

**Aizhan Tursunbayeva**

**HUMAN RESOURCE  
MANAGEMENT  
INFORMATION SYSTEMS  
IN HEALTHCARE**

**Processes  
of development,  
implementation  
and benefits  
realization in complex  
organizations**

**FrancoAngeli**

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# *1. Introduction*

Only a few decades ago the management of Human Resources (HR) was regarded as a purely administrative activity, of relatively little value to organizations (Ulrich, 1997). Today's knowledge-based organizations, however, recognize that their success depends "disproportionally on the performance of their HR" (Lippert & Swiercz, 2005, p. 341). This increased the recognition of the importance of HR function has led to a significant shift in the role of HR professionals (SHRM, 2008). Over the years, their role has changed in focus from performing administrative tasks such as Payroll, to a more strategic focus on HR management (HRM) practices such as employee talent management or organizational development strategies. The application of Information and Communication Technologies (ICT) within organizations in the form of Information Systems (IS) has been critical in supporting this transformation in the role of HR in organizations as they have allowed the automation of administrative tasks, freeing up time for more complex HR activities. Thus, a recent global survey of Human Resource Management Information Systems or Human Resource Information Systems (HRIS) use found that nowadays most organizations worldwide use HRIS not only administratively (e.g. Payroll or Benefits), but also for more strategic purposes. For example, about half of organizations reported using HRIS for their service delivery (e.g. HR Portal), workforce management (e.g. scheduling) and talent management (e.g. performance management) related activities (Harris & Spencer, 2015).

Consultancy firms were the first to investigate whether investment in HRIS implementation projects was justified by the realization of expected benefits (Ruel & Bondarouk, 2008). However, although increasingly sophisticated HRIS are being procured and implemented in numerous organizations worldwide, often at high expense in terms of technology, support and change management, academic scholars became involved in studying HRIS only recently, and so there is a lack of theoretically sound and rigor-

ous empirical studies (Parry & Tyson, 2011). Consequently, there are few systematic evaluations that compare envisaged versus realized benefits of HRIS, especially for different stakeholders, as well as little definite knowledge about the nature of the factors that influence the translation of expected benefits during development and implementation into realized outcomes of HRIS during use (Parry & Tyson, 2011). However, understanding whether and how the perceptions of HRIS benefits vary according to the type of stakeholder is important, for example, for an understanding of what kinds of expected benefits motivate different stakeholders to accept HRIS initiatives, and what kind of benefits and for whom these initiatives actually achieve.

Moreover, there is a lack of knowledge of HRIS in the field of health in general (Engbersen, 2010), as health research has prioritized the evaluation of IS for clinical over administrative functions (Kivinen & Lammintakanen, 2013). Nevertheless, these are essential enabling eHealth technologies for the business of healthcare, and underpin much of the drive towards greater health care quality and efficiency across the world (Thouin & Bardhan, 2009). HRIS in a healthcare context is particularly interesting to study due to the complexity of its governance, including issues regarding technological, and workforce structures (Bondarouk, Ruel, & van der Heijden, 2009; Evers, 2009); and its comparability with IS implementation in other complex public sector organizations (e.g. top-down implementation approaches, reactive attitudes towards innovation (Troshani, Jerram, & Hill, 2011) including “diffusion difficulties” (McGrath & Zell, 2001)).

Finally, healthcare systems, particularly those in the public sector, are highly complex organizational settings characterized by multiple institutional demands (pressures), which vie for dominance and shape the development, implementation and use of IS innovations (Currie & Guah, 2007; Sherer, Meyerhoefer, & Peng, 2016). Healthcare settings therefore also provide fertile ground for investigating the processes through which institutional demands influence IS innovation.

## **1.1 Aims and benefits of this research**

Building on previous research on the expected and realized benefits from HRIS, this research aimed initially to analyze the expected and realized benefits from HRIS projects for different stakeholders in different contexts, as well as to empirically examine whether and how socio-technical factors of influence identified in the systematic review (Tursunbayeva, Bunduchi, Franco, & Pagliari, 2016) shaped these projects.

The following specific research questions were developed in order to achieve the aforementioned research objectives:

- *RQ1: What are the expected benefits, actual outcomes and unintended consequences of introducing a new technological innovation – HRIS?*
- *RQ2: What are the expected benefits and outcomes for diverse HRIS project stakeholders and/or user groups?*
- *RQ3: What are the factors that influence the transformation of expected HRIS benefits into realized benefits?*

However, as the results of this analysis showed a difference between expected benefits as opposed to realized outcomes during the implementation and early assimilation of HRIS in the studied projects, this research also aimed to explore the processes of HRIS development and implementation in both contexts that led to this outcome. Here I used institutional theory that conceptualizes organizational behavior as the product of the ideas, values and beliefs embedded in the institutional environments in which organizations operate, and this helped me to explore the processes through which institutional pressures shape the development and implementation of an ICT innovation within an organizational setting, particularly by examining such influences over time.

The following additional research question was posed to achieve this objective:

- *RQ4: How do institutional pressures shape the development and implementation of an ICT innovation within an organization's setting over time?*

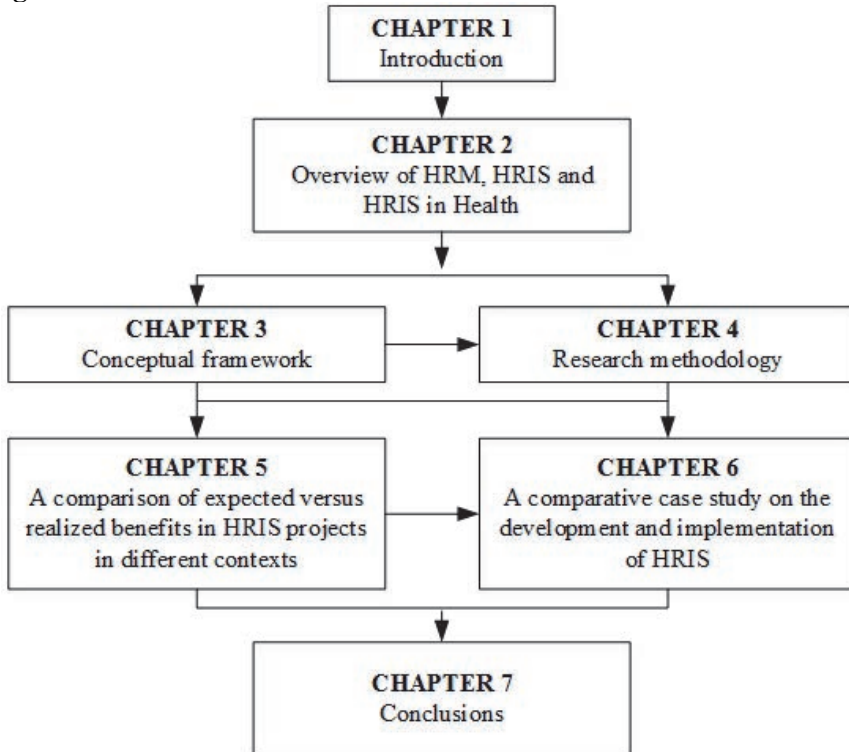
This research aimed to contribute both to the research and practice of HRIS by:

- Addressing an important gap in the interdisciplinary and international literature on the expected and realized benefits from HRIS for different stakeholders, as well as the processes of HRIS development and implementation that affect their outcomes.
- Providing guidance to HRIS project stakeholders on how to smooth the often challenging implementation processes, in order to ensure that these systems can yield the benefits they promise.

## **1.2 Book structure**

This book consists of 7 chapters. The complete book structure is presented in Figure 1.

**Figure 1. Book structure**



Chapter 1 is an introduction and chapter 2 offers a brief synopsis of the evolution of HRM and the role that HRIS has played in it. It also introduces the healthcare context which was chosen for this study and provides an overview of the existing research on HRIS in health, what gaps there are in it, as well as discussing pertinent findings from the systematic literature review on HRIS in health that was conducted to inform this research (Tursunbayeva et al., 2016).

Chapter 3 introduces the conceptual (theoretical) framework for this study. It first describes generic frameworks for studying benefits from HRIS before moving on to the question of specific benefits from HRIS in health, and existing frameworks for studying factors shaping IS innovations. Moreover, it also describes three concepts derived from institutional theory used in this research (institutional pressures, organizing vision and strategic responses), and provides an overview of how institutional theory has been used in IS research so far. Thus, both chapter 2 and 3 reveal gaps in the current literature and consequently justify the research questions identified.

Chapter 4 describes the research methodology used in this study. It starts from specifying how the research design and cases to study were chosen, as well as justifying the approaches to the data collection and analysis that have been adopted. Finally, it describes data sources used in this study.

Chapter 5 presents findings flowing from a comparison of the expected versus the realized benefits in the national (Country 1) and regional (Country 2) case studies, while chapter 6 presents the results of the comparative analysis of the development and implementation of HRIS in the selected health organizations.

Chapter 7 discusses the significance of the findings of this research and the contribution it makes to the academic literature and to potential future practice. Finally it identifies the limitations of the research undertaken, and on this basis suggests areas for future research.





## 2. *Overview of HRM, HRIS and HRIS in healthcare*

### 2.1 **HRM: Concepts and definitions**

Organizations use three main types of resources – physical, organizational and human – in order to maximize their competitive advantage and achieve desired profitability (Thite, Kavanagh, & Johnson, 2009). Many scholars have highlighted the importance that HR holds among these three (e.g. Greer, 1995).

Since HR are so important for organizations, management of HR has also been recognized as a critical priority. Scholars have provided various definitions of HRM. For example, Schuler and Jackson (1989) describe HRM practices as “a system that attracts, develops, motivates, and retains employees to ensure the effective implementation and the survival of the organization and its members”, while Delery and Doty (1996) conceptualized it “as a set of internally consistent policies and practices designed and implemented to ensure that a firm’s human capital contribute to the achievement of its business objectives”. A more recent definition by Minbaeva (2005) refer to HRM practices “as a set of practices used by organization to manage human resources through facilitating the development of competencies that are firm specific, produce complex social relations and generate organizational knowledge to sustain competitive advantage”. In this book, I follow one of the most recent HRM definitions by Tan and Nasurdin (2011), whereby HRM amounts to “specific practices, formal policies, and philosophies that are designed to attract, develop, motivate, and retain employees who ensure the effective functioning and survival of the organization”.

HR managers pursue many organizational roles. Thus, for example, previous research has summarized contemporary HRM practices into sixteen operational (i.e. information request handling, workforce administration, time and attendance, payroll, health and safety and international mobility), support (i.e. manage HR systems and documentation, HR reporting,

HR organizational effectiveness, and vendor management) and value (i.e. recruit and staff, manage performance, plan successor, learn and develop, reward and recognize, and manage exit) processes that take their origin from four strategic objectives (i.e. HR strategy, Organizational development, Workforce planning and Labor relations) (Foster, 2009).

Today efficient and effective HRM practices and policies also include the use of up-to-date and accurate employee data, which can be collected, maintained and reported by HRIS. Thus, HRIS plays a very important role in the management of organizational HR. However, as the role of HR managers has changed over time, so has the role HRIS plays in supporting it. The next section specifies the definition of HRIS used in this book, followed by a high-level overview of the evolution of HRM and the role that HRIS has had in it.

## **2.2 HRIS: Concepts and definitions**

A wide variety of terminologies and definitions have been used in the literature to describe ICT aimed at supporting HRM (Strohmeier, 2007). A consequence of this is a lack of consistency and agreement in this area (Bondarouk & Ruel, 2009). Such systems have been explicitly referred to as:

- HRIS<sup>1</sup> – “the composite of databases, computer applications, and hardware and software necessary to collect/record, store, manage, deliver, present, and manipulate data for human resources” (Broderick & Boudreau, 1991, p. 17) or the “system used to acquire, store, manipulate, analyse, retrieve, and distribute information regarding an organization’s human resources. An HRIS is not simply computer hardware and associated HR-related software. Although an HRIS includes hardware and software, it also includes people, forms, policies and procedures, and data” (Kavanagh, Gueutal, & Tannenbaum, 1990, p. 29; Thite et al., 2009, p. 17).
- Electronic human resource or E-HR system – “created real-time, information-based, self-service, interactive work environment” (Lengnick-Hall & Moritz, 2003, p. 365);
- Electronic HRM or e-HRM system – “a way of implementing HR strategies, policies, and practices in organizations through conscious and directed support of and/or with the full use of web-technology-based channels” (Ruel & Bondarouk, 2004, p. 365-366); or
- Virtual HRM – “technological mediated networks of different internal

<sup>1</sup> Human Resource Management Information Systems and Human Resource Information Systems terms are used in this book interchangeably.

and external actors providing the firm with the HR services needed without the further existence of a conventional HR department” (Strohmeier, 2007, p. 20).

These terms can be used as to refer to standalone IS for HR, as for IS embedded within enterprise resource planning (ERP) systems (which is often the case in complex organizations) (Escobar-Pérez, Escobar-Rodríguez, & Monge-Lozano, 2010).

Due to the interdisciplinary nature of this research, in this book I refer to any ICT aimed at supporting the administration, management and development practices of HR as HRIS.

## **2.3 HRM and HRIS: origins and developments**

HRM is a relatively new term, which only came into common use a few decades ago. A range of other terms have historically been used to describe HRM, reflecting both the role of HR managers and the economic and social environments in which they operated. For example, at the beginning of the 20th century HR professionals were often called welfare workers, while by the middle of the 20th century they were typically referred to as personnel managers.

The penetration of ICT into HRM has made a significant contribution to the development of the field. The next section will review in detail the evolution of HRM and the role that HRIS played in it.

### **2.3.1 Beginning of 20<sup>th</sup> century (Pre-post World War I)**

There were two major triggers for the birth of HRM departments within organizations. First was the appearance of industrial welfare work in the 1880s, when some organizations needed a new staff position to regulate and maintain records on employees’ hours of work, health and safety issues and payroll (Thite et al., 2009). Thus in 1916 it became obligatory in many US factories to have a welfare worker (Kaufman, 2008). Second there was the establishment of separate employment offices that aimed to centralize and standardize such personnel administration functions as hiring or payroll (Kaufman, 2008). Thus Farnham (1921) mentioned the existence of personnel administration staff in large-sized companies in both Germany and France already at the beginning of the 19th century (as cited in Kaufman, 2008).

In the meantime, supporting infrastructure began to emerge in addition to these practical developments in major organizations, mostly in Europe,

the US and Japan, in the form of the professional associations (e.g. the National Personnel Association), consulting firms (e.g. Industrial Relations Counsellors, Inc.), academic and industry journals (e.g. The Journal of Personnel Research), international conferences (e.g. the International Industrial Welfare (Personnel) Congress organized in the Netherlands in 1925) as well as academic research and teaching programs (e.g. the Industrial Relations Section launched in 1922 by Princeton University) (Kaufman, 2008).

Many contemporary scholars affirm the strategic importance of HRM functions (Ulrich, 1997). However, the first reference to the strategic mission of HRM was actually made back in 1920s. Thus, for example, in 1923 Harvard Business Review published an article about “Industrial Relations Management” (Hotchkiss, 1923) which stated that “When, however, we pass from tactics to the question of major strategy, industrial relations management is essentially functional rather than departmental. ... [It] deals with a subject matter which pervades all departments. ... [and] must to succeed exercise an integrating, not a segregating, force on the business as a whole” (as cited in Kaufman, 2008, p. 5).

At this time in the history, these early HRM functions were keeping employee information in the form of paper records, as computer technologies were still not available (Thite et al., 2009).

### **2.3.2 Middle of 20<sup>th</sup> century (Pre-post World War II)**

During the Second World War managers began to realize that employee motivation and productivity has a direct impact on organizational financial performance, and that employees are motivated not only by financial benefits, but also by diverse socio-psychological factors (Thite et al., 2009). Moreover, in that period the US government also introduced several employment laws that caused the creation of labor unions (Thite et al., 2009). Thus, HRM functions were established in most of the medium-large-size organizations, and the focus of HRM function shifted from only industrial welfare, staff recruitment and selection to also include motivation and discipline, health and safety issues, as well as consultations regarding pay and collective issues (Kaufman, 2008). These changes were reflected in the volume and types of employee information that HRM function had to collect, store and report to the government. This was also about the time that the first computer technologies emerged, and were adopted by lead HRM functions from the US defence industry (e.g. US Air Force) to support employee data recording and retrieval, and the first HRM practice – payroll – was automated (Thite et al., 2009).

### **2.3.3 End of 20<sup>th</sup> century**

In this period the US government passed a great deal of employment related legislation such as employment taxes or stipulations regarding employee retirement benefits (Thite et al., 2009). This growing volume of legislative requirements affected the amount of administrative work associated with statutory reporting of HRM activities, and required HRM functions to provide up-to-date and reliable data on their employees. Moreover, competition between companies increased during this period, and many international organizations aimed to cut costs while also improving operational efficiency and productivity. This generated a real need for automation of employee data gathering, analysis and retrieval, and forced HRM professionals to adopt ICT to automate their manual work in order to be able to focus on more complex practices (Thite et al., 2009). This is the point at which diverse HRIS vendors began to emerge (Thite et al., 2009).

In this period, the recognition also started to grow within organizations that “people are an asset and not a cost”, influenced by a growing acknowledgement that organizational success depends “disproportionally on the performance of their HR” (Lippert & Swiercz, 2005, p. 341).

### **2.3.4 Millennium and contemporary period**

The last couple of decades witnessed both major technological developments such as the widespread adoption of the Internet, and the creation of web-based services, as well as a clear transformation of the HRM field. For example, the amount of literature related to strategic aspects of HRM has expanded significantly, and the number of student enrolments in HRM related programs has shot up (Kaufman, 2008).

Thus, if only a few decades ago the management of HR was regarded as a purely administrative activity of little value to organizations (Ulrich, 1997), current recognition of the importance of HR function has led to a significant shift in the role of HR professionals (SHRM, 2008) from performing administrative tasks such as Payroll, to a more strategic focus on HRM practices such as employee talent management or organizational development strategies.

HRIS were identified as a “key enabler” of Strategic HRM (Haines & Lafleur, 2008), as they allowed the automation of administrative tasks and provided time for more complex HRM activities (Barrett & Oborn, 2013) such as talent management or staff training and development programs (Dery, Hall, Wailes, & Wiblen, 2013). Moreover, previous research has