Introduction to the Special Issue on Human Resource Information Systems and Human Computer Interaction

Richard D. Johnson  
*University at Albany, rjohnson@albany.edu*

Kimberly M. Lukaszewski  
*Wright State University, kimberly.lukaszewski@wright.edu*

Dianna L. Stone  
*Virginia Tech, dianna6@vt.edu*

Follow this and additional works at: https://aisel.aisnet.org/thci

Recommended Citation

DOI:
Introduction to the Special Issue on Human Resource Information Systems and Human Computer Interaction

Richard D. Johnson
University at Albany, SUNY
rjohnson@albany.edu

Kimberly M. Lukaszewski
Wright State University

Dianna L. Stone
University at Albany, SUNY
Virginia Tech

Abstract:

In this special issue, we focus on the role that human-computer interaction (HCI) can play in the development and successful use of human resource information systems (HRIS) in organizations. There is no doubt that information systems have transformed the practice of human resources. From online/e-recruiting to e-learning and the growing interest in data analytics, the practice of human resources has become technology centric. Given the overlap of human resource practice and information systems, both fields need to work together to develop models and theories that advance the practice of HRIS in organizations. Therefore, this special issue a) briefly reviews the history of the HRIS field, b) advances theory and research that stands at the intersection of HRIS and HCI, and c) suggest new directions for research at the intersection of HRIS and HCI.

Keywords: Human Resources, Information Systems.
1  A Brief History of Human Resource Information Systems

Information systems have long played an important role in human resources management (HRM). From early mainframe systems that supported payroll processing and government reporting developed over 60 years ago to today's cloud-based systems that support sophisticated data analytics, technology is propelling human resources in many new directions (Stone & Dulebohn, 2013). The technologies supporting human resources have been labeled human resource information systems (HRIS). A HRIS is an information system “used to acquire, store, manipulate, analyze, retrieve, and distribute information regarding an organization’s human resources to support HRM and managerial decisions” (Kavanagh, Thite, & Johnson, 2015, p. 17).

One needs to distinguish between and HRIS and traditional information systems for several reasons. First, in contrast to traditional information systems “the success of a HRIS often depends on the acceptance and use of the, system by all internal and external stakeholders…, many of whom may not be under direct control of the organization” (Johnson, Lukaszewski, & Stone, 2016, p. 535). Second, HRIS help organizations to “attract, motivate, and retain employees, and can aid applicants, employees, and line managers in making individual and organizational decisions” (Johnson, Thatcher, & Burleson, 2016, p. 228). Third, unlike traditional information systems, HRIS focus on people; that is, they contain information about each applicant, current employees, former employees, and retirees of the organization and are the mechanism through which they receive HR services.

HRIS have enabled multiple changes in the practice of human resources. For example, today, most applicants will apply online for an open position and their application will be automatically screened for specific key words (Mohamed, Orife, & Wibowo, 2002). In addition, organizations are increasingly turning to automatically scored proctored and unproctored Internet testing to support hiring decisions (Beaty et al., 2011). Researchers have labeled this new, technology-centric approach to delivering HR functionality and service electronic human resources management (eHRM) (Gueutal & Stone, 2005; Lengnick-Hall & Mortiz, 2003; Ruél, Bondarouk, & Looise, 2004). eHRM refers to implementing and delivering HR functionality enabled by a HRIS that connects employees, applicants, managers, and the decisions they make (Johnson et al., 2016, p. 536). Research has found that most large and mid-size organizations have adopted HRIS and are moving to eHRM to support and deliver HR functions and services (CedarCrestone, 2014).

1.1  Research on HRIS and eHRM

Despite the importance of HRIS to the HR function, scholars have only scarcely focused on the use of HRIS in organizations until recently (Johnson et al., 2016). Although Smith and Greenlaw (1967) published the first study on the use of computer simulation in employee selection in 1967, only 22 papers were published in the next 20 years (Johnson et al., 2016). But, in the last decade, HRIS research has begun to dramatically increase, with 54 papers published since 2010. Of this research, the vast majority of studies have been conducted in the domains of human resource management and industrial and organizational psychology. In fact, in their review of the literature, Johnson et al. (2016) found that, other than a special issue in the Journal of Strategic Information Systems, only one paper was published in our most reputable journals: DeSanctis (1986) in MIS Quarterly. In contrast, Johnson et al. found that both the Journal of Applied Psychology and Personnel Psychology have each published 11 studies on the topic of eHRM and HRIS.

This disparity illustrates both a problem and an opportunity for researchers. First, as Johnson et al. (2016) note, much of the research conducted by HR scholars does not effectively integrate or build on reference disciplines such as information systems because, in part, HR scholars are not trained in information systems and its key theories and methods. Second, HR scholars often study outcomes that are different from those of importance to IS scholars. Third, it illustrates the lack of contribution of IS scholars to the development of HRIS theories and research. As with HR scholars, IS scholars often lack the background and training in the various functional areas of HR (e.g., recruitment, selection). In addition, many traditional HR outcomes such as applicant attraction, job satisfaction, and employee reactions do not involve the IT artifact, which leads IS scholars to pay little attention to these areas. Taken together, an opportunity now exists for IS scholars to contribute to a growing interest in the role technology can play in the delivery of HR functionality and services.
1.2 Existing Literature Reviews

As with the HRIS studies discussed above, when researchers have conducted literature reviews, they have traditionally focused on HR issues or IS issues exclusively. For example, Strohmeier (2007) discuss the various micro and macro theories, research methodologies, and outcome variables of interest to eHRM scholars. In addition, Stone, Lukaszewski, Stone-Romero, and Johnson (2013) review the research on the use of technology in support of selecting employees. Using Kohli and Grover’s (2008) IT value typology, Wirtky, Laumer, Eckhardt, and Weitzel (2016) review the literature on eHRM, focusing on how the transformation of HR affects information technology (IT) use. Further, Johnson et al.’s (2016) review highlights both the professional and academic development of the HRIS field and traces the dominant technologies, research approaches, and theories underlying the use of technology in HR. Finally, Johnson, Thatcher, and Burleson, use a framework focused on Zuboff’s (1988) concepts of automating and informing to review the literature and determine that most of the eHRM/HRIS research has focused on the automating capabilities of these technologies. In each case, the authors could focus on either a key HR or IS issue, but other than Johnson, Thatcher & Burleson’s review, the majority do not focus on bringing key theories from information systems into our studies of HRIS.

1.3 HRIS and Human Computer Interaction

From reviewing the research on HRIS, it is clear that theories from information systems and HCI can add value to the literature on HRIS. Although many of those reading this special issue will be familiar with the field of human computer-interaction, for those who are coming from outside the discipline, we briefly summarize the field and its key characteristics. Broadly speaking, the human-computer interaction field focuses on the relationship between a user and a computer or digital device (e.g. smart phone, tablet, GPS). Many authors have noted that this relationship is richer and more complex than with other traditional tools, such as a screwdriver or hammer (Card, Newell, & Moran, 1983; Nass & Moon, 2000). Computers and computing technology bring with them multiple and flexible capabilities through which a human will interact in similar ways that they may interact with another human (Marakas, Johnson, & Palmer, 2000; Nass & Moon, 2000). Therefore, the HCI field focuses on a broad set up topics beyond objective system usability, such as interface design, user-centered design, social computing, technology trust, augmented reality, mobile versus desktop platforms, ubiquitous computing, and psychological and social responses to computers. Outcomes of interest to researchers in this domain may include objective usability, adoption intentions, user attitudes, user behavior, psychological responses to computers, and design quality (Galletta & Zhang, 2009; Zhang, Scialdone, & Carey, 2009).

From reviewing the HRIS literature above and our description of the HCI field, we can see that much of the research on HRIS has focused more broadly on the efficiency of technology in human resources and the impact of computer use on the HR function rather than on the design of these systems and the interaction between them and the users (e.g. applicants, employees, managers, retirees). Although some notable exceptions exist in e-recruitment (Dineen & Noe, 2009; Allen, Van Scotter, & Otondo, 2004) and benefits administration (Sturman & Milkovich, 1995; Sturman, Hannon, & Milkovich, 1996), HCI is often an overlooked part of the study of HRIS in organizations, which is surprising given that the relationship between the employee and the computer is the core of how the HRIS is used. The design and use of HRIS can impact the types of individuals who apply for open positions, how they are selected, how employees are evaluated, how compensation and benefits decisions are made, how employees react to HR policies, how employees are managed, and more. In other words, HCI can dramatically impact the effectiveness and success of a HRIS.

For example, Dulebohn and Johnson (2013) develop a classification framework for designing decision support systems for human resources. An important component of this is the choice of data to use and the decision making process. As we have discovered through the classic HCI studies of the Minnesota Experiments (Dickson, Senn, & Chervany, 1977), how one presents and displays data can have a dramatic impact on how one makes decisions. Thus, HCI research’s findings can augment the Dulebohn and Johnson framework to better understand how the design of data analytics may impact the quality of human resources insights gained by managers.

Consider also the potential impact in the recruitment process. A poorly designed recruitment website and online application can result in candidates removing themselves from the recruitment process (Allen et al., 2004), which can cause an organization to miss out on a talented employee or for an individual to lose out on the opportunity to gain access to a job. Further, the identification and selection of the strongest
candidates will improve hiring outcomes and organizational performance. But research has found that the medium used during selection can affect candidate reactions and hiring manager decisions (Chapman, Uggerslev, & Webster, 2003; Silvester & Anderson 2003). Research has argued that technology creates more realistic, hi-fidelity selection tests (Lievens & Thornton, 2005). HCI research could help inform organizations to develop more effective technology-enabled selection tasks, which is particularly important in the area of assessment centers where “systematic research about their validity and utility in comparison with established practices is typically lacking” (Lievens & Thornton, 2005, p. 258).

Another area where HCI can inform researchers on designing and implementing HRIS is in employee benefits. Employee benefits are growing in importance to organizations because of their expense and increasing governmental regulations. Thus, organizations are looking for ways to offer desired benefits while keeping expenses down. In addition, most organizations are moving away from defined benefit pension plans to defined contribution plans, such as 401K. Thus, employees are increasingly responsible for managing their own retirement and financial plans, most of whom have little if any financial knowledge or experience. Thus, the role of interface design and decision support systems can help employees to make more effective online investing decisions (Looney, Akbulut, & Poston, 2008).

The above examples are just that: examples of how HCI research can inform the design, implementation, and success of a HRIS. There are many more potential ways that HCI research can contribute to HR and HRIS in areas such as job analysis, HR planning, recruitment, selection, training, legal compliance, self-service, data analytics, and more. For this reason, our special issue brings together researchers from both information systems and human resources to address several key issues where HCI affects the successful implementation and use of HRIS.

2 Overview of Papers

This special issue includes nine papers, two of which appear in this issue of the journal. We will publish the remainder in forthcoming issues of *AIS Transactions on Human Computer Interaction*. One study focused on how using social media in the hiring process may have some unintended negative consequences (e.g., it has the potential to invade individuals’ privacy), and the second focused on the positive aspects of social media (i.e., using social media to enhance access to information in knowledge organizations).

The first paper by John Drake, Dianne Hall, Brett Becton, and Clay Posey (2016), “Job Applicants’ Information Privacy Protection Responses: Using Social Media for Candidate Screening”, examines the types of privacy protection strategies that job applicants’ use when organizations use online social network sites (SNS) in the hiring process. In recent years, there has been a rise in the use of online SNS in the employment decision making process. Although employers argue that screening applicants’ SNS is essential to protect organizations from negligent hiring lawsuits, research has revealed that accessing personal sites is likely to evoke extremely negative reactions on the part of job applicants (e.g., invasion of privacy). Despite these findings, relatively little empirical research has directly examined applicants’ responses to the use of SNS, and we know of no research that has assessed the degree to which they engage in privacy protection strategies to maintain control over personal information.

As a result, Drake et al. (2016) use an extended version of the ethical decision making model to make predictions about job applicants’ negative judgments and behavioral responses to the use of SNS in the hiring process. They conducted a study to test the predictions in their model using data from 250 college students who were in the job search process. Their results show that participants recognized the use of SNS in the hiring process as a moral issue, and this recognition was positively related to negative judgments about the issue. In addition, the negative judgments were positively related to all privacy protection responses except misrepresentation. In particular, the results indicate that negative judgments about the issue were positively associated with a) refusal to give login information, b) removal of information from the SNS, c) engaging in negative word of mouth, d) complaining to executives, and (e) complaining to third parties. The authors also discuss the implications of their findings for future research and practice.

The second paper by Hossam Ali-Hassan and Dorit Nevo, “How Social Media Can Enhance Access to Information through Transactive Memory Development”, examines the effectiveness of using internal social media sites to locate and coordinate expertise in knowledge organizations. One of the key challenges of managing knowledge workers is to locate and access individual expertise and gain information to solve novel problems. The authors argue that one can use social media to enhance access
to information and solve unique problems. In this context, social media refers to technology that allows one to create, share, exchange, and redistribute user information (Gallaugher & Ransbotham 2010).

Ali-Hassan and Nevo (2016) use transactive memory (TM) theory (Wegner, 1986) to examine the effects of using social media to locate expertise and facilitate access to information. They predict that a) the social and b) the cognitive use of social media influence the degree to which individuals can identify experts, establish trust in experts, and develop a shared context or coordination. In turn, these three variables are thought to affect access to information.

The authors conducted a quantitative study to test their model, and the results reveal considerable support for it. In particular, the findings indicate that the social and cognitive use of social media was positively related to expertise identification and that the cognitive use of social media was positively related to trust in the expert and the establishment of a shared context or coordination. In addition, the results found that social use of social media was negatively associated with developing a shared context (coordination). Further, the three dimensions of expert identification, trust, and shared context were positively related to employee access to information. As a result, this study is the first to illustrate how the use of social media affects transactive memory and can be used to enhance knowledge workers’ access to information.

In future issues, we will publish papers that focus on HCI and design issues, such as developing a new conceptual modeling approach for the design of HRIS (Strohmeier & Rohrs, forthcoming), the design and use of e-learning (Fisher, Orvis, Howardson, & Wasserman, forthcoming; Janson, Sollner & Leimeiser, forthcoming), information security (Zafar, Randolph, & Neale, forthcoming) and employee use of technology to support human resources (Moqbel & Nah, forthcoming).

3 Conclusion

At the center of any information system is the interface and relationship between the human and the computer or digital device. As we note above, although important for successfully designing and implementing any system, HCI is particularly important for successfully implementing an HRIS for all stakeholders. In this special issue, we focus on the role that HCI plays in the design of HRIS, how we recruit and train employees, how employees use technology to connect and get work done, and how organizations can improve the security of these systems. We believe that, for organizations to successfully implement and maximize the potential of HRIS, we need research that draws from human resources, information systems, and HCI will. The intersection of HCI and HRIS will provide many exciting opportunities for scholars from human resources and information systems to collaborate on interesting cross-disciplinary work on HRIS can be undertaken, and we hope that this special issue will contribute to an increase in cross-disciplinary research in HRIS and HCI.
Acknowledgments

We take this opportunity to express our sincere appreciation to Dennis Galletta and Joe Valacich for giving us the opportunity to edit this special issue. In addition, we thank all of the reviewers who spent countless hours evaluating the manuscripts, and the authors who shared such interesting papers with us.
References


About the Authors

Richard D. Johnson is an Associate Professor of Management, Department Chair, and Director of the Human Resource Information Systems (HRIS) program at the University at Albany, State University of New York. He received his PhD from the University of Maryland, College Park. His research interests focus on electronic human resource management, the psychological impacts of computing, training and elearning, and issues surrounding the digital divide. His research has been published in outlets such as Information Systems Research, Journal of the Association for Information Systems, Human Resource Management Review, and the International Journal of Human Computer Studies. He is the Past Chair of AIS SIGHCI and is a Senior Editor at Data Base and an Associate Editor at AIS Transactions on HumanComputer Interaction. He is also co-editor of the HRIS textbook, Human Resource Information Systems: Basics, Applications & Future Directions.

Kimberly M. Lukaszewski is an assistant professor of management at Wright State University. She received her MBA in human resources information systems (HRIS), and her PhD in organizational studies from the University at Albany, State University of New York. Her research focuses on electronic human resource management, privacy, and diversity issues. Her research has been published in such journals as Human Resource Management Review, Journal of Business and Psychology, Journal Business Issues, and Business Journal of Hispanic Research.

Dianna L. Stone received her PhD from Purdue University, and is currently a Visiting Professor at the University at Albany, State University of New York, and Virginia Tech. Her research focuses on factors affecting the acceptance and effectiveness of electronic human resource management, diversity in organizations, unfair discrimination based on race, disability, and veteran's status, and cross cultural issues in Human Resource Management. Results of her research have been published in the Journal of Applied Psychology, Personnel Psychology, Human Resource Management Review, the Journal of Management, and the Academy of Management Review. She is currently the Associate Editor of Human Resource Management Review, and is the former Editor of the Journal of Managerial Psychology. She is a Fellow of the American Psychological Association, the Society for Industrial and Organizational Psychology, and the Association for Psychological Science.
1.1 Editors-in-Chief

| Dennis Galletta, U. of Pittsburgh, USA | Paul Benjamin Lowry, U. of Hong Kong, China |

1.2 Advisory Board

| Izak Benbasat | John M. Carroll | Phillip Ein-Dor |
| U. of British Columbia, Canada | Penn State U., USA | Tel-Aviv U., Israel |
| Jenny Preece | Gavriel Salvendy, Purdue U., USA, & Tsinghua U., China | Ben Shneiderman |
| U. of Maryland, USA | | U. of Maryland, USA |
| Joe Valacich | Jane Webster | K.K. Wei |
| U of Arizona, USA | Queen's U., Canada | City U. of Hong Kong, China |
| Ping Zhang | | |
| Syracuse University USA | |

1.3 Senior Editor Board

| Torkil Clemmensen | Fred Davis | Traci Hess | Shuk Ying (Susanna) Ho |
| Copenhagen Business School, Denmark | U. of Arkansas, USA | U. of Massachusetts Amherst, USA | Australian National U., Australia |
| Mohamed Khalifa | Jinwoo Kim | Anne Massey | Fiona Fui-Hoon Nah |
| U. Wollongong in Dubai, UAE | Yonsei U., Korea | Indiana U., USA | Missouri University of Science and Technology, USA |
| Lorne Offman | Kar Yan Tam | Dov Te'eni | Jason Thatcher |
| Claremont Graduate U., USA | Hong Kong U. of Science & Technology, China | Tel-Aviv U., Israel | Clemson University, USA |
| Noam Tractinsky | Viswanath Venkatesh | | Mun Yi |
| Ben-Gurion U. of the Negev, Israel | U. of Arkansas, USA | Drexel University, USA | Korea Advanced Ins. of Sci. & Tech, Korea |

1.4 Editorial Board

| Miguel Aguirre-Urreta | Michel Avital | Hook Chuan Chan | Christy M.K. Cheung |
| DePaul U., USA | Copenhagen Business School, Denmark | Virginia Military Institute, USA | Hong Kong Baptist University, China |
| Michael Davern | Carina de Villiers | Alexandra Durschikova | Xiaowen Fang |
| U. of Melbourne, Australia | U. of Pretoria, South Africa | U. of Arizona, USA | DePaul University |
| Matt Germonprez | Jennifer Gerow | Suparna Goswami | Khaled Hassanein |
| U. of Wisconsin Eau Claire, USA | | Technische U.München, Germany | McMaster U., Canada |
| Milena Head | Netta Ivani | Zherhui Jack Jiang | Richard Johnson |
| McMaster U., Canada | Oulu U., Finland | National U. of Singapore, Singapore | SUNY at Albany, USA |
| Weiling Ke | Sherrie Komlak | Na Li | Ji-Ye Mao |
| Clarkson U., USA | Memorial U. of Newfoundland, Canada | Baker College, USA | Renmin U., China |
| Scott McCoy | Gregory D. Moody | Robert F. Otondo | Lingyun Qiu |
| College of William and Mary, USA | U. of Nevada Las Vegas, USA | Mississippi State U., USA | Peking U., China |
| Sheizaf Ravid | Rene Riedl | Khawaja Saeed | Shu Schiller |
| U. of Haifa, Israel | Johannes Kepler U. Linz, Austria | Wichita State U., USA | Wright State U., USA |
| Hong Sheng | Stefan Smolnik | Jeff Stanton | Heesan Sun |
| Missouri U. of Science and Technology, USA | European Business School, Germany | Syracuse U., USA | U. of Arizona, USA |
| Horst Treiblmaier | Ozgur Turekten | | |
| Vienna U. of Business Admin. & Economics, Austria | Ryerson U., Canada | Fahri Yetim | Cheng Zhang |
| Meiyun Zuo | | | Fudan U., China |
| Renmin U., China | | |

1.5 Managing Editor

| Gregory D. Moody, U. of Nevada Las Vegas, USA |

1.6 SIGHCI Chairs