ELECTRONIC HUMAN RESOURCES MANAGEMENT (E-HRM) ADOPTION STUDIES: PAST AND FUTURE RESEARCH

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ABSTRACT

Electronic human resource management (e-HRM) systems become more widely used by profit and non-profit organizations. However, the field currently lacks sound theoretical frameworks that can be useful in addressing a key issue concerning the implementation of e-HRM systems, in particular to obtain a better understanding of the factors influencing the adoption of e-HRM systems. The objective of this paper is to provide a foundation towards the development of a theoretical framework for the implementation of e-HRM systems and develop a conceptual model that would reflect the nature of e-HRM systems’ adoption through systematic literature review. Adopting Crossan and Apaydin’s procedure of systematic review, this paper investigated 21 empirical papers of electronics human resources management, then categorized them into 4 characteristics which influence the adoption; System and technology characteristics; Organizational characteristics; User/individual characteristics, and Environmental and contextual characteristics. Finally, the e-HRM adoption research framework is drawn and based on the framework; avenues for future research are discussed.

Keywords: e-HRM, technology adoption, Technology Acceptance Model

ABSTRAK


Kata kunci: e-HRM, adopsi teknologi, model penerimaan teknologi

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1. Introduction

Information systems (IS) are increasingly influencing human resource management (HRM) practices in organizations. The rapid development of the Internet and information technology during the last decade has enhanced the adoption of electronic Human Resource Management (hereafter called e-HRM).

Marler and Fisher (2013) argued that e-HRM literature is still at an early stage when compared to either the general IT/IS literature or strategy literature, because early e-HRM studies begin appearing in international publication around 1995 (Strohmeier, 2007).

While some organizations implement the e-HRM technology as a means of facilitating the HRM practices and increased research interest on e-HRM, the field currently lacks sound theoretical frameworks that can be useful in addressing a key issue concerning the implementation of e-HRM systems, in particular to obtain a better understanding of the factors influencing the adoption of e-HRM systems. Since academic interest and research in e-HRM adoption have increased, the review of literature review is needed to identify the e-HRM adoption research trend as well as to find the literature gaps that will be valuable for future research in order to enhance the understanding of e-HRM adoption.

Given the widespread use of e-HRM systems and the potential advantages and disadvantages associated with them, the main purpose of the present article is to provide a review of the factors that affect e-HRM acceptance and adoption. IS adoption and acceptance, in this case e-HRM systems, is not merely about the technology and its advanced features, but some other factors also determine the IS adoption within organizations. From the theoretical perspective, the review may offer directions for e-HRM research by explaining the factors such as system and technology, organizational characteristics, users and individuals’ characteristics as well as environmental and contextual factors which influence e-HRM adoption. From managerial and practitioners perspectives, the review also provides useful insights on how e-HRM may be implemented within organizations, where multi and holistic factors are behind the IS adoption.

This literature review employs a research question: what factors do influence e-HRM adoption in organizations and how those factors are categorized according to four main groups or characteristic; system and technology, organizational, users/individual as well as environmental and contextual factors? The review covered all technology application and implementation which related to the Human Resource Management practices such as e-recruitment, e-selection, and e-training. Thus, the objective of this paper is to provide a foundation towards the development of a theoretical framework for the implementation of e-HRM systems and develop a conceptual model that would reflect nature of e-HRM systems’ acceptance and adoption.

This paper will be presented as follows. In the next section, the theoretical underpinning and the methodology that is used to compile empirical research from two popular academic databases through systematic literature review are explained. Then, following that, the systematic literature review result will be presented and followed by the discussion and the implication for the practice and future research.

2. Literature Review

Electronic Human Resource Management is defined as the planning, implementation, and application of
information technology for both networking and supporting at least two individual or collective actors in their shared performing of HR activities (Strohmeier, 2007).

E-HRM can be used for some HR-related activities. It can be used for transactional activities (for instance those that involve day-to-day transactions and record keeping); traditional HRM activities for example recruitment, selection, training, compensation and performance management; and transformational activities that add value to the organization, and may be used to manage HR across the whole employee lifecycle (Parry, 2011).

From the theoretical perspective, e-HRM is introduced by organizations to improve efficiency and service delivery, to increase the strategic orientation of the HR function, to improve standardization and organizational image and to empower managers. E-HRM outcomes are mainly related to efficiency, service delivery and standardization, relational outcomes and potential improvements in organizational image (Parry & Tyson, 2011).

As electronic human resource management (e-HRM) systems become more widely used, previous research suggested that e-HRM contributes to increase the value of HR function (e.g. Parry, 2011; Wahyudi & Park, 2014) and organizational innovation (Lin, 2011). Nevertheless, the diverse positive consequences of e-HRM implementation within organizations are not taken for granted. It means that e-HRM is just a technology, which has other factors to be successfully adopted and implemented.

Additionally, from the Human Resource practices (e.g. recruitment, selection, performance appraisal), changing from manual/traditional way to electronic processing requires good understanding on how the e-HRM adoption and implementation may effectively work. People may be afraid of the privacy risks invasion when they submit their job application through the e-recruitment (Harris et al., 2003). Further, in organizational level, although the e-HRM may reduce cost and speeding up processes (Strohmeier, 2007), the e-HRM technology requires installation, maintenance and changes costs which make the organization to think about cost and benefits of the e-HRM system.

3. Research Method

As explained in the previous part, a systematic literature review is conducted to find and select relevant papers for this review. This research adopted the procedure of Crossan and Apaydin (2010) when they conducted a systematic literature review on organizational innovation. The step by step, planning, execution and reporting, that have been taken in the systematic literature review process will be described below.

3.1 Planning phase

Two main activities in the planning phase are defining the objectives of the research and identified the key data source. Firstly, the objective of the literature review is to identify and draw the framework of the all relevant factors influencing e-HRM adoption in organizations. In addition, two databases were used, ISI Web of Knowledge’s Social Sciences Citation Index (SSCI) and Business Source Premier, to generate all the relevant literature from 1995 to 2014.

3.2 Execution phase

The execution phase includes the collection and organization of the data as well as the data processing and analysis. The process must identify initial selection criteria such as keyword and search terms, and classify the research papers/publications. The first step in the review process was an extensive search
for scholarly peer-reviewed journal articles through two search engines: EBSCO Business Source Premier, ISI Web of Knowledge. This research used those two databases to enlarge the number of available article and increase the probability that the most relevant papers are included. The research only focused on papers which were published between 1995 and 2014.

The research used several keywords to find the relevant research papers. E-HRM researchers use different e-HRM terminologies in their research which generally refer to information system-supported way of performing HR policies and practices (Strohmeier, 2007). After exploring the e-HRM terminologies used by e-HRM researchers, then they were used as keywords. Specifically, by multi-searching in those two databases, the keywords used were the combinations of e-HRM and the synonyms/interchangeable terms (e-selection, e-recruitment, employee self-service systems, e-compensation, e-benefits, HR portal, virtual HR, web-based HR, e-learning HR, and Human Resources Information System), derivatives of adoption, derivatives of acceptance, and derivatives of diffusion.

The process resulted in an initial pool of 104 papers; 39 papers from EBSCO Business Source Premier and 65 papers from ISI Web of Knowledge. Based on that initial pool, all of those papers were listed in a spreadsheet and then sorted it out to find the duplicates papers, where the title is the same. This resulted in 48 papers must be dropped; 13 papers from EBSCO Business Source Premier and 35 papers from ISI Web of Knowledge, and therefore the rest of the paper was 56 articles.

Because those papers are from two different databases, it is still possible to have the duplicate problem. Thus, the final screening was combining all of those papers and deleting the duplicates as well as irrelevant papers, for instance the papers are not related to e-HRM adoption research such as e-learning adoption and acceptance in medical school. Also, to keep the task manageable and to provide some guarantee of quality research, only studies published in refereed international journals and only articles that have been conducted empirical research were considered. Work published in books, research notes, open journals, conference or working papers was excluded and judged as irrelevant papers. This resulted in 35 papers must be eliminated, and therefore, there were 21 papers to be reviewed.

3.3 Reporting Phase

After reading these articles, a summary of each paper was compiled in a table (see Appendix 2), including the research problem, the main variables/hypotheses, the theoretical lenses/underpinning, research methods, and the findings/conclusion. The next section will synthesize and discuss the findings of the literature review.

4. Results and Discussion

E-HRM systems have practical values in organizations. However, many e-HRM studies are still lack of theoretical consideration and little is reported in the academic literature the adoption of such system (Tansley & Watson, 2000). Therefore, the literature review is purposefully to find an explanation of the various, multi-dimensional factors that contribute to e-HRM adoption in the organization. Before explaining that, the various theoretical underpinning and methods used in the 21 research papers will be discussed in the following section.

4.1 Theoretical Underpinning in e-HRM adoption research

Most of the e-HRM adoption
research use the theory proposed by Davis, the Technology Acceptance Model. Seven research papers use the Technology Acceptance Model as the theoretical lens. It is not a surprising result, because Technology Acceptance Model is the common and popular theory in e-HRM adoption research. Perceived usefulness and perceived ease of use have been known as the important variables to the success of new technology adoption and lack of user acceptance could impede the IS adoption (Davis, 1989).

Several theories also have been used in the e-HRM adoption research, for instance Theory of Planned Behavior (TPB), Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003), signaling theory, change management theory, and contingency theory. Surprisingly, 10 research papers do not mention specifically the theoretical theory they used. Each theory in the e-HRM adoption research based on the systematic literature review will be discussed below.

Theory of Planned Behavior (TPB) is one of competing models in Information Technology acceptance. Specifically, Theory of Planned Behavior extends the Theory of Reason Action (TRA) to predict human behavior and then it is used to predict individual acceptance of Information System (IS). While TRA only has 2 main constructs, attitude toward behavior and subjective norm, the Theory of Planned Behavior adds a construct, perceived behavioral control, as an additional determinant of intention and behavior (Venkatesh et al., 2003). Lin (2010) applies the Theory of Planned Behavior to investigate the influence of job seeker attitude, subjective norm, and perceived behavioral control on the intention to use job search website.

Although the Technology Acceptance Model is popular in Information System research, the theory has been criticized (Legris et al., 2003). Further, Unified theory of acceptance and use of technology (UTAUT) was developed to distinguish between intention to use and actual usage (Venkatesh et al., 2003). They argue that intention to use will affect the actual use of IS acceptance. This theory has been applied to investigate the effects of language standardization on the acceptance and actual use of e-HRM systems (Heikkila & Smale, 2011).

In addition, TAM has to be integrated into a broader model and related to human and social change processes (Legris et al., 2003). Thus, several e-HRM adoption research in this systematic review have integrated the Technology Acceptance Model with another theory, such as signaling theory, contingency theory and change management theory. Kashi and Zheng (2013) integrate the Technology of Acceptance Model with signaling theory, in particular to explore the potential effects of visual characteristics and users’ impression of recruitment website.

Wahyudi and Park’s (2013) also integrate the Technology Acceptance Model with contingency theory. The contingency theory highlights that outcome variables depend on best fit and contextual factors. In their research, Wahyudi and Park suggest that the leadership style in the organizations as the contextual factor in the e-HRM adoption.

Change management theory has been integrated with the Technology Acceptance Model to explore the Human Resources (HR) portal implementation (Ruta, 2005). The implementation of HR portal is very complex process. Before HR portal implementation, employees interact with person, but after the HR implementation, employees must become familiar with the information technology and accept interaction with computers. The change process must be well...
managed by the organizations so that the employees accept the HR portal and organizational change smoothly run.

To conclude, mostly the type of theories used in adoption studies is in one-sided way which tends to the positivism approach. In addition, the researchers used a single theory to explore the e-HRM adoption, although there are few studies which combine two kinds of theories, such as contingency theory and change management theory.

4.2. Research Methodology in e-HRM adoption research

E-HRM research employs quantitative and qualitative approach as the research methodology. Specifically, e-HRM adoption researchers use a wide range of research methodology, such as survey research, exploratory case study, action research, and mixed methods. Each of the research methodology will be explained below.

Survey research is the most popular research methodology in the e-HRM adoption research. In this systematic literature review, 13 research papers employ survey research. The e-HRM researchers mostly employ this kind of research methodology because the theoretical foundation of e-HRM is based on psychology discipline, such as the Theory of Rational Action, the Theory of Planned Behavior, the Technology Acceptance Model or UTAUT. Using the survey research, e-HRM researchers assess to find any relationships and test any hypotheses between independent variables, such as perceived usefulness, perceived ease of use, and dependent variables, such as intention to use and actual use. Furthermore, the e-HRM researchers also develop more complex model in order to test mediating variables or mediator variables which influence the relationship between independent variables and dependent variables.

From the qualitative research approach, e-HRM researchers also employ the case study and action research approach as the research method. Usually, they conduct their research in an organization or more; then they interviewed the employees and people who use the e-HRM system. Further, they also used secondary data to support the data analysis (e.g. Panayotopoulou et al., 2010). Finally, the data are analyzed and compared through within-case analysis and cross-case analysis. In addition, few e-HRM researchers employ mixed method. Generally, they conduct survey research using questionnaire and then followed focus group discussion or interview (e.g. Panayotopoulou et al., 2007).

In conclusion, though there were few studies employed qualitative research, most of the research method in e-HRM adoption used survey research. The survey research is the appropriate one. The Technology Acceptance Model, Theory of Planned Behavior (TPB), Unified Theory of Acceptance and Use of Technology (UTAUT) are basically coming from psychology to find a single truth by hypothesizing and testing the relationship between independent and dependent variables.

4.3 E-HRM adoption research framework

The systematic literature review has yielded an important framework of e-HRM adoption research. After reading all the research articles and making a summary, the analysis has identified several main factors which influence e-HRM adoption and the outcomes (expected and actual ones) of e-HRM implementation (Appendix 1). The factor influencing e-HRM adoption has been synthesized and grouped based on the theoretical underpinning and important variables/constructs.
4.4 Discussion

The main purpose of the systematic literature review is to identify the factor influencing e-HRM adoption. The review has resulted in a framework which consists of four groups which influence e-HRM adoption: system and technology, organizational, users/individuals and environmental and contextual factors. This e-HRM framework sits in the position that system and technology itself is not enough. There are others factors that will influence e-HRM be accepted and adopted. Any issues and opportunities in each factor will be discussed below.

4.4.1 System and Technology Characteristics

System and technology emphasize on the fact that technology characteristics can affect the IS adoption (Chakrabortya & Mansor, 2013). E-HRM is basically a computerized system that helps the information processes in human resources practices, such as selection and recruitment processes, training, or performance appraisal. Thus, the e-HRM system and technology must ensure the reliability of information which flows within and outside organizations. Based on this systematic literature review, various numbers of system and technological factors contribute in influencing e-HRM adoption. The system and technological factors are external variables which ultimately influence on internal beliefs, attitudes, intentions, and usage.

Technological Acceptance Model is the basic theoretical foundation for system and technological characteristics. The model explains that the system quality, perceived ease of use and perceived usefulness are the important factors that determine the user’s attitude toward his or her intention to use and actual usage of IS as well as reflect feelings of favorableness or un-favorableness toward using the technology.

Furthermore, based on the signaling theory, user’s impression is an important factor that influences the user to adopt and use the technology. It encourages the user to apply a job offered by an organization (Kashi & Zheng, 2013). Thus, the e-HRM system must pay attention to the possible effect of website and its features which could improve/decrease the IS adoption and acceptance, for example language standardization (Heikkila & Smale, 2011).

4.4.2 Organizational Characteristics

E-HRM adoption within organization can be influenced by organizational characteristics. Some important factors of organizational characteristics are found in this systematic literature review. Firstly, the level of e-HRM adoption in organization can be influenced by high level of management commitment and top management support (Troshani et al., 2011). The management commitment and the support from top management can make decision which encourages the employees to accept and adopt e-HRM in organizations.

Secondly, organizational size and degree of centralization are important factor in successful e-HRM adoption (e.g. Panayotopoulou et al., 2010). Organization with large numbers of employees can use and adopt e-HRM to support their business processes because potential benefits can be spread across large user bases, although in the same time, it has complexity issue. Further, the degree of centralization affects e-HRM adoption when decisions are made at higher hierarchical levels in the organization which ultimately increase the level of e-HRM adoption.

In the e-recruitment case (Llorens, 2011), organizational status is the
important factor which may encourage the potential applicants to apply for a job. It is argued that the organization with high organizational status will have more possibilities to hold candidate pool quality and the overall quality of new hires.

4.4.3 Users/Individuals Characteristics
This literature review finds a range of individual and users factors influencing e-HRM adoption. System and technological factors are about the system and technology quality which will be run and used by the users. The level of adoption will be different among users because they have different skills and knowledge about IT as well as their prior experience working with IT. User’s gender, age, application-specific efficacy and educational level are found as important factors which will influence the degree of e-HRM adoption in individual level.

4.4.4 Environmental and Contextual Factors
Environmental and contextual factors describe the area where organizations conduct their business, and include industry characteristics, and supporting infrastructure (Chakraborty & Mansor, 2013). Firstly, the degree of Internet penetration in the country and society is an important factor which influences the e-HRM adoption. It is because the e-HRM technology implementation depends on the Internet and its supporting infrastructure. Secondly, social and peer influence is found as the significant factor which will influence the adoption of e-recruitment, particularly user’s intention to use the system.

4.4.5 E-HRM Adoption and Outputs
The literature review focuses on a range of factors influencing e-HRM adoption which has been explained above. Furthermore, based on the systematic literature review, a range of constructs has been used in different research, to measure the e-HRM adoption. Some research measures the user’s attitude towards the e-HRM adoption. However, measuring the user’s attitude is not enough, therefore some research propose to use behavioral measurement, such as intention to use, usage behavior and actual system usage.

The literature review also identifies the outcomes of e-HRM adoption in individual level and organizational level. In individual level, the e-HRM user will have high system satisfaction (Wickramasinghe, 2010) and less occupational strain (Konradt et al., 2006). Furthermore, in organizational level, the e-HRM adoption research uses several indicators to measure the outcomes of e-HRM adoption. Because the role of HR will be transformed and facilitated by the used e-HRM systems, e-HRM adoption research assesses the outcomes by measuring the HRM effectiveness, effective communication, reduce cost and be more efficient, increase the value of HR as well as improve business process.

5. Conclusion, Implications & Limitations
There are some opportunities for researchers to further investigate the adoption of e-HRM and ultimately contribute to the theoretical and practical of e-HRM research. First of all, almost 10 papers do not clearly explain the theoretical foundation of their research. Future research must clearly decide and state the theoretical lenses for empirical analysis. Further, it is suggested to employ and combine two different theories as the theoretical lenses to obtain more understanding on how e-HRM system be adopted and accepted. Secondly, most of the e-HRM adoption employed cross-sectional data and not longitudinal
in nature. Thus, future research can employ the longitudinal data which will investigate before and after the adoption of e-HRM, as well as explain the actual outcomes of e-HRM for HR practices and business processes within organizations. As well, future empirical studies may also test the e-HRM adoption framework across different industries and explore the mechanism that exists in the e-HRM adoption. Also, while many studies have emphasized the technological determinism, further studies may shed more light on the nature and strength of the contextual factors which force or hinder the e-HRM adoption.

5.1 Managerial Implications
In addition to contributing to research and theoretical perspectives, this study also contributes to managerial and practice. Usually, most people believe that the IS technology has potential advantages when it is implemented; without giving much attention on the other vital factors. Thus, there is a need to take a more holistic perspective by observing e-HRM practice from system and technology, organizational, users/individuals and contextual/environmental perspectives.

5.2 Limitations
While the literature review provides a direction for future research, the systematic literature review has some limitations. Firstly, this research has not offered detailed propositions linking the elements/characteristics in the e-HRM framework. Secondly, the research used two popular databases to find the relevant papers. Those databases may have omitted some relevant research as well. However, the careful procedure of the systematic review has reduced the probability to omit the relevant papers. For future research, it is suggested to find the relevant papers directly from peer-reviewed journals. This framework hopefully will provide a means to help integrate the research in e-HRM studies in order to advance both research and practices.

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Appendix 1 E-HRM Adoption Research Framework

Appendix 2 List of the research papers

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<th>No</th>
<th>Authors</th>
<th>Research Questions/Research Problem</th>
<th>Variables/ and Hypotheses</th>
<th>Theoretical Underpinning</th>
<th>Method</th>
<th>Findings</th>
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</table>
| 1  | Llorens, 2011 | Public sector E-recruitment adoption framework in the US | high-status and low-status organizations and its impact on candidate pool quality and the overall quality of new hires | Windolf’s typology framework for e-recruitment adoption | Survey | - e-recruitment technologies will hold the potential candidates  
- The role of third-party e-recruitment is important |
<p>| 2  | Tong, 2009 | The employed jobseekers’ perceptions and behaviors of third-party e-recruitment technology adoption in Malaysia. | Perceived usefulness (PU), perceived ease of use (PEOU), behavioural intention (BI), perceived privacy risk (PPR), Performance | Technology Acceptance Model (TAM) | Survey | Perceived usefulness, perceived privacy risk, performance expectancy, application-specific self-efficacy affect employed |</p>
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<td>3</td>
<td>Panayotopoulou, Galanaki, &amp; Papalexandris, 2010</td>
<td>how the national background affects the use of e-HRM</td>
<td>- Organizational level factors: size, firm performance, educational level of the members  - HRM Context: centralization of HRM functions, strategic importance of HRM function, internal communication, training  - National culture, internet penetration, economy</td>
<td>None specific</td>
<td>Mix between survey and secondary data  Cluster analysis</td>
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<tr>
<td>5</td>
<td>Voermans &amp; Veldhoven, 2007</td>
<td>attitude towards electronic human resource management (E-HRM)</td>
<td>IT experiences: ease of use, usability, output quality, user support  Preferred HR role: employee champion, change agent, administrative expert, strategic partner  Control variable: job experience, length of service, knowledge of IT, age, gender</td>
<td>Technology Acceptance Model (TAM)</td>
<td>Survey</td>
</tr>
<tr>
<td>6</td>
<td>Payne, Horner, Boswell, Schroeder, &amp; Stine-Cheyne,</td>
<td>Compare employee reactions to the use of an online performance appraisal (PA) system</td>
<td>Rater accountability, Security of the ratings, Quality of the evaluation,</td>
<td>None specific</td>
<td>Survey</td>
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<th>Year</th>
<th>Authors</th>
<th>Study Focus</th>
<th>Methods</th>
<th>Findings</th>
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<tr>
<td>2009</td>
<td>Panayotopoulou, Vakola, &amp; Galanaki, 2007</td>
<td>The transformation in the role of the HR function in Greek firms, as a result of the use of internet and technology</td>
<td>-</td>
<td>None specific</td>
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<tr>
<td>7</td>
<td></td>
<td>Satisfaction with the PA, Utility of the PA, Participation in the PA</td>
<td>-</td>
<td>Qualitative and quantitative methodology, which involved focus groups and questionnaires</td>
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<td></td>
<td></td>
<td>higher levels of rater accountability and employee participation than employees rate with the traditional instrument</td>
<td>-</td>
<td>E-HRM for facilitation of staffing procedure and communication.</td>
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<td></td>
<td></td>
<td></td>
<td>- e-HR adoption differs by sector type - Organizational culture, employee IT skills, collaboration of HRM and IT are the critical factor for adoption</td>
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<td></td>
<td></td>
<td>The web-based HRM system acceptance is assessed based on the user satisfaction and system usage. It is influenced by organizational characteristics, system condition and individual characteristics</td>
<td>Survey</td>
<td></td>
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<td>2011</td>
<td>Troshani, Jerram, &amp; Hill, 2011</td>
<td>The factors that influence the organizational adoption of HRIS in public sector organizations.</td>
<td>Environment context: Regulatory compliance, Successful adoptions Organizational context: Technology competency, Management commitment, size, centralization</td>
<td>None specific</td>
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<tr>
<td></td>
<td></td>
<td>Environment context and organizational context have deep influenced the e-HRM adoption.</td>
<td>Qualitative exploratory</td>
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<td>2013</td>
<td>Kashi &amp; Zheng, 2013</td>
<td>Factors influencing applicants’ behavioral intentions to apply for jobs online</td>
<td>Perceived usefulness Perceived ease of use Behavioral intention Impression</td>
<td>Survey</td>
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<td></td>
<td></td>
<td>Technology Acceptance Model (TAM) and signaling theory</td>
<td>Perceived usefulness, perceived ease of use behavioral intention impression are</td>
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<td>Methodology</td>
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<td>11</td>
<td>Ngai &amp; Wat, 2006</td>
<td>Examine the status and extent to which industries in Hong Kong have adopted HRIS; to empirically investigate mainly the perceptions of HR professionals of the benefits and barriers to implementing HRIS in Hong Kong; and to study whether HRIS adopters and non-adopters differ in their perceptions of the benefits and barriers to implementing HRIS in small, medium, and large companies.</td>
<td>Survey, descriptive statistic</td>
<td>The quick response and access to information that it brought, and the greatest barrier was insufficient financial support. Moreover, there was a statistically significant difference between HRIS adopters and non-adopters, and between small, medium, and large companies, regarding some potential benefits and barriers to the implementation of HRIS.</td>
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<tr>
<td>12</td>
<td>Wilson-Evered &amp; Härtel, 2009</td>
<td>Attitudes to HRIS implementation</td>
<td>Survey</td>
<td>The success of the implementation of new HRIS systems is to understand the staff groups’ particular needs, concerns and opinions.</td>
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</table>
| 13 | Strohmeier & Kabst, 2009  | Factors influence the cross-national organizational adoption of electronic human resource management (e-HRM) in Europe.                                                                                           | Survey      | - e-HRM is a common practice throughout Europe  
- Major general determinants of e-HRM adoption are size, work organization, and configuration of HRM |
<p>| 14 | Konradt, Christophersen, &amp; Schaeffer-Kuelz, 2006 | Explore attitudinal and behavioral patterns when using employee self-service (ESS) systems                                                                                                                                 | Survey      | Organizational support and information policy were positively related to ease of use, (b) usefulness was positively related to satisfaction and system usage, (c) ease of use and usefulness |</p>
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<tr>
<th>Page</th>
<th>Author(s)</th>
<th>Title</th>
<th>Organizational characteristics</th>
<th>Environmental characteristics</th>
<th>Method</th>
<th>Summary</th>
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<tr>
<td>15</td>
<td>Teo, Lim, &amp; Fedric, 2007</td>
<td>The relationship between innovation, organizational and environmental characteristics, and the adoption of HRIS</td>
<td>Top management support, Size, HRIS expertise</td>
<td>Competition, Extent of HRIS adoption</td>
<td>None specific, Survey</td>
<td>Top management support, organization size and HRIS expertise are positively related to the adoption of HRIS. Organization size has a significant relationship with the extent of HRIS adoption.</td>
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</tbody>
</table>
| 16   | Ruta, 2005 | The application of change management theory to HR portal implementation in subsidiaries of multinational corporations | IT user acceptance, Intention to use, Corporate culture, Industry characteristic, Top management | None specific, Case study | Change management theory and IT acceptance | When change management principles are integrated with an IT user acceptance model in developing an implementation plan, the individual acceptance of HR portal use will increase. In cross-national implementation of an HR portal, general implementation plans should be adapted to the local context in order to increase the actual use of the HR portal in the subsidiary. In cross-national implementation of an HR portal, unique...
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<tbody>
<tr>
<td>17</td>
<td>Heikkila &amp; Smale, 2011</td>
<td>The effects of language standardization on the acceptance and use of e-HRM systems in foreign subsidiaries</td>
<td>effort expectancy</td>
<td>Unified Theory of Acceptance and Use of Technology (UTAUT)</td>
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<td>Language standardization will affect the acceptance and use of e-HRM systems</td>
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<tr>
<td>18</td>
<td>Huang &amp; Martin-Taylor, 2013</td>
<td>how HR can drive and influence users’ acceptance within the context of HR self-service technology adoption in an organization</td>
<td>Perceived usefulness</td>
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<td>Perceived ease of use</td>
<td>Action research</td>
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<td>Usage behavior</td>
<td>HR can play a more proactive role in shaping and reshaping users’ perceptions towards accepting such a technology</td>
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<td>19</td>
<td>Rahim &amp; Singh, 2007</td>
<td>the experiences of two large Australian universities in introducing two different types of B2E e-business systems</td>
<td>Perceived benefits: (individual benefits) efficient, up-to-date information, time saved, Organizational benefits: cost reduction, improved business process Perceived impediments: inadequate resources, lack of trust, low awareness, and change management difficulties User satisfaction</td>
<td>None specific</td>
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<td>Exploratory case study</td>
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|   |   |   |   | Receive benefits from cost cutting but mixed findings were found with regard to benefits experienced by individuals using those B2E systems. A variety of impediments including the difficulties in justifying the costs of B2E e-business systems, change management, and problems with consultants do affect smooth introduction of B2E systems. Hence, organizations planning to adopt these systems should be aware that the journey to establish electronic
Business with employees requires considerable management support and promises significant organizational benefits.

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<td>Wahyudi &amp; Park, 2014</td>
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<td>Winkler, Konig, &amp; Kleinmann, 2013</td>
<td>Managers’ perceptions of attributes for successful human resource information</td>
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