semi-	They propose two new resume fields specifically relevant for effectively working with digital resume databases: career status and desired job. Both of these categories provide useful information for	

Management, 30(4), 243-259.	1. Which fields in digital resume forms are significant from the recruiters' perspective? 2. How can the fields used in digital resume forms be systematically represented? 3. What workflow process can be used to utilise digital resume fields and search functions to improve recruiters' identification of prospective staff?				structured and included open-ended questions. They used the classification system from Ross and Young as a starting point. Two coders then wrote down and coded independently every resume category including fields, field type and input options.	recruiters using resume databases for searching and matching	
Panos, S., & Bellou, V. (2016). Maximizing e-HRM outcomes: a moderated mediation path. Management Decision.	The purpose of this paper is to examine the impact that different types of e-HRM goals have on distinct types of e-HRM outcomes and an explanatory mechanism, by incorporating HRM role as a mediator and IT users' acceptance as a moderator.	Greece	H1. The type of e-HRM goals influences the type of e-HRM outcomes achieved. H1a. Operational e-HRM goals increases operational e-HRM outcomes. H1b. Relational e-HRM goals increases relational e-HRM outcomes. H1c. Transformational e-HRM goals increases transformational e-HRM outcomes. H2. HRM role mediates the relationship between the type of e-HRM goals set and the type of e-HRM outcomes achieved. H3. IT Users' acceptance of the e-HRM system moderates the mediated	Mixed Method	HR managers of all organizations that adopt some form of e-HRM systems in Greece were asked to participate in the study. The responses of 80 out of 167 managers were analyzed through various methods, including exploratory factor analysis, cross-tabulations, and bootstrapping. To estimate the potential effect of CMV, the authors conducted the marker variable test, using e-HRM sophistication as a marker variable.	The results indicate that the type of e-HRM goals is linked with the respective type of e-HRM outcomes achieved. Operational e-HRM goals increase primary e-HRM outcomes, when the acceptance of the e-HRM system by users is low, probably because a typical, basic e-HRM system has greater added value for those that are less familiar with IT systems, facilitating everyday routine HR tasks and activities. Users accept the e-HRM system adopted by their organizations directly increases e-HRM	Type of e-HRM outcomes. Type of e-HRM goals User acceptance of e-HRM system HRM role Control variables (size of the organization, the size of the HR department, organizational age, annual turnover)

			relationship between e-HRM goals and e-HRM outcomes through HRM roles, such that different types of e-HRM goals produce different types of e-HRM outcomes.			outcomes, too, in the case of both primary and transformational outcomes.	
Arjomandy, D. (2016). Social media integration in electronic human resource management: Development of a social eHRM framework. Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration, 33(2), 108-123.	this paper, an extensive analysis and comparison of HR-related social media applications is undertaken and applied to develop a framework to differentiate among the practices		Social Participation Framework	Qualitative	To develop a generalizable framework useful in the description of social eHRM practice, author used a multiple-case study approach involving different companies. A qualitative comparison and analysis of the social eHRM systems at these companies resulted in the identification of two dimensions that could be used to meaningfully differentiate among practices involved.	P1. Companies will be more likely to achieve their desired eHRM goals by using the Social Participation Framework to guide their choices as to who the user groups should be. P2. Increases in the extent to which a company customizes a given social media application will be positively associated with the degree to which the targeted eHRM goal will be achieved. P3. Organizations that use social e-HRM systems will have higher levels of engagement among their targeted stakeholders relative to those who use standard e-HRM.	
Wolf, M. V., Sims, J., & Yang, H. (2014). Social media utilization in human resource management. In 8th Multi Conference on Computer Science and	The focus of the research is on the contribution of Social Media to the creation of a strong communication system	UK	In this paper HRM is theorized as a communication system whose strength is determined by three criteria: (1) *distinctiveness*	Quantitative	The model has been applied to exemplary case studies of two large UK organizations. Open-ended semi-structured interviews with HR	The findings indicate emergent Social Media usage across all areas of HRM, along all hierarchical levels and for different types of communication. It	Attraction and Selection Job Design, Training and Development, Reward – Engagement and Collaboration Off-boarding and Alumni

Information Systems (pp. 2-6).			*(2) consistency* (3) *consensus*		employees were conducted	seems, that "top-down" utilization is prevailing in HRM activities that relate to external public. Social Media tools which are used "top-down" mostly employed uni-directional broadcasts or uni-directional feedback. The discrepancy between "bottom-up" dialogic communication and "top-down" uni-directional communication points towards a potential disruptive characteristics of Social Media utilization.	
de Zubielqui, G. C., Fryges, H., & Jones, J. (2019). Social media, open innovation & HRM: Implications for performance. Technological Forecasting and Social Change, 144, 334-347.	How does external knowledge flows from market-based actors sourced by social media influence innovation and business performance? Do modern HRM practices moderate the relationship between external knowledge flows from market-based actors sourced via social media and innovativeness?	Tasmania, Australia	H1. External knowledge flows from market-based actors are positively associated with firm innovativeness. H2. External knowledge flows from market-based actors are positively associated with social media use. H3. Social media use is positively related to firm innovativeness. H4. Social media mediates the relationship between market based actors and innovation.	Quantitative	The analysis uses the Tasmanian Innovation Census (TIC) conducted in 2013 by the Australian Innovation Research Centre (AIRC) which is a firm survey that collects information on business innovation activities in Tasmania. The data analysis was subdivided into two parts. First, a descriptive analysis was conducted using Stata, version 14. Second, the author used structural equation modelling (SEM) to analyse the measurement and structural models. AMOS	The results showed that social media mediates the relationship between external knowledge from market-based actors and innovativeness, and that social media influences firm innovativeness, but only in firms that use modern HRM practices. These results suggest that in order to benefit from open innovation, and in particular, fully exploit knowledge inflows from market-based actors via social media, and realise, innovativeness and productivity benefits,	The dependent variables include firm performance and innovativeness. Independent variables include external knowledge flows from marketbased actors and social media, and modern HRM practice is used as a moderator in the model.

			H5. Firm innovativeness is positively associated with firm performance		version 20 was used to run the SEM.	managers are advised to implement modern HRM practices designed to facilitate inter- and intra-organisational use of social media tools, and create an organisational context that favours knowledge acquisition and sharing.	
Sheehan, C., De Cieri, H., Cooper, B., & Shea, T. (2016). Strategic implications of HR role management in a dynamic environment. Personnel Review.	The purpose of this paper is to consider the impact of human resource (HR) role overload and HR role conflict on the HR function's involvement in strategic decision making and to examine whether conditions of environmental dynamism moderate the impact of HR role conflict and HR role overload in that relationship.	Australia	H1. Greater HR role overload will be associated with lower HR involvement in strategic decision making. H2. Greater HR role conflict will be associated with lower HR involvement in strategic decision making. H3. Environmental dynamism will moderate the relationship between HR role overload and HR involvement in strategic decision making, such that the relationship between role overload and HR involvement in strategic decision making will be increasingly negative at higher levels of dynamism. H4. Environmental dynamism will moderate the relationship between HR role conflict and HR	Mixed Method	The sample for the research comprised senior HR and top management executives in medium to large employers in Australia. The research used a mail survey conducted in 2012. The hypotheses were tested using OLS regression with HR involvement in strategic involvement as the dependent variable. Multiple regression is the method of choice for analysing general linear models with moderator (interaction) effects. To reduce problems associated with multicollinearity and to generate correct standardised regression weights in moderated regression, all variables, were z-standardised prior to analysis.	Results did not support hypothesised negative relationships between HR role management and involvement in strategic decision making but did establish the moderating effect of environmental dynamism, such that these associations were more negative at higher levels of dynamism. It would seem therefore that when environmental uncertainty is low, HR role overload and role conflict are positively associated with HR involvement in strategic decision making. The positive association may reflect the ongoing difficulties experienced by the HR manager in balancing the strategic decision-	HR involvement in strategic decision making HR role overload, HR role conflict, Environmental dynamism Control variables organisational size, organisational sector, gender of the HR manager

			involvement in strategic decision making, such that the relationship between role conflict and HR involvement in strategic decision making will be increasingly negative at higher levels of dynamism.			making role with other HR roles.	
Fenech, R., Baguant, P., & Ivanov, D. (2019). The Changing Role of Human Resource Management in an Era of Digital Transformation. Journal of Management Information and Decision Sciences.	What do HR professionals perceive to be the changing role of Human Resource Management in times of digital transformation?	United Arab Emirates	The theoretical framework of this study is the Resource Based View (RBV).	Qualitative	Five HR managers of large institutions in the UAE. The face-to-face in-depth semi-structured interviews addressed the key areas of HR. The method used to analyse results was thematic analysis with the aim of understand the main themes and sub-themes of the interviews also addressing the links between such themes	Digital transformation is being seen by the participating HR Managers more as serving HR and there is less emphasis on the role of HR in bringing about the digital transformation strategy. In conjunction, companies seem to be using technology more to ease, speed up and improve their current human resource practices and procedures and less to analyse data and plan around such analysis	Digital Transformation strategy, HR Planning, Recruitment and selection, Performance Management, Reward Management, Advantages of technology, Disadvantages, Training and development, Health and Safety, Employee relations, Culture
Shahreki, J., Ganesan, J., Raman, K., Chin, A. L. L., & Chin, T. S. (2019). The effect of human resource information system application on employee satisfaction and turnover intention. Entrepreneurs hip and Sustainability Issues, 7(2), 1462-1479.	this research aims to elucidate the influence of strategic HRIS application on satisfaction of workers and turnover intention		Based on the review of TAM (technology acceptance model): H1. There is a positive relationship between perceived usefulness and ease of use of implemented HRIS. H2. There is a positive relationship between	Mixed Method	The current empirical study was conducted in 2018. The employees were questioned on their beliefs and attitudes towards the ease of use as well as the usefulness of the HRIS, and they were also asked about their level	from a negative viewpoint, any organization has to expect that a novel HRIS introduction can be considered as annoying and threatening by HR workers, which could result in decreased employee satisfaction,	The questionnaire comprised of five major categories namely, ease of use, usefulness, attitude, employee satisfaction, and turnover intention

			perceived ease of use and the attitude towards applying the system. H3. There is a positive relationship between perceived usefulness and the attitude towards applying the system. H4. There is a positive relationship between attitude towards using an implemented HRIS, and employee satisfaction. H5. There is a negative relationship between employee job satisfaction and turnover intention. H6. There is a negative relationship between a person's attitude towards applying an implemented HRIS and turnover intention.		of satisfaction as well as their turnover intentions. In order to support the hypotheses, the developed research model was transferred to a SEM. The PLS-SEM and Smart PLS, were employed in the current study. In order to evaluate the common method variance, the Harman's one-factor test was used	and subsequently increased turnover intentions. From a positive viewpoint, if the introduction of a novel HRIS is viewed in a positive way, employee satisfaction would increase, and consequently turnover intention would decrease. The findings of this study imply that, application of an HRIS, which is perceived positively by HR-personnel, as useful and easy to use, is the prerequisite of job satisfaction within the workplace, in situations where HRIS change is compulsory.	
Heikkilä, J. P., & Smale, A. (2011). The effects of 'language standardization' on the acceptance and use of e-HRM systems in foreign subsidiaries. Journal of World Business, 46(3), 305-313.	the aim of the present study was to analyze the effects of language standardization on the acceptance and use of e-HRM systems in foreign subsidiaries	Europe	UTAUT	Qualitative	The present study can be classified as an interview study with data coming from foreign subsidiary HR managers within two MNCs—one well-known western European MNC (POWERCOM) and one Finnish MNC (TECHNOCOM). The interview data was verbatim transcribed and content analyzed.	In terms of language standardization's effect on effort expectancy, user reactions and actual use will be heavily influenced by their degree of language competence. This will determine their ability to understand instructions and perceptions of the amount of simple versus complex translation required. A	effort expectancy, performance expectancy, social influence, facilitating conditions

						user's perception about the pervasiveness of their multilingual reality is, in turn, likely to affect their opinion about facilitating conditions in the light of language standardization.	
De Alwis, A.. (2010). The impact of electronic human resource management on the role of human resource managers. E a M: Ekonomie a Management. 4. 47-60.	to what extent HR departments have an adopted e-HR to their functions and whether this adoption has influenced the change the role of a HR professional.	Sri Lanka		Qualitative	The population of the study represented all large companies which have more than 1000 employees in and around Colombo, the biggest commercial city in Sri Lanka. The primary technique of data collection was through a descriptive questionnaire. The data was analyzed through percentages of responses that were calculated for each question and presented using pie charts, bar charts and tables	The critical success factors for the implementation of e-HRM in the Sri Lankan context in order of importance are employee attitudes, organizational culture and characteristics, collaboration of HRM and IT, management commitment and individuals' IT skills	To determine the level and types of technologies that are used in HR in Sri Lanka [forms and level of online HR]. To identify how e-HRM has shifted the focus of the role of HR. Drivers of adoption of technology in HRM
Moussa, N. B., & Arbi, R. E. (2020). The impact of Human Resources Information Systems on individual innovation capability in Tunisian companies: The moderating role of affective commitment. European Research on	What is the impact of affective commitment on the relationship between HRIS usage and employee innovation capacity?	Tunis	H1. HRIS usage improves HR employee's innovation capacity. H2. Affective commitment moderates the relationship between HRIS usage and innovation capacity of HR staff.	Mixed Method	The research methodology consists in administering questionnaires for SMEs that had already implemented HRIS. These SMEs are all located in Tunis. To validate our measurement scales, we conducted a principal	an HRIS project in the Tunisian context develops employees' individual innovation capacity. In order to optimize employees' creativity, it is important to highlight the role of affective commitment in the process. A committed employee	Employees' innovation capability HRIS usage (frequency of use) Affective commitment

Management and Business Economics, 26(1), 18–25. doi: 10.1016/j.iedeen.2019.12.001					component analysis (PCA). The construct HRIS usage contains 7items.	brings new creative ideas and improves one's work. The combination of affective commitment and HRIS use further enhances the creativity of the organization.	
Obeidat, S. M. (2016). The link between e-HRM use and HRM effectiveness: An empirical study. Personnel Review.	first, investigate the relationship between e-HRM usage and HRM effectiveness. In particular, it presents the results of an empirical study that seeks to determine whether e-HRM contributes to HRM effectiveness. Second, it examines e-HRM intentional use as possible mediating variable on the relationship between e-HRM determinants and the actual use of the system.	Jordan	the UTAUT model was adopted and applied to explain user behaviour for e-HRM system usage. this study assumes that behavioural intention mediates the relationship between the three determinants and e-HRM use: H1. Behavioural intention mediates the relationship between performance expectancy and the use of e-HRM. H2. Behavioural intention mediates the relationship between effort expectancy and the use of e-HRM. H3. Behavioural intention mediates the relationship between social influence and the use of e-HRM. H4. The use of e-HRM is positively related to the effectiveness of HRM at the policy level.	Mixed Method	Data were collected using a questionnaire administered to a large Telecom organisation, Jordan Telecom Group (JTG). The analytical method used to empirically test the hypotheses proposed is the SEM technique using PLS. This methodology has become particularly relevant in multivariate analysis, and its use has been common in business research	This study showed strong support for the hypothesised relationship between e-HRM usage and HRM effectiveness. the results indicate that e-HRM use positively and significantly influence HRM effectiveness at both levels: policy and practice. This finding demonstrates that the use of e-HRM plays an important role in strengthening the HRM system by enhancing its visibility, improving the consistency of HR messages, and building agreement among employees on principal HR practices which are implemented within the organization. this study found that e-HRM use positively and significantly influence HRM system responsiveness, service quality, and helpfulness	e-HRM determinants (performance expectancy, effort expectancy, social influence, and behavioural intentions) use of e-HRM HRM effectiveness

			H5. The use of e-HRM is positively related to the effectiveness of HRM at the practice level.				
Blom, T., Du Plessis, Y., & Kazeroony, H. (2019). The role of electronic human resource management in diverse workforce efficiency.	How can organisations optimise and enable diversity management through technological change, as opposed to remaining only a process-driven, functional and transactional technological implementation?	South Africa	The human niche and ecological model theories help explain the nature of employees' interactional relationships	Qualitative	The backdrop of this case study was the motor manufacturing industry in South Africa. The research was qualitative, utilising an exploratory case study design and content analysis. Data collection was performed through in-depth semi-structured interviews, focus group sessions, solicited company data, field notes and observations. Comparative content analysis was used to systematically analyse the data transcriptions.	Such disconnect increased feelings of stress, fear and anxiety, limiting individuals from fully engaging with the organization. Technology should be integrated in managing diversity, as a mechanism of streamlining the e-HRM system. If technology is implemented without sensitivity to human diversity, it could result in maladaptive socio-emotional responses and deviations, causing social withdrawal, damage and isolation that diminish the intent of managing diversity.	
Siam, M. R., & Alhaderi, S. M. (2019). The scope of e-HRM and its effectiveness. Polish Journal of Management Studies, 19.	The focal point of the researcher in this study was to determine the potency of e-HRM on HRM and its usage	Malaysia	UTAUT model has been adopted in this study to determine and demonstrate the user behavior for e-HRM system's usage. H1. Behavioral impulsion intercedes the association in the midst of performance expectancy and the consumption of electronic Human Resource Management.	Quantitative	This study is based on quantitative research and it was applied on various technology companies across Malaysia. The data collection procedure was conducted through questionnaires which were given to technology companies across Malaysia. the descriptive analysis of the data and the	the study has suggested that electronic Human Resource Management usage will progressively and substantially effect HRM potency at both policy and practice levels	There were three items in the questionnaire that were based upon performance expectancy, effort expectancy had three items in the questionnaire as well and so were peer pressure and behavioral impulsion. respondents also had to evaluate their actual usage of the e-HRM framework.

			H2. Behavioral impulsion intercedes the association in the midst of effort expectancy and the consumption of electronic Human Resource Management. H3. Behavioral impulsion intercedes the association in the midst of peer pressure and the consumption of electronic Human Resource Management. H4. The usage of electronic Human Resource Management is progressively affiliated to the potency of HRM at the policy level. H5. The usage of electronic Human Resource Management is progressively affiliated to the potency of HRM at the practice level.		bivariate correlations that exist in the midst of the variables have been depicted		
Bondarouk, T., & Ruël, H. (2013). The strategic value of e-HRM: results from an exploratory study in a governmental organization. The International Journal of Human Resource Management, 24(2), 391-414.	The study was further motivated by several questions like what is perceived by organizational members as e-HRM strategic benefits. Who (strategically) benefits from e-HRM? To which extent can strategic benefits of e-HRM be achieved, and under which conditions?	Belgium		Mixed Method	The study was conducted within a Belgian Federal Public Health Service. multiple research methods were applied in this project: document analysis, interviews, and a survey. Throughout the whole project researcher were greatly assisted by the DeBOHRA team, including its former and	The literature presents different schools of thought on this issue, however the results presented in this paper support the school that believes that e-HRM does create value	Usage of e-HRM HRM roles Time spent on HR activities

					current leaders, members, and especially the Organization & Development Officer.		
Bissola, R., & Imperatori, B. (2014). The unexpected side of relational e-HRM: Developing trust in the HR department. Employee Relations, 36(4), 376-397.	The purpose of this paper is to examine whether the organizational redesign opportunities currently offered by web-based technological innovations contribute to rebuilding and strengthening the employee-HR department relationship, rendering personnel management policy criteria more transparent, increasing perceived fairness and thus helping to instil trust in the HR department, albeit in a diverse virtual context.	Italy	H1. The higher the adoption of relational e-HRM practices, the higher the procedural justice that employees perceive. H2. The higher the perceived level of procedural justice, the higher the perceived trust of employees in the HR department. H3. The higher the adoption of relational e-HRM practices, the higher the trust of employees in the HR department. H4. The relationship between the adoption of e-HRM practices and trust in the HR department will be stronger when employees show higher levels of positive attitudes towards technology.	Mixed Method	A wide and structured survey was used to collect data on employees that are part of the Generation Y. The sample was drawn from the alumni of two important northern Italian universities and four high schools. Data was collected via an e-mail survey. As the model is composed of both latent constructs and multiple indicators, authors first performed a confirmatory factor analysis (CFA).	Their analysis supports the basic hypotheses that e-HRM practices increase employee trust in the HR department both directly and through the enhancement of perceived procedural justice while the technology attitude of employees negatively moderates the relationship between e-HRM practices and trust in the HR department (H4).	perceived adoption of relational e-HRM practices, level of technological familiarity, employee trust in the HR department and perceived justice, information on personal job conditions and on the enterprise.
Udekwe, E., & Andre, C. (2017). The use of human resource information systems in two retail organisations in the Western Cape,	The research questions are based on how organisations implement, maintain and use HRISs and if there are differences	Africa		Qualitative	This research was conducted using a qualitative research method. Two retailers, an oil company and a supermarket company,	It is proposed that for successful implementation of HRISs and gaining optimal benefits from the system, retail	

South Africa. SA Journal of Human Resource Management, 15, 7.	between organisations in how they use the system. The aim of the study is to explore what factors affect the effective use of the system in the organisations and how HRISs are utilised by organisations to gain benefits from the system.		were used as case studies (Yin, 2003). The one retailer has many convenience retail outlets throughout South Africa and Africa. The interview guide consisted of 40 semi-structured questions directly related to the research questions. The interviews were transcribed and given back to the interviewees for confirmation of the validity and reliability of the transcriptions. The transcriptions were then coded. From the coding, findings were generated and supported by direct quotes from the interviewees. The findings were categorised and themes developed from the findings	organisations could follow the proposed guidelines: -create a steering committee to guide the implementation process. -determine the goals and objectives of the HRIS -get management involved and committed to the implementation and maintenance of the HRIS -prioritise the implementation of the HRIS to create its importance in the mind of the employees (change management) -make use of all the required functionalities for benefit creation -customise some of its functionalities to eliminate difficulties in operation -conduct a rigorous training programme to equip the users of the system to fully use the system.
Abdeldayem, M.M., Aldulaimi, S.H (2020), Trends and opportunities of artificial intelligence in human resource management: Aspirations for public sector in Bahrain.	the purpose of the study is to draw an understanding of the phenomenon of using AI in human resources, especially in the kingdom of Bahrain	Quantitative	To achieve the purpose of this study, authors review diverse type of literature reviews. For the sake of finding previous studies for the present overview, they utilized electronic	The increased use of technology the information within the organization has radically changed the types of business and skills you need some activities, such as

International Journal of Scientific and Technology Research 9(1), pp. 3867-3871		databases as the best effective way to begin a literature search, in particular, Science Direct, Google Scholar, and Emerald.	training, development and organization, will be increasingly important. The adoption of AI in human resource functions can help in reducing the amount of time HR professionals spend on administrative tasks, reducing the burden of shared service centers and help desks by performing HR transactions and providing answers for routine queries, recruiting and retention and measuring ROI.