The Impact of Human Resource Information Systems within Human Resources Practice

How do human resource information systems affect human resource practice?

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20th July 2021

Acknowledgements

I would like to acknowledge everyone who supported me throughout my academic achievements. First of all, to my husband Jhon and my mother Turia who supported me with love and encouragement. Second, my two boys Jhon Bryan and Samuel for having patience while I was busy with college. Third, Liam who has guided me throughout my life and my academic years. Last but not least, my family and friends for believing in me, but most importantly, Willie who told me to "never give up".

National College of Ireland is full of fantastic staff and lecturers that are always willing to help. Thank you to the HR practitioners who participated in this research and my former classmates who have helped me throughout the three years of college.

Table of Contents

Acknowledgements *1*

List of Tables *4*

Abstract *5*

Declaration *6*

Introduction *7*

Review of Literature *9*

Human Resource Management and Its Introduction to Human Resource Information Systems **9**

Human Resource Information Systems **9**

Importance of a Human Resource Information System **10**

Benefits of HRIS within HR Practice **11**

Implications of HRIS within HR Practice **12**

Future Trends of HRIS and IT Software **13**

The Future Proofing of HR Practice **15**

Literature Review Conclusion **16**

Research Question and Objectives *18*

Hypothesis **18**

Objectives **18**

Methodology *20*

Introduction **20**

Research Philosophy **20**

Paradigm Statement **21**

Research Approach **21**

Research Design and Rationale **22**

Interviews 22

Sample Strategy 23

Data Collection & Analysis **24**

Data Collection 24
Data Analysis 24
Ethical Considerations 25
Limitations 25
Analysis/Findings 27
Research Objectives 27
Main Findings 27
Technological Change in HR Practice 27
Benefits and Limitations of HRIS 28
Future Proofing of HR Practice and HRIS 30
Outcome of the Research 31
Discussion and Conclusion 31
Bibliography 33
Appendices 41
1. Analysis Interview Question 41
2. Interview Consent Form 42
3. Participant Invitation Email 43

List of Tables

Table 1. New Mid to High-Tech and Low-Tech HR Roles ---------- 15

Abstract

The expanding implementation of technology applications in HR practice has validated the requirement for skilled professionals to manage human resource information systems (HRIS) and provides relevant data for an organisation. In larger organisations there are specialists who manage HRIS who are based in the human resource (HR) department merging HR expertise with technological skills. Compared to smaller organisations, the HR department might consist of one to two HR professionals or there may be no HR department in the organisation

This qualitative research concentrates on studying the impact HRIS has on HR practice. Specifically, how does HRIS affect HR practice? The research aims to identify the importance, implications, and benefits of the software to the HR department. Additionally, the research seeks to identify the future proofing of HRIS in the practice. Four semi-structured virtual interviews were conducted with HR professionals who have mixed experiences with different providers of HRIS based within Ireland. The outcomes of the open-ended interview questions consisted in the experience, knowledge and opinion of the HR professionals who participated. These responses were color coded and used to create themes to compare the participants responses.

The themes identified in the findings are technological change in the practice, benefits, and limitations of HRIS, and future proofing of HR practice and HRIS. All four participants have provided similar views that have been contrasted and matched with the literature review. Recommendations for the practice included development of HRIS and more research on the topic would benefit both IT providers of the software and HR professionals who use the software daily.

Declaration

Submission of Thesis and Dissertation

National College of Ireland
Research Students Declaration Form
(Thesis/Author Declaration Form)

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Degree for which thesis is submitted: BA Honors Human Resource Management

Title of Thesis: The Impact of Human Resource Information Systems within Human Resources Practice

Date: 20th July 2021

Material submitted for award

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Signature of research student: Isabel Chaparro Mohamed

Introduction

Armstrong (2006); Beer, Spector, Lawrence, Quin Mills and Walton (1984) describe human resource management (HRM) as an intelligible and strategic management approach to an extremely significant asset of the organisation which are the employees who collectively or individually contribute to the success of the organisation. Human resources (HR) is evolving and becoming partners of the organisation and are not just considered a simple division. HRM has fundamental responsibility over certain aspects of an organisation by managing all its resources with policies, employment legislation, staffing, training and development, compensation and benefits, retention and recruitment (Bratton and Gold, 2017; Gunnigle, Heraty and Morley, 2011). The functionalities that involve the duties of HR practice has to do with human resource information systems (HRIS). The software is vital to the HR practitioner because it has become a virtual filing system, data storage, recruitment cycle system, learning and development, benefits and appraisals management.

The purpose of the research is to identify the impact of HRIS on human resource practice. The reason behind the research question 'how does human resource information systems affect human resource practice?' is related to the expansion of technology in HR practice and how individuals and employments have adapted to them. In the 1940s 'knocker-ups' would wake people to go to work until the alarm clock was invented (Peek, 2016) or in the 21st century self-service tills for customers to scan their own product with little to no assistance need from an individual. HRIS has evolved over time and has diminished time consuming and repetitive duties for the HR practitioner but how has this impacted the practice? Has it had a negative impact or a positive impact? What does the future entail for HR practice? What does it entail for the software? And why/what is causing HRIS to evolve to its full potential? The research aims to identify the full impact of HRIS on HR practice by answering these secondary questions.

The research will test the question to obtain a response by analysing the literature available on HRIS and its importance for the HR department. The literature review will identify potential trends and the future of HRIS as well as the future proofing of HR practice. It will analyse the benefits and the disadvantages of the software and the impact it has on HRM and what this will entail for the job itself. The method used to investigate the research question will be qualitative as the research itself needs to be assessed through observing and interviewing

HR practitioners. This method of research is used by many journal articles and research papers on this topic. The sample size consists of four HR professionals including a HR Generalist, a HR operations specialist, two HR managers and a HR business partner who have been interviewed with a total of 15 questions.

The research aimed to find a constructive response and identify the implications of HRIS to the HR practice. The research findings identified the pros and cons of HRIS within HR practice and its impact. During the process of the research there were limitations, some of which were resolved and others were considered for future research.

Review of Literature

Human Resource Management and Its Introduction to Human Resource Information Systems

A HR practitioner has many duties including performance management, recruitment and selection, learning and development, compensations and benefits, HRIS management, succession planning and HR data and analytics which continue to evolve over time with the use of technology. In the 1940s, HR practitioners kept manual records of employee data and payroll files which still today can be used in smaller organisations (Kavanagh and Johnson, 2015). Technology was evolving in the 1970s as well as HR practice. SAP developed the first enterprise resource planning (EPR) to assist with the storage of corporate data and payroll duties (Zuckerman, 2016) which is still incorporated into HR platforms today. It wasn't until the 1980s that management information systems (MIS) transformed into Human Resource Information System (HRIS). It included benefits and compensation for employees (Kavanagh and Johnson 2015), but research shows that implementing it was a challenge because of the cost associated with the software and the training involved in its use. In the 1990s, Oracle developed a Human Capital Management (HCM) (Bussler and Davis 2002), which incorporates HRIS into the HCM as an analytical tool with other functions such as onboarding, performance management position control, salary forecasting (Wilkinson, Redman and Dundon 2017).

Human Resource Information Systems

Kavanagh and Johnson (2015) and Tannenbaum (1990) define HRIS as a software used to retrieve, obtain, manipulate, analyse, store and allocate information to support HRM and strategic decisions. "*It is not technology, but the art of human and humane management*" (Kavanagh and Johnson 2015, p.41) that challenges the 21st century (Drucker, Dyson, Handy, Saffo and Senge, 1997). This means that technology cannot be managed without the individual, but this is changing with artificial intelligence (AI) which will be discussed in detail in the future trends of HRIS section. The software has multiple features and functions which are compromised with traditional ERP, intranet, internal social networks, integration and provisions for self-service (Armstrong and Taylor, 2020), but also include functions such as

recruitment, core HR, benefits administration, absence management (such as, vacation, sick leave and personal time off), compensation packages, training, workflow, self-service and reporting (Kavanagh and Johnson, 2015; Qadir and Agrawal, 2017).

According to Oracle (2021) providers of HRIS software, there are two pillars in this system. The organisational design is used for hierarchies, roles and functions which also provides data to forecast talent and skills needs from an automated management (Oracle, 2021). Employee data management is identified similar to the customer relationship but with employees, where the employer has all personal data of its employees that generates the right knowledge to improve an employee's goals (Oracle, 2021). Currently most HRIS providers have turned to self-service hubs as employees can manage their own data and keep it up-to-date. The software itself is leased to an organisation with a HR department with different packages tailored to the needs of a particular organisation.

Importance of a Human Resource Information System

HRIS has a significant importance in HR practice as discussed above and can be seen from its evolution in the practice itself. Wright, McMahan, Snell, and Gerhart (1998) estimated that HR practitioners occupy 65% to 75% of their time on transactional duties, 5% to 15% on transformational duties and 15% to 30% on traditional duties. The purpose for HRIS is to decrease the time HR practitioners spend on transactional duties permitting them to spend additional time on transformational and traditional duties. Duc, Siengthai, and Page (2013) suggested that "*trust*" is crucial in the cycle of technology management for HRM efficiency and effectiveness to enhance organisational performance. HR practitioners need the confidence in the technology provided as a useful resource and not as a threat to their role.

HRIS increases competitiveness as successful HRM processes collected data and converts it into useful information to improve deadlines and strategic decision making (Kavanagh and Johnson, 2015). Forecasting for required talent or upskilling employees are kept under control as reports are extracted from the HRIS and converted into useful information. Other reports used to analyse the HR department budget for potential expenses of supplies, recruitment, training and development or reports that identify patterns in employee leave such as annual leave or sick leave (Oracle, 2021). The reports that identify patterns in

individual behaviour are constructive because the organisation can identify stress and de-motivation, when, where and why, and are not necessarily negative factors as it can identify positive ones too. As HRIS evolves or is tailored to HR practice, the more important and powerful it is to the field.

Benefits of HRIS within HR Practice

Operating HRIS provide many advantages (Beckers and Bsat, 2002) such as integrated data bases which provide structural connectivity throughout divisions which gains a speedier process (Fenech, Baguant and Ivanov, 2019; Lengnick-Hall and Lengnick-Hall, 2006). Automation embraces the workflow of HR practitioners by automating repetitive tasks such as onboarding new employees, timesheet processes, performance of appraisal processes or different requests (Qadir and Agrawal, 2017; Qian, 2020). Cloud base technology contains all data in one place (Qaisar *et al*., 2018) creating a virtual organisation that can be accessed globally which generates a reduction in cost (Schmitz, 2012; Threja, 2020) and has benefited the current pandemic situation as employees work from home. The CIPD (2019) mention AI will enrich the job itself rather than be a burden to the practice. Most repetitive HR tasks can be completed by an automated AI system (Qadir and Agrawal, 2017) that shifts HR duties to a strategic approach (Kavanagh and Johnson, 2015) and can provide a competitive advantage that is efficient with no complexity (Mirza, 2019).

According to the CIPD (2007), HRIS improves the quality and speed of information available and reduces administrative duties. They also mention that HRIS provides flexibility on information that supports business planning and improves the service provided to employees. For an organisation to succeed human resource management requires precise and appropriate information on employees and potential candidates through HRIS and avail of all its human resources to achieve such strategic advantage (Kavanagh and Johnson 2015; Macy, 2015). Smith and Kelly (1997); Ulrich (1998) consider an organisation with a strategic advantage will effectively attract, develop and retain the best talented and diverse people. This is because the HRIS stores useful data that is analysed and used to improve both employee goals as well as organisational goals. For example, if an organisation is not selling sufficient products or services due to employees not meeting targets, the HRIS will indicate which employees are skilled in sales or if there is a shortage of talent. HRIS with incorporated AI

functions reduces repetitive tasks, HR practitioners use this time to extract valuable information from the software to strategically manage employee turnover, methods to reduce absenteeism, develop employee commitment and enhance job satisfaction. The software provides a competitive advantage during the recruitment process as it sources the appropriate candidates for employment positions and specifies which department needs upskilling or training (Pfeffer, 1994). This advantage generates a skilled, valuable, and best fit workforce for an organisation based on a needs analysis provided by the data.

Implications of HRIS within HR Practice

AI is taking over certain jobs and this is known as 'career cannibalism' (Mirza, 2019) and some HR practitioners fear advancing technology in their field will erase them creating workplace insecurities and stress (Florkowski, 2019; Threja, 2020). In the field of HR this has not occurred yet. AI eventually would complete the majority of the recruitment cycle in the distant future by altering the role of recruiters and HR administrators (Faliagka, Tsakalidis and Tzimas, 2012; Sheffield, 2019). This is by using automation and AI to screen and match CVs which removes human bias (Hmoud and Laszlo, 2019; Sheffield, 2019), sending automated emails inviting them to interview with a link to a pre-recorded virtual interview or sending possible rejection letters or selecting the candidate. AI is expensive and difficult to develop due to scarcity in the sector and budget. Reilly (2018) mentions the potential AI risks including data protection issues, sexist algorithms, non-replication of human intuition or recognising the subtle behaviours and there is a difficulty in recognising how AI reaches a conclusion.

Dulebohn and Stone (2018) mention that e-HRM which is exclusively based on an internet platform, will maintain the employee relationship instead of a HR professional. People need an element of social contact and its absence can damage the employment relationship as Qian (2020) identified how working from home during the pandemic causes employee burnout and causes mental health issues due to non-physical social contact. There are successful e-HRM software but AI is not yet at its full potential for HRIS to become e-HRM and be 100% beneficial.

Self-service automation systems that shifts workloads reduces potential HR-power and creates stress as HR employees will lack the skills to operate new software (Florkowski, 2019).

Although Kavanagh and Johnson (2015); Hmoud and Laszlo (2019) mention that HRIS will never eradicate HR employees. They identify the redesign of the practice and the potential change to their duties. They also mention that technology is only a tool to facilitate the individual and not substitute the human element of HRM.

Cyber and data security are something to consider when implementing any information technology (IT) system (Dahlbom, Siikanen, Sajasalo and Jarvenpää, 2019; Harris, 2015; Threja, 2020). HR departments will have to adhere to European Union (EU) Data Protection legislation with the implementation of new technologies and ensuring they are safe to store employee personal data (Dahlbom *et al.,* 2019; Harris, 2015). The new legislation is vigilant that individual personal information is stored with complete confidentiality.

Cost can also be a disadvantage for small to medium organisations as the HR department is an expensive department to operate (Kavanagh and Johnson 2015) and some may not have a HR department as they operate with HR consultancy organisations to reduce costs. HRIS is effective if purchased as a whole package, personalised for an organisation, but if an organisation may not be able to afford it, their HR department will not be as efficient as others.

Future Trends of HRIS and IT Software

There are a number of contemporary HR software trends that are renovating HR practices as the use of AI becomes a useful tool to all aspects of HR practice. CIPD (2019); Hmoud and Laszlo (2019) both identified a reduction in repetitive HR administrative tasks, better sourcing and rating applicants in the recruitment cycle and as well precise identification of a talent pipeline (Tata, 2018) for learning and development purposes, which strengthens the employer brand and encourages employees to have more time and less stress complementing their wellbeing.

Cloud software has revolutionised computing platforms with input data stored in the cloud and no need for hardware or internal infrastructure. HR practitioners can now lease the software instead of purchasing it and their organisation can be managed anywhere in the world (Bankar, 2019; Threja, 2020). During the global Covid-19 pandemic remote working has

become crucial to the use of cloud technology. When two dominant technologies such as AI and Cloud merge together it creates a powerful managing and storage tool that processes data efficiently (Webuters, 2017).

HRIS is evolving into e-HRM as the implementation of AI and cloud-based technology is introduced into the HRIS which converts the software into e-HRM. Parry and Tyson (2011) mention that e-HRM is efficient, delivers service, has a strategic orientation, provides management empowerment and is standardised. Marler and Fisher (2013) add that e-HRM provides a reduction in cost through streamline HR operations, it improves effectiveness through better services and it transforms the HRM practice into a HR strategic partner. Ulrich (2019) agrees but mentions that technology is used to deliver administrative efficiency, renovate and upgrade HR practice and deliver information without losing the emotional and social connection. E-HRM has many features, including HRIS, cloud computing, chatbots, stores big data, internal social platform, applications services for smart phones and gamification (Armstrong and Taylor 2020).

Digital Interviews are interviews that can be viewed and recorded globally meaning there could be no need for an in-person interview (Kilgore, 2020; Threja, 2020; Zuckerman, 2016). Recruitment, hiring, onboarding, employee retention and training can transfer to a complete virtual environment's software and have gamifications processes creating entertaining ways to interact with employees (Kilgore, 2020; Schmitz, 2012; Threja, 2020; Zuckerman, 2016). Internal social apps/Employee Experience Platforms for networking within the organisation sharing project information and assisting to priories workload with lists of day-to-day tasks (Bankar, 2019; Kilgore, 2020; Threja, 2020). GPS and Security tracking is an effective way to record remote attendance which can be installed on the firm's app or trucks and cars (Threja, 2020). An example of this is the implementation of an application for careers to clock in and out members'/clients' homes.

Chatbots are used for business-to-consumer purposes to save time and reduce costs, eg. to speak to a customer agent you now chat with a bot that can assist frequently asked questions. The HR practitioner can adopt this strategy to assist their employees to achieve efficiency and time to do other tasks (Thareja, 2020; Zeoli and Billeter, 2019). The chatbot can include frequently asked questions that automatically answer employees. One platform that provides all the tools to meet the needs of an organisation that differ from one to the other and will have

the ability to install the tools necessary to complete the task required for their individual firm (Macy, 2015). Qian (2020) suggests that 69% of individuals of a survey prefer to use chatbots to speak to their managers than face to face.

The Future Proofing of HR Practice

The literature review indicates that HR practice is changing and evolving in many aspects. Martin (2020) believes it's not about transforming HR into a digitalisation but to focus on people analytics. Adapting and implementing new IT software and a technological culture promotes creativity (Gulliford and Parker Dixon, 2019). HR departments will have less stress and more time to focus on other functions of the field which creates a strategic and creative approach, leading to future proofing of the job itself, as maintenance and observation of new software would be needed allowing for HR practitioners to have IT skills for the role.

Meister and Brown (2020) suggest a number of different rolls emerging over the next ten years (see Table 1). Most of the roles identified to be mid to high-tech will need a computer science background as compared to the roles with little tech involvement. In Table 1, the low tech roles focus on coaching, counselling and wellbeing of employees and the external factors of the environment. The low tech roles are persistent on the human aspect of human resources.

There is evidence that recruitment consultants and HR practitioners will not be eradicated, but there will be future proofing of their roles and duties carried out (Hmoud and Laszlo, 2019). Sheffield (2019) also agrees with Hmoud and Laszlo (2019) but includes that organisations can bring in new IT or software, and negotiate with trade unions and employees to change their roles rather than dismiss them. This could focus on a strategic approach to the HR field or a technical aspect or a peoples role. HR practice is changing as a result of better HRIS software allowing the HR professional to be efficient. Organisations need to consider that HR is not a department that deals with employees, but with the right HRIS package the departments generate enormous amounts of valuable data. This data can be used for employee goals but also organisational goals. For example, employee feedback processed through HRIS can generate patterns of issues in company goals, values or culture. Brockbank, Ulrich, Kryscynski and Ulrich (2018) identify that a HR department gathers a great amount of data

which can be used for employees and for the consumer meaning the practice can focus on the organisation's external environment.

Table 1. Meister and Brown (2020) New Mid to High-Tech and Low-Tech HR Roles

Mid to High-Tech within Five Years		**Mid to High-Tech within 10 Years**
Strategic HR Business Continuity Director	Chatbot and Human Facilitator	Genetic Diversity Officer
HR Data Detective	Algorithm Bias Auditor	Human Network Analyst
Human Bias Officer	Climate Change Response Leader	VR Immersion Counsellor
Workplace Environment Architect		
Low-Tech within Five Years		**Low-Tech within 10 Years**
Second Act Coach	Gig Economy Manager	Chief Purpose Planner
University4Life Coordinator	Human-Machine Teaming Manager	Director of Wellbeing
Head of Business Behaviour		
		Distraction Prevention Coach
		Employee Enablement Coach

Literature Review Conclusion

After reviewing research papers, books, websites and journals this section concludes the review of literature of the impact that HRIS has on HR practice isn't necessarily negative. There is certain fear of change as HR professionals will face technological and role changes that will evolve the future of HR practice. Individuals do not like changing their duties of employment as this can create conflict within the HR department. Indeed it is a process of assimilation and fear of the unknown, but new tasks and roles will be created as a result of HR technology. The implementation of new technology or improving is always a bonus.

The literature reviewed identifies further benefits as an agile approach to HR practice considering that HRIS may be expensive to lease, but worth the investment in the long term to

gain a strategic competitive advantage for future planning with accurate data. HRIS is an amazing tool that assists HR professionals in performing daily tasks as well as providing reports that contribute to strategic thinking and forecasting for recruitment and skills needs analysis. It has also been reported that as AI and automation are implemented into HRIS converting it into e-HRM, it had improved wellness and wellbeing of HR practitioners and reduced stress. Overall the literature has proven that HRIS does impact HR practice with different outcomes.

The following section will outline the research hypothesis by explaining the research question and identifying the research objective.

Research Question and Objectives

Hypothesis

Based on the literature reviewed the researcher expects that HRIS has a major impact on HR practice and this impact will be overwhelmingly positive.

Research question: How do HRIS affect HR practice? The purpose of this research is to identify how HRIS (independent variable) affects HR practice (dependent variable). The idea arises from curiosity of evolving technology in HR practice and many questions about the software itself. Technology has changed, evolved and erased many employments and roles but what does HRIS do to HR practice? Other questions arise, for example, as HR data and reports are available at fingertips, will managers interact less with the HR? How will this affect the attitude of HR practitioners toward their profession? Will they struggle with implementation of technology if they identify that technology reduces their status?

The literature review has identified that HRIS is more a benefit to an organisation than a disadvantage, although there is some fear of evolving technology and the change process. The research investigates what the literature has identified which include the functionalities of HRIS, the benefits of the software and its negative outcomes. The literature reviewed has identified change to evolving HR practice and what it implicates for its future. The literature will not answer all of the questions and it will be the use of qualitative evidence that will test the hypothesis of the research question. The desired outcome is to respond to the research question and suggest future research needed if any.

Objectives

The objective of the research question is to identify if HRIS is affecting HR practice either positively or negatively and what experience and observations HR practitioners have in respect to HRIS. As observed from the literature review, technology is evolving from a business to consumer perspective rapidly and the software in the field for HR is developing slowly, not allowing practitioners to work efficiently. This is the reason for the research question to identify why/what is causing HRIS to evolve? How has this impacted the practice? Has it had a negative impact or a positive impact? What does the future entail for HR practice? And what does it entail for the software? The research aims to identify the full impact of HRIS on HR practice by answering the above secondary questions.

The literature review highlights the effectiveness of HRIS and how an organisation may benefit from such software. It also mentions future trends and implementations of the software to support the HR practitioner in their day-to-day tasks. There is a cost associated for purchasing/leasing HRIS software and how in the future it could potentially take over many functions of HR practice.

In the next section the researcher will identify the methods of research and design a strategy to achieve the data required for the analysis.

Methodology

Introduction

In this section, the methods of analyses used to solve the research question will be outlined. There will be an elaboration as to which is an appropriate methods approach, explaining the reasons for using a qualitative analysis and how it will be achieved. Details of the sample questions will be justified in this section and a copy of interview questions are allocated in the Appendix, Section 10.1. The sample size and the reasons for choosing the candidates will be explained. Some limitations that occurred but were overcome will be examined. The aim of the research is to identify the impact of HRIS on HR practice.

Research Philosophy

There are various elements that will establish the research philosophy used for this research. It is a significant element of the research paper as the precise research philosophy will affect the overall analysis of the research question as well as unravelling the valid from the invalid. The way to establish the best research philosophy is to use Saunders, Lewis, and Thornhill (2006) research onion, because it underlines different layers which are followed as a guide. The initiative is to commence at the external layer until the researcher reaches the core and ensures to select the appropriate research design, methodology and strategy (Saunders *et al.,* 2006).

This research uses a mix of constructivist and interpretivist approaches as this study is based on qualitative research. Constructivism holds that individuals compose their perception and knowledge of the world through experiencing and reflecting on experiences (Honebein, 1996). The four HR professionals taking part in this study will share their knowledge and experiences to respond to the research question. Interpretivist paradigms consider reality a multi-layered and complex single phenomenon that has several interpretations (Saunders *et al.,* 2006). As constructivism focuses on the perception of the HR professional, interpretivism is a more realistic approach that will be used to compare different opinions, knowledge, and experiences to the study.

Paradigm Statement

This research paper will use an interpretivist and constructivist approach because HR is based on the management of people and their experiences and values, not objects that can be tested. This research involves the opinions and experiences HR professionals have with HRIS. The technology used in HR practice has improved with consumer surveys which include the opinion and experience of the HR practitioners on the use of HR software. Individuals (HR practitioners) have diverse attitudes, perceptions and experiences towards HRIS, with a collection of diverse thoughts. However, it is expected that the overall response to the research question will be positive.

Research Approach

This research paper uses an inductive reasoning approach because the researcher wants to develop a theory and response to the research question by using a qualitative approach and conducting interviews with HR professionals. They will share their opinions, perceptions, and their experience of HRIS with different suppliers, the impact on the field and the future proofing of HR. Initially the researcher was using a quantitative approach, but while conducting the literature review, serval readings of the same topic had selected a qualitative approach and the researcher acquired knowledge as to why to use this approach. The research philosophy is an interpretivist paradigm which deems best to use qualitative methods. Qualitative research involves evaluating characteristics and difficulties of a given phenomenon (Leedy and Ormrod, 2010). As gathered from the literature review and theory available on HRIS, many authors have used a qualitative research methods (Dahlbom *et al.,* 2019; Fenech *et al.,* 2019; Florkowski, 2019; Qadir and Agrawal, 2017;), as they require information on the use of HRIS on its influences on current and future HRM practice. The purpose of a qualitative approach for this research is to understand the points of view of the HR practitioners and how in their department HRIS has impacted their day-to-day practice or if they identify difficulties with HRIS.

Interpretivist philosophy and inductive reasoning together create a qualitative research approach, acquiring significant and critical data for the research which leads to innovative ideas and processes the researcher was unaware of.

Research Design and Rationale

Interviews

The researcher collects data through semi-structured video interviews. The interviews are appropriate for the current situation as people work and study from home due to a pandemic. This permitted the candidate to communicate their opinions without any limitations. This approach allows for a variety of responses and an awareness into additional and diverse ideas. Interviews remain a common approach to qualitative research as it allows the researcher to participate in effective and supportive listening which allows for the researcher to paraphrase analytically to develop affinity and inspiration for discussion (Baxter & Babbie, 2003). Interview questions are open-ended to encourage candidate spontaneity with prominent response rates as opposed to a multi-option question survey and postal questionnaire.

Conducting interviews allows the researcher to explain the research question and topic using their own vocabulary which provides the interviewee a better comprehension as compared to attaching the explanation to a cover letter with a survey or questionnaire. This will benefit interviewees with reading or writing difficulties and provides the opportunity to explain questions that have been misunderstood or to ask additional questions on an interesting topic. Interviewees provide enhance and valid responses as it is a face-to-face situation (Oppenhein, 1994).

The questions used for the interview can be found in Appendix 1. The 14 questions designed by the researcher are used to acquire an answer to the research question by using different themes. The themes considered for the interview questions arise from the literature review and research conducted on HRIS. The themes aim to identify the integration of HR professionals to HRIS, the benefits and limitations of HRIS, changes in practice and future proofing of HR practice and HRIS. The questions are designed to analyse the background of the interviewee in HR and the experience they have with HRIS. The researcher wants to know the interviewees' opinion and experiences of the benefits and limitations of HRIS and the differences between different HRIS providers. Below is an explanation to the sample strategy.

The interviews were conducted over one month period which began in June 2021 and ended in July 2021, which altered to each interviewee's needs and timetable. The interviews took 30 to 40 minutes and were held using Microsoft Teams. The video calling software allowed for caption collection which developed into a transcript and also allowed to video record the interview so the researcher could have access to the interview. Interviews were recorded with the permission (see Appendix 2) of the interviewees and complete confidentiality has been maintained. Interview questions had to be altered for some interviewees as their experiences was with one HRIS platform.

Sample Strategy

The sampling strategy applied purposive sampling of HRIS to recruit participants that meet a particular criteria required to investigative the methodology of the research. The criteria consisted of HR professionals who have experience using HRIS and are HR managers. The reason to consider HR managers is due to the expertise with HRIS and HR practice. A letter of invitation was composed (see Appendix 3) and sent to interviewees by LinkedIn, a platform used as an online professional resume. On the search for HR managers, a key terms used in the search box are HRIS with industry category HR. The search discovered over 3,000 individuals which had to be reduced by country, Ireland, and the result reduced to 900 individuals who are HRIS specialists and HR managers. Once 20 letters of invitation (Appendix 3) were sent to candidates selected, the researcher received two responses and the search had to be changed and adjusted to HR professionals in general which then led to a further three responses. This allowed the researcher to interview four participants in total.

In the interest of the researcher achieved from the literature reviewed and similar research, the sample size was planned to be 10 to 15 participants but considering the limitations of the study, the pandemic, and the fact that the search for participants had to be done online, four participants took part. Therefore, the sample group consists of four HR professionals including a HR generalist in retail sector, a HR operations specialist in IT sector, a HR manager in the IT sectors and a HR business partner in the private health sector who have been interviewed with a total of 14 questions (see Appendix 10.1). There was no specific industry chosen because HR practice is the same in any industry. Although there is a diverse design of processes, normally the outcome is the same.

Data Collection & Analysis

Data Collection

Data collected to conduct the literature review includes books, articles, journals and websites which have been gathered from the data base provided by National College of Ireland. Four interviews have been completed to respond to the research question. The interview consisted of 14 questions (see Appendix 10.1) which had a relation to the themes in the literature review. There was a variety of HR professionals to achieve an equilibrium of information from junior job roles to senior roles as they all use HRIS for different tasks. There is a wide difference in the answers of the interviewees as they all have different experiences with different HRIS platforms.

Qualitative approach is beneficial in exploratory research, exceptionally with interviews and open-ended questions. Participating in conversation permits the interviewee to provide opinions and views (Rubin and Rubin, 2012). Interviewees can use their own words with more unanticipated, significant, and descriptive responses instead of fixed responses from a survey. This method provides the researcher flexibility to investigate the interviewees response by listening carefully and waiting for the accurate indication to achieve a precise response. The interviews were performed on a one-to-one basis to provide a comfortable atmosphere. The researcher obtained the data through semi-structured interviews which were recorded through Microsoft Teams and then uploaded to Stream where the researcher downloaded a full transcript of the interview. The researcher took handwritten notes during the interview as some of the caption's had not composed correctly. All interviewees provided the researcher with consent to record the meeting. A sample of form is available in Appendix 2.

Data Analysis

The foundation of interpreting the data is considered from the literature reviewed and experience of the interviewees. Qualitative analysis is comprehensive (Creswell, 2013) as it requires understanding literature, identifying themes, and combining categories together. The data collected is opinion-based but the analysis includes the method of interpreting significant statements provided the interviewees on important matters. The open-ended interview questions and analysis provided an implementation of themes within the study. The researcher

used codes to analyse the data from the interviews and categorize them into different themes (Creswell, 2013). The researcher gathered all information from interviews to attain a better understanding and identify any coding opportunities.

Once gathering the data was concluded, the researcher composed the findings of the research through a detailed analysis of each theme and the connection of the themes to the research question. The presentations aim to provide the reader with a collective interpretation of the topic of HRIS as there is little publication on this topic.

Ethical Considerations

All research projects that engage with individuals conducted by the researcher should be completed in an ethical manner which includes respect for the individual participating, beneficence and non-maleficence and justice. The researcher explained about the research project and the ethical considerations to all participants.

Limitations

Most research projects are considered to have limitations and boundaries that need to be altered to fulfill the research project. In this section of the paper the researcher will outline the limitations that emerged during the process.

Initially the idea of in-person interviews required altering to video-based interviews using Microsoft Teams due to the global pandemic that has forced people to work and study from home. The use of open-ended questions led to non-explicit answers and the interviewee moved off topic at times. To avoid going off topic, in some questions the researcher communicated to the interviewee that they answered two questions in one or they were exceeding the time for the interview.

This research is based on HRIS which is a technical software that HR professionals use to fulfil their day-to-day duties making some technical interview questions difficult to respond to as it was not the interviewee's expertise. The researcher should consider providers of HRIS as they could have provided a better understanding of HRIS and its evolution. The questionnaire had to be adjusted following the first interview as some questions where similar and difficult to comprehend. During the search for participants on a social media platform

many of the individuals did not respond to participate in the study which created a small sample size. The researcher had to alter the participants to a broader view of HR professionals and not just HR managers.

Analysis/Findings

Research Objectives

The research objective as stated above is to explore the impact HRIS has on HR practice. During the process of the research, the objective has been met, although with some limitations to the study as stated in the methodology section. The analysis of this research will be explained in the main findings illustrating the thoughts of HR professionals who participated in the study. This section is divided into themes of analysis obtained from the data gathered.

Main Findings

Technological Change in HR Practice

This section of the findings is in relation to question one of the questionnaire (see Appendix 1). Participant 1 (P1) mentions that a particular system she used was extremely basic (personnel management only), but this changed due to regular feedback given to the software provider to improve it with more functions. This participant did not mention that this contributes to HR efficiency.

Participant 2 (P2) describes networking through a social media platform which has been designed for professional and employment use and it has become a robust platform. This platform has become a suitable way to recruit through networking. The social media platform allows professionals to have an online version of a resume and people connect with others, while recruiters headhunt potential candidates.

Participant 3 (P3) indicates that technology has had a positive impact in HR practice. This is because HRIS has evolved at a great speed, but recently she has had to move from an all-inclusive system to a less developed one and has had to hiring an administrator to manually input data on Excel. She felt this was a major setback her. The reason for this change is because although technology in HR is advancing rapidly smaller organisations cannot afford to lease such software.

Participant 4 (P4) was in accordance with all of the above statements from other participants, but she has experience with many HRIS platforms. Furthermore, she noted that the biggest change she has noticed is the integration of functions and departments. Currently working in an IT company, the HRIS is cloud based and user friendly, which has integrated elements of payroll, HRIS, time-management, reporting and HR budget management which links to finance.

All four participants have provided their own view and experience of technological changes in HR practice, and it has differed between participants. In the literature review, Hmoud and Laszlo (2019) recognise a reduction in repetitive HR administrative tasks and enhanced sourcing of candidates which changes the time HR professionals spend on their duties. Software differs from one to the other and all participants have used a range of HRIS brands. The change is real, but small organisations cannot afford an all-inclusive package.

The functions of HRIS packages are different in their approaches but the outcome are similar. In some instances the complexity of the software is not very user friendly meaning the HR professional manually inputs the data into the personnel file. With user-friendly HRIS, data is input into the system as soon as the candidate applies for a position and becomes an employee. P3 and P4 have both used software with elements of payroll functions.

Benefits and Limitations of HRIS

Benefits

P1 describes the reporting function as an excellent tool for monthly headcounts as from this she obtains absences, sick leave, and leavers patterns that identify the reasons for leaving the organisation. She calls HRIS "the one stop shop" were employee personal data is stored, salary reviews and promotions, medical certs and employee contracts are all are accessible. There is a function to allow certain access to managers without beholding all personal details in regulation with GDPR legislation.

P2 says *"life is easier"* with headcount reporting at the "one stop shop", salary and promotional reviews have more accuracy as this issue doesn't prevail because it is automated

from the data in the HRIS. She also mentions that user-friendly software allows more time for the HR professional to update policies and procedures or focus on learning and development.

P3 believes that HRIS is more efficient and accurate due to few occurrences of error. Time efficiency is the biggest benefit that all participants mention. Time spent on printing, scanning, and organizing documents to send by post is now done on email to different departments.

P4 similarly outlines time-saving benefits but adds to P3 that AI has automated emails sent to the correct departments when there is a new hire and the ten minutes spent doing all of that is time spent on other tasks. This participant believes integration is a significant benefit to have because if the HRIS is integrated in with payroll or time management both the HR professional and the payroll assistant do not need to ticket each other when a new employee joins or leaves the organisation and if the employee requires annual leave again both departments have access to the one information on the same system.

Limitations

P1 admits that without a complete HRIS, the accumulation of administration duties is heavy-going but other than that she had no negative observations of HRIS. P2 has had no experience with HRIS with a payroll function and she felt this to be negative. P3 in addition has experience with full packages of HRIS and her negative view is in relation to cost because if the software wasn't so expensive smaller organisations could benefit from having HRIS. She identifies the lack of training when incorporated into an organisation on each individual HRIS software and learning is on demand and usage of the software. P4 has witnessed a colleague with over 20 years' experience in HR having difficulties with new technology incorporated in HRIS and fears the practice might be too technical.

All participants acknowledge that HRIS benefits the practice and the professional. They all recognise more benefits than limitations and have little to no fear of its evolution. On the contrary, all participants expressed a desire for new developments. The literature review complements the views of the participants as Fenech *et al*., (2019); Beckers and Bsat (2002) both address the benefits of possessing integrated systems in HR. Qadir and Agrawal (2017) mention that AI automates repetitive tasks and allocates extra time for HR professionals to focus on other tasks. The literature review points out some more limitations of HRIS than the

participants but cost has been mentioned by Kavanagh and Johnson (2015). There is fear of loss of employment due to AI doing certain tasks, but it is recognised that those jobs will not be completely erased they will be adjusted with different skills such as IT or engineering. P2 has an engineering background and she mentions how useful it is in HR to analyse data metrics.

Future Proofing of HR Practice and HRIS

P1 mentions that HR professionals will have new tools and elements that will not just assist HR department but also management. P2 states that the future drives HR practice to pay attention to data analytics as it provides metrics. These metrics can be decoded to make future forecasts of how long an employee will stay in an organisation. P2 mentioned that there is a strong possibility for employees who stay for nine months will stay for two years. P2 explains that this data can predict the future behaviour of employees and can inform you of the reasons employees leave. She recommends that engineers will be needed to read such data and HR practices is not just soft HR dealing with people, there is a hard element of HR that strategically uses the data to the organisation's advantage.

P3 agrees with this statement as she also identifies the future of HR is not just a soft approach but that it relies on a hard HRM to deliver organisational values, goals and key performance indicators (KPIs). This is achieved with data analytics and she says "the processes and administration is not the interesting part of HR, it is what is found in the data". In addition P3 suggests that smaller organisations will benefit from cloud-based HRIS or e-HRM as these systems should be affordable. She recommends that the providers compromise with smaller organisations and create monthly fees and not tie the organisation into a complex contract.

P4 in addition to other views of the participants doubts that AI will eradicate recruitment specialists or HR administrators as AI can discriminate against potential candidates and there must be an element of control and observation of the automation tasks. The observations of the literature suggest no jobs will be eradicated (Hmoud and Laszlo, 2019), but will be changed (Meister and Brown, 2020). As P3 and P4 identified the importance of data analytics, in the literature review (Brockbank *et al.,* 2018) have the same view of the importance of using the data.

Outcome of the Research

The findings indicate that HRIS impacts HR practice and that it impacts HR professionals. The impact from the analysis is mostly positive, although there is some elements that are negative. The positive impacts in both the analysis and literature review identify that the HR professional can rely on AI to do administrative tasks with supervision. HR practice gains power and recognition in the organisation with the data they gather from the employees as it can be used to modify process and quickly identify errors. The research had certain limitations which were resolved effectively. In-person interviews were adjusted to video interviews and open-ended questions used in the interview allowed the candidate to elaborate on their responses. The research is based on HRIS and the impact on HR practice, but some of the most technical questions the participants did not answer. In this case the researcher has suggested to allow for the participation of HR professionals and suppliers of the software. All participants provided valuable insight to HRIS and HR practice.

Discussion and Conclusion

The research has identified several aspects of the importance of HRIS, some elements of how it impacts the HR department positively and why there is some fear of evolving technology in the sector. It is very clear that HRIS is a complementary tool to HR and may not process data without human input although some research argues that technology has taken over certain jobs and that this could be the same for HR. The research has observed future trends that would benefit HR departments such as chatbots to assist with instant frequently asked questions of employees or employee self-service platforms where they can check their working hours or submit holiday applications or clock in and out. The results of the research support many of the main finings outlined in the literature review.

The results supported the hypothesis that technology did impact positively HR practice and HR professionals, but the future of HRM needs an IT skilled workforce and some experienced HR professionals do not have this background and will have to choose to upskill.

There is a significant growth in the use of IT in the workforce and organisations are obliged to meet demands and incorporate employee-friendly technology due to increasingly competitive markets (Bersin, 2016). HRIS is introduced as a resolution to simplify work and cut data density with enhanced technology (Weeks, 2013). While IT and best practice develops

in HR, the practice continues to alter the organisation as HR professionals possess a unique input to the functions and solutions of challenges facing the practice.

The purpose of the study was to identify the impact HRIS has on HR practice and comprehend the trajectory of the HR professional within different organisations. The results of the interviews indicated that this impact was overwhelmingly positive. These results are in accordance with the main findings outlined in the literature review. However, as there is little research in the field of HRIS and given the limitations of this study, it is recommended that further research be carried out in this area to improve the efficiency of HR practice.

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Appendices

1. Analysis Interview Question

Capstone Interview Questions

The Impact of HRIS on HR Practice

Details

Applicant:

Date and Time:

Interviewer: Isabel Chaparro Mohamed

HRIS Questions

1. In your time as a HR professional could you discuss any technological changes that you might have noticed?
2. Do you have experience with many HR technological systems? If so, which ones and how do they differ?
3. How have new systems helped you as a HR professional?
4. What does your organisation's HRIS package include?
5. Is the HRIS integrated with a payroll (EPR) software and time keeping (annual leave, sick leave etc..)?
6. Could you describe the benefits of HRIS in your experience?
7. Could you describe ways in which these systems might hinder the practice of HR?
8. Do you think HRIS is evolving at a slow pace if so why do you think it is?
9. Do you feel these systems optimise your ability to concentrate on other HR related tasks? If so, which tasks?
10. Are there elements of your role that have changed as a result of HRIS systems?
11. Are there areas of work that would not be strictly within the HR field that have now become a part of HR practice as a result of the integration of these systems?
12. Do you think HR technology reduces your power as a HR professional
13. In your opinion, do you see HRIS transforming HR practice in the future, if so what do you think those changes are?
14. In your opinion, how is HR practice evolving?

2. Interview Consent Form

The Impact of Human Resource Information Systems on Human Resource Practice

Consent to take part in research

- I _____ voluntarily agree to participate in this research study.

- I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any question without any consequences of any kind.

- I understand that I can withdraw permission to use data from my interview within two weeks after the interview, in which case the material will be deleted.

- I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study.

- I understand that participation involves...[*outline briefly in simple terms what participation in your research will involve*].

- I understand that I will not benefit directly from participating in this research.

- I agree to my interview being audio-recorded.

- I understand that all information I provide for this study will be treated confidentially.

- I understand that in any report on the results of this research my identity will remain anonymous. This will be done by changing my name and disguising any details of my interview which may reveal my identity or the identity of people I speak about.

- I understand that disguised extracts from my interview may be quoted in...[*list all forum in which you plan to use the data from the interview: dissertation, conference presentation, published papers etc.*].

- I understand that if I inform the researcher that myself or someone else is at risk of harm they may have to report this to the relevant authorities - they will discuss this with me first but may be required to report with or without my permission.

- I understand that signed consent forms and original audio recordings will be retained in [*specify location, security arrangements and who has access to data*] until [*specific relevant period – for students this will be until the exam board confirms the results of their dissertation*].

- I understand that a transcript of my interview in which all identifying information has been removed will be retained for [*specific relevant period – for students this will be two years from the date of the exam board*].

- I understand that under freedom of information legalisation I am entitled to access the information I have provided at any time while it is in storage as specified above.

- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

Names, degrees, affiliations and contact details of researchers (and academic supervisors when relevant).

Signature of research participant

Signature of participant	Date

Signature of researcher

I believe the participant is giving informed consent to participate in this study

Isabel Chaparro Mohamed	2nd June 2021
Signature of researcher	Date

3. Participant Invitation Email

Dear ,

My name is Isabel and I am an undergraduate student from National College of Ireland researching for my dissertation. My dissertation research focuses on the impact of Human Resource Information Systems (HRIS) on HR practice.

I am looking to identify key individuals who could contribute to my research in this context. As a (fill in position and role industry), your experience, views and thoughts on this subject would be invaluable in providing a broader context to this study.

All interviews will be conducted ensuring that participant anonymity can be protected if required. Due to the current pandemic situation participant interviews will be conducted via a medium and time that would suit you. Alternatively, I can schedule a virtual (face to face) meeting via Microsoft Teams.

On agreement to engage within this process, I will forward a consent form for you to complete prior commencement of the interview.

Many thanks in advance for your time on this matter.

I look forward to your response.

Kind Regards

Isabel Chaparro