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Analyzing the impact of HRIS implementations on HR personnel's job satisfaction and turnover intention

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ABSTRACT

An in-depth case of an e-Recruiting system implementation is used while focusing on the level of Human Resource (HR) employees to research unintended consequences during the implementation of Human Resources Information Systems (HRISs). We develop a model that integrates the belief and attitude component of the technology acceptance literature with work-related consequences. We provide evidence for an indirect effect of attitudes toward the HRIS on turnover intention that is fully mediated by job satisfaction. Our results contribute to the literature on systems implementations and technology adoption by suggesting work-related outcomes as important additional success variables.

1. Introduction

While advances in technology and management have routinely been used to advance primary business processes, the professionalization of Human Resources (HRs) processes often lags behind. Despite the widely acknowledged importance of "human capital" for firm success, HR processes are often typical of other support processes that are not well strategically aligned, suffer from low Information Systems (ISs) support, and hence can hardly help realize the strategic potential hidden in Human Resources Management (HRM). A key move toward realizing that potential is to go from HRM to e-HRM by implementing Human Resources Information Systems (HRISs). Like enterprise resource planning systems in other areas, an HRIS can automate HR activities in the HR department (Bondarouk et al., 2009; Lee, 2007; Strohmeier, 2007, 2009; Tansley et al., 2001) and provide efficient HR services for the entire organization (Ulrich, 1996), thus making the HR department a strategic player within the firm (Hussain et al., 2007).

During this transformation of HR from administrative expert to strategic partner (Wright, 2008), the tasks, work routines, competencies, and capabilities of HR employees change as well. Thus, two key questions are whether HR staff will accept these changes (Wiblen et al., 2010) and whether there are unintended consequences. Despite well researched organization-level consequences of this strategic transformation, individuals working in the HR department in particular are strongly affected, often in unanticipated ways. Drawing on insights from a large-scale strategic e-HRM implementation project at a global automotive supplier, we find that HRIS implementation not only affects HR staff job satisfaction (Boudreau and Robey,

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2005) but even their turnover intention. Thus, the goal of this paper is to uncover the impact of strategic HRIS implementations on employee job satisfaction and turnover intention. The research question is:

How does the implementation of HRIS in organizations affect HR personnel job satisfaction and turnover intention?

Drawing on the literature on technology adoption and work-related consequences, we develop six hypotheses regarding how HRIS- and job-related attributes and beliefs influence HR personnel turnover intentions. We employ data from 106 HR employees of a global firm that is in the midst of implementing a new HRIS for its recruiting department. Our results contribute to technology adoption and HRIS implementation literature by considering work-related outcomes as additional dependent variables in technology acceptance models for mandatory usage settings and as additional success variables in HRIS implementation success models.

2. Theoretical background and research model development

For understanding the consequences of an HRIS implementation for the affected employees or potential system users, technology adoption research provides well-researched theories and models that explain an individual's adoption of an IT innovation (see Venkatesh et al., 2003 for an overview). Such research, frequently based on the Technology Acceptance Model (TAM, Davis, 1989; Davis et al., 1989), provides empirical evidence that an individual's beliefs about an information system and attitude toward using it influence the intent to use the system and consequently the respective usage behavior (Davis, 1989). These relationships have been evaluated and discussed extensively in several studies (Williams et al., 2009). A major tenet of these approaches is that an employee's attitude toward using an information system, defined as "an individual's degree of evaluative affect toward the target behavior" (Davis, 1986), is a key factor for predicting usage behaviors. However, it is claimed that this does not hold true for predicting employees' usage behavior in organizations, especially when use is mandatory (Brown et al., 2002). Because organizations that implement new information systems insist that they be used, employees will indeed use them, although they may have negative beliefs and attitudes about such use. Consequently, an individual's attitude toward using a newly implemented information system is not necessarily linked to the behavioral intent to use it and the corresponding usage behavior (Brown et al., 2002). In addition, the investigation of "outcomes in technology adoption research ... is very limited" (Venkatesh et al., 2007, p. 277), particularly the consequences of employees' negative attitudes toward an information system remain unexplored. This is more precisely stated by Brown et al. (2002), who ask "[i]f an employee's attitude is not related to his/her intention to use technology, what does it influence?" (p. 293) and subsequently suggest that "[a]ttitudes can have a significant influence on an individual's perception of the work environment and organization" (p. 291).

To explain the consequences of perceptions of an information system and the general attitude toward using an information system, we assume there to be a relationship between attitudes about a newly implemented IS and work-related outcomes such as job satisfaction and turnover intention. This proposition is in line with the phenomenon described earlier that the implementation of HRIS has individual-level based consequences. Our proposition is based on Brown et al. (2002), who state that "[o]ne possibility is to examine the intention to turn over as a result of the system implementation" (p. 293). Additionally, Morris and Venkatesh highlight the importance of analyzing the influences of "technology characteristics ... on job characteristics and/or job outcomes" (p. 155). By explaining the impact of employees' perception of a new information system on work-related consequences, we are able to illustrate both the expected and unexpected consequences of HRIS implementation for HR employees.

In the following sections, we develop a research model to explain the impact of HRIS implementations in organizations on employee job satisfaction and turnover intention. The model is based on technology adoption research (Davis, 1989; Venkatesh et al., 2003) and on research discussing work-related consequences (March and Simon, 1958).

2.1. HRIS-related beliefs and attitudes

As an organization introduces an HRIS, each employee who works with the system evaluates the new technology, for example, in terms of its usefulness and ease of use (Davis et al., 1989). The skills required to operate the new system represent a crucial success factor for HRIS employees (Panayotopoulou et al., 2007), as large numbers of HR employees do not have skills and knowledge to use the system (Lukaszewski et al., 2008). This restricts HR employees from exploiting the full potential of an HRIS. When employees are not even aware of all the possibilities of an HRIS, they may evaluate the system rather negatively. Conversely, HR employees who know how the system performs and thus how it facilitates their work and provides them more time for strategic task, perceive the HRIS as more useful. There are thus some important perceptual beliefs linked to HR personnel perceptions of the usefulness of an HRIS, defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320), and the perceived ease of use, defined as "the degree to which a person believes that using a particular system would be free from effort" (Davis, 1989, p. 320). These perceptual beliefs about an HRIS factor in the overall evaluation of the entire HRIS, which is reflected in the attitude toward the IS. Moreover, it is argued that the more an individual perceives an information system as easy to use, the more she perceives the system as useful (Davis, 1989). Thus, we assume:

H1. *The greater the perceived ease of use of an implemented HRIS, the greater the perceived usefulness.*

In addition, employees generally evaluate an HRIS as positive only if they have adequate skills and knowledge to use it with relative ease, which is not always the case (Lukaszewski et al., 2008). Hence, additional effort through training is necessary to ensure that HR employees evaluate the HRIS positively. If an HRIS is difficult to use, HR employees develop a negative attitude about using the system (Beckers and Bsat, 2008). Thus, our next hypothesis is based on TAM (Davis et al., 1989):

H2. *The greater the perceived ease of use of an implemented HRIS, the more positive the attitude about using the system.*

An individual develops a positive or negative attitude about using an HRIS based upon an evaluation of its usefulness and ease of use (Taylor and Todd, 1995). HR personnel thus balance their implementation experiences against their demands. Regarding usefulness, HR employees expect an HRIS to increase the efficiency of human resources processes (Beckers and Bsat, 2008; Bondarouk and Ruël, 2009; Lukaszewski et al., 2008; Stone and Lukaszewski, 2009), automate administrative HR processes (Ngai et al., 2008), and assist in a wide variety of HR management decisions (Hussain et al., 2007) so that using the HRIS increases HR employees' standing and opens additional career paths within the organization (Bondarouk and Ruël, 2009; Hussain et al., 2007; Lawler and Mohrman, 2003). In contrast, changing tasks, new workflows, and new responsibilities necessitated by a new HRIS can lead to a negative evaluation (Panayotopoulou et al., 2007; Ruël et al., 2007). Thus, we assume:

H3. *The greater the perceived usefulness of an implemented HRIS, the more positive the attitude about using the system.*

2.2. The impact of HRIS-related attitudes on work-related outcomes

The implementation and use of new systems such as an HRIS enable, on the one hand, a transformation of HR from a largely administrative role to one of strategic partner, change agent, or employee champion in organizations (Caldwell, 2003). On the other hand, it provides additional challenges to the status of HR, with some even questioning the function's future viability (Kanter, 2003). The possibility to automate and outsource HR tasks (Adler, 2003; Hendrickson, 2003) has led to a process of fragmentation such that some HR tasks are automated and some are outsourced to external service providers, while others are still delivered internally. In addition, some new tasks have often emerged (Adams, 1991; Forst, 1997).

This transformation from HRM to e-HRM also affects employees' perspectives on their jobs and the organization (see Bondarouk and Ruël, 2009; Elkins and Philips, 2000). The general perceptions about one's job are discussed in research on organizations (March and Simon, 1958) and are expressed by the two variables job satisfaction and turnover intention. Job satisfaction is defined as "the sum of the evaluations of the discriminable elements of which the job is composed" (Locke, 1969, p. 330). While an employee is especially satisfied upon signing the employment contract (Vandenberghe et al., 2011), that same employee's satisfaction is assumed to diminish over time. Turnover intention reflects an employee's deliberate and conscious willingness to quit a job and leave the organization (Tett and Meyer, 1993). A negative correlation between job satisfaction and turnover intention can be observed in several studies (Griffeth et al., 2000; Joseph et al., 2007; Tett and Meyer, 1993), such that if an employee's job satisfaction declines, the intention to quit increases, and vice versa. However, while employees are satisfied with their jobs during their first months of employment, and give little thought to quitting (Vandenberghe et al., 2011), this begins to change over time as strain and stress occur (Podsakoff et al., 2007).

Job satisfaction and turnover intention are important and well-studied variables in a work-related context for comprehending employee behavior and reactions after changes (Oreg et al., 2011). Employee commitment to and coping with change are factors that influence turnover intentions (Cunningham, 2006). The intention of an individual to quit increases if she evaluates a change rather negatively and threateningly (Cunningham, 2006). Moreover, if a change is threatening, one's job satisfaction declines; working in an uncomfortable environment is dissatisfying for employees (Cunningham, 2006). Thus, the attitude regarding an organizational change influences an employee's job satisfaction, turnover intention, and, consequently, voluntary turnover.

HRIS implementation in an organization makes concrete this abstract change situation that influences work-related outcomes. It is the HRIS itself that is the change-inducing object that enables the transformation from HRM to e-HRM. Thus, an individual's perception and general evaluation of the HRIS as a change object influences that individual's job satisfaction and turnover intention during and after system implementation. Thus, we focus on these two work-related outcomes and assume that an employees' attitude regarding the HRIS influences these variables, as explained in greater detail in the following paragraphs.

There are multifaceted reasons that job satisfaction may change during HRIS implementation. For example, poor communication regarding the reasons of the change may give employees the impression that an HRIS is being implemented to reduce costs rather than to facilitate work (Stone and Lukaszewski, 2009). This assumption is in line with Ferratt et al. (2005), who indicate that employees prefer employer organizations that support human capital over task- and profit-oriented organizations. Moreover, employee satisfaction continues to decrease when an HRIS is difficult to use (Beckers and Bsat, 2008). This phenomenon may also stem from declining work motivation, which in turn affects job satisfaction in a negative manner (Fried and Ferris, 1987; Ilgen and Hollenbeck, 1991; Singh, 1998). In addition, an HRIS makes it necessary for employees to change work habits and adjust to a new workflow (Wiblen et al., 2010). Learning new routines required to deal with the HRIS

creates more work and additional stress. This is one reason HR employees may resist using an HRIS (Ngai et al., 2008), as they seldom see reengineered work routines and business processes in a positive, smooth light. Consequently, lower job satisfaction of employees during the implementation of an HRIS may result (Burke, 2001; Konradt et al., 2003). However, the extent or mode of operation of these influences depends on the degree to which an employee accepts the HRIS-induced change (Wanberg and Banas, 2000). We assume that a changed job situation that is perceived positively leads to increased job satisfaction, whereas negative attitudes about the HRIS lessen job satisfaction. Thus, given the stress and changes in work tasks that affect individual job satisfaction when a new HRIS is introduced, we hypothesize:

H4. *The more positive the attitude about using an implemented HRIS, the greater the job satisfaction.*

In the context of work-related consequences, job satisfaction is a major contributing factor for turnover intentions (Lacity et al., 2008), which is a key variable for understanding voluntary turnover. An individual leaves an organization when stress at work occurs and, as a consequence, job satisfaction is declining. Thus, stressors at work are contributing factors in employee retention (Griffeth et al., 2000; Hom et al., 1992).

Employees may perceive the concrete change situation of HRIS implementation as a stress event. The HRIS implementation causes them to reconsider their situations at work (Vandenberghe et al., 2011) and often includes negative connotations (e.g., Lukaszewski et al., 2008; Ngai and Wat, 2006; Ruël et al., 2007). For example, employees may be fired after HRIS implementation because of reduced demand for personnel involved with managing rather than administrative processes (Bondarouk et al., 2009; Panayotopoulou et al., 2007). A changing workforce leads to rumors and disturbances within the organization, and the intent of employees to quit may increase, especially among those who have the worst attitude toward the HRIS and are dissatisfied with their jobs (Trevor and Nyberg, 2008).

The effect of rising turnover intention is strengthened as employees feel the increasing strain associated with acquiring new skills (e.g., Lukaszewski et al., 2008; Panayotopoulou et al., 2007) to meet the demands for cost reduction (e.g., Bondarouk et al., 2009; Marler et al., 2009; Ruël et al., 2007), exploiting process improvements (e.g., Kossek et al., 1994; Tansley et al., 2001), and realizing time savings (e.g., Strohmeier, 2007) so that they can recruit well-qualified personnel in less time. Ferratt et al. (2005) suggest that such a task-focused orientation of an HRIS, focused exclusively on increasing an employee's short-term performance, produces higher turnover rates than configurations that focus on the employee. When an employee's role changes after HRIS implementation (Wiblen et al., 2010), she could become dissatisfied or even quit her job.

In particular, the introduction of HRIS changes the strategic alignment of the HR department. Organizations expect HR employees to carry out more strategic, rather than administrative, work (e.g., Ball, 2001; Beckers and Bsat, 2008; Bondarouk et al., 2009; Ngai and Wat, 2006; Ruël et al., 2007; Strohmeier, 2009). Consequently, the HR department – after implementing the information system – becomes a strategic business partner (Roepke et al., 2000) by adding value and competitive advantage as it matches HR practices to the business, producing an environment full of innovation and creativity (Brockbank, 1999), supporting management with strategic data (Kossek et al., 1994), and recruiting and retaining employees (Panayotopoulou et al., 2007).

Summing up, the implementation of an HRIS changes an HR employee's role as well as her work routines. When an employee does not like these changes, she evaluates the newly implemented HRIS – as reason for these changes – in a negative manner or vice versa. Hence, the employee has in the first instance a decreasing or increasing job satisfaction and in the second instance an increased or decreased turnover intention (e.g., Podsakoff et al., 2007). As job satisfaction itself is factor influencing turnover intention, we assume:

H5. *The more positive an individual's job satisfaction, the lower the turnover intention.*

H6. *The more positive an individual's attitude toward using an implemented HRIS, the lower the turnover intention.*

As discussed above, if an HRIS implementation induces stress at the individual level and the perceived change is threatening, an employee will consider leaving her job. Thus, H6 states, the employee attitude regarding using an HRIS has a direct impact on turnover intention. Nonetheless, if an HRIS changes an individual's job, the perceptions of the change object also influences that individual's job satisfaction, since job satisfaction reflects a general attitude about the job situation.

Fig. 1 illustrates our research model of HRIS impact on HR personnel job satisfaction and turnover intention. We assume that the perception of the HRIS-induced changes in an HR department influences employee job satisfaction and turnover intention, such that the model comprises two technology-related beliefs – perceived usefulness and ease of use – and attitude regarding the new information system from technology acceptance research as well as job satisfaction and turnover intention as work-related consequences. In the next section, we provide empirical evidence for the proposed model.

3. Empirical evidence

To evaluate the proposed research model, we observed one of the world's leading automotive parts suppliers throughout its implementation of an e-Recruiting system. The organization has upwards of 50,000 employees in more than 100 locations and generates several billion euro in revenues each year. We surveyed the 150 HR professionals responsible for the recruiting

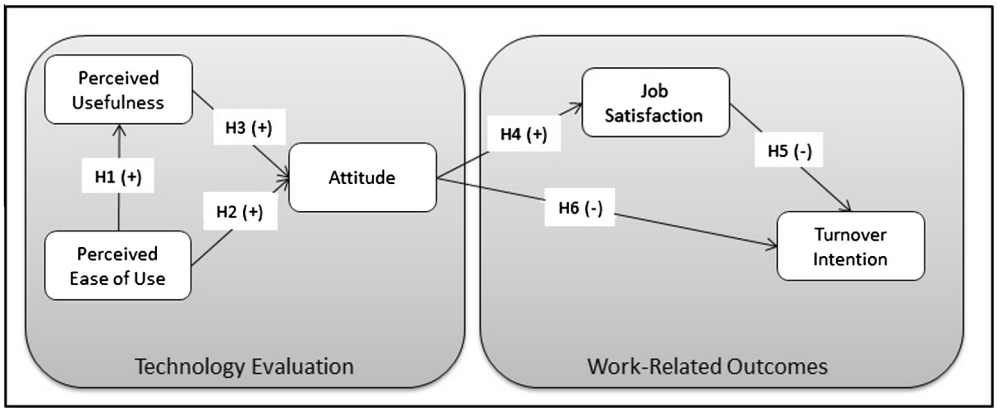

Fig. 1. Research model of HRIS impact on HR employees' job satisfaction and turnover intentions.

process. In the following section, we describe the implementation settings and survey instrument used to validate the research model. We then present the results of the model validation.

3.1. Research methodology

To gather empirical evidence for our proposed research model, we designed a survey instrument to validate our assumptions and used it during the implementation of an HRIS in the organization just described to assess perceptions of the implemented system and the corresponding work-related consequences for the HR personnel affected. In the following sub-section, we describe the implementation setting, after which we introduce the survey instrument.

3.2. Strategic e-Recruiting implementation

The company we observed decided to implement a new e-Recruiting system in 2009. The system was implemented in the beginning of 2010 and went live in July 2010. The main objective was to replace existing legacy systems and enhance IT support in the recruiting process. The legacy systems were largely standalone tools that only supported several tasks of the recruiting process, with primarily paper-based execution. The new system (SAP E-Recruiting 6.0, Enhancement Package 6.0) is a single enterprisewide recruiting system used by every stakeholder of the recruiting process. The system is browser-based and employs a central database. Its architecture is similar to the proposed holistic architecture for e-Recruiting systems (Lee, 2007).

A new recruiting process, comprising six steps, was designed and is completely embedded within the HRIS. The new process replaces the old paper-based management work routines of each employee, which did not require a high level of standardization. However, process standards are a precondition with the new system.

The new process begins whenever a company department reports a job vacancy. This initiates the responsible recruiter to prepare a job advertisement to be published on the company website, at job portals, or in print. After applicant CVs are received, they are saved in the HRIS database. Using the HRIS, HR employees select applicants and forward corresponding applications to the responsible hiring manager. In the last step, the hiring manager and recruiter collaborate and decide whether to recruit a particular applicant.

With the new process and work routines, the organizations have reduced administrative tasks and have redesigned the role of the recruiting department as a strategic partner for business units and as an employee champion to maximize (potential) employees' commitment and competencies. The organization's objective was to change the role of the recruiting department by implementing the new e-Recruiting system. The old process was organized differently at every branch of the organization, so central HR management and even the central recruiting management were unable to generate key performance indicators and to get an overview of the company's recruiting situation. It was impossible to monitor adequately or guarantee process quality, effectiveness, or efficiency. With the new process and the corresponding HRIS support, though, the organization can monitor and control the entire process and measure key performance indicators. For example, the organization can control for time and costs per hire and the effectiveness of job ads in different channels. This allows for continuous improvement of different recruiting measures. Moreover, in the past every branch was responsible for filling its own vacancies. There was no coordination or collaboration between branches when it came to recruiting qualified employees. By entering every incoming application into the new e-Recruiting system, the organization now has a centralized talent pool accessible to every recruiter in the company.

In addition, the new role of HR personnel "talent manager" has been implemented along with the new system. Talent managers are responsible for identifying key positions, positions with high talent scarcity, and for planning long-term activities to fill these positions. Talent managers support local branches when a position with high talent scarcity has to be filled, and they are the key users of the new centralized talent pool. Talent managers are also responsible for searching external sources, such as databases of job boards or social media sites such as LinkedIn.

Thus, by implementing the new e-Recruiting system, the organization has automated, optimized, and integrated the different steps of the recruiting process, while also enabling a more strategic orientation of the HR department. The time saved with the new system is used by HR personnel to perform new tasks, and they have become more like consultants to the business rather than administrative support.

3.3. Data collection and sample characteristics

To gather opinions about the implemented e-Recruiting system, we undertook an empirical study in 2010, during which we surveyed 150 HR employees at implementation stage. All 150 are power users of the new HRIS: each employee must use the system daily to accomplish her or his work assignments. We asked these HR employees about their beliefs and attitude regarding the usefulness and ease of use of the HRIS, as well as their degree of job satisfaction and turnover intentions.

The survey, which was online for 2 weeks, yielded 106 returned questionnaires, for a response rate of 70.6%. The survey was supported by top- and project management, who asked all HR employees to participate in the survey and who provided us direct access to all 150 affected employees during their training sessions and for personal interviews. The entire survey was conducted anonymously; individual respondents cannot be identified. To decrease the probability of social desirability, the job satisfaction and turnover intention data were not given to company managers, and this was stated explicitly in the survey instructions.

Table 1 breaks down the demographics of our data sample.

3.4. Associated interviews

Before and after the survey, we also conducted interviews to accompany the empirical survey. These took place with different employees of the organization during both the pre- and post-implementation phases of the information system. Interviewees were selected to obtain a cross-sectional view of the acceptance of the new HRIS within the organization. Interviewees work at different branches and are at different levels of the hierarchy (e.g., Recruiter, HR specialist, HR manager responsible for both the process in general and the HRIS-related changes in particular, see Table 2). In total, we conducted 22 interviews with 17 employees (11.3% of the total number of employees affected by the changes). Each interview has been recorded and transcribed. We use these interviews to extend our understanding of the results of the empirical survey. The interviews were also used to pre-test the survey instrument used in the empirical study.

3.5. Survey instrument

In the empirical survey, we used the following measurement models for the constructs of our research model (see Table 4 in the Appendix A).

3.5.1. Perceptual beliefs

To capture an employee's beliefs about the ease of use and usefulness of the implemented HRIS, we made use of the measurement items introduced by Davis et al. (1989) and specified by Taylor and Todd (1995). We modified the scales to fit the HR domain context. Both perceptual beliefs were measured with a global single-item statement: "Overall, I would find the new e-Recruiting system useful in my job" and "Overall, I would find the new e-Recruiting system easy to use." Employees of the organization could respond based on a 7-point Likert scale with anchors by 1 (strongly disagree) and 7 (strongly agree). In addition to these global items, we used three more detailed questions for perceived usefulness as well as perceived ease of use. Overall, the alpha coefficient of both perceptual beliefs perceived usefulness ($\alpha = 0.93$) and perceived ease of use ($\alpha = 0.95$) are high.

Table 1
Demographics of HR personnel.[a]

Gender	
Male	23.6%
Female	62.3%
Age	
Older than 45	16.0%
36–45	25.5%
25–35	23.6%
Under 25	11.3%
Work experience	
Less than 5 years	23.6%
5–10 years	22.6%
11–15 years	13.2%
More than 15 years	12.3%

[a] These results represent participants' own answers, and those who did not indicate their gender, age, and tenure are not included.

Table 2
Number of HR employees interviewed (m = male; f = female).

	Headquarters	Branch A	Branch B	Branch C	Total
HR manager	1 m; 1 f	–	–	–	1 m; 1 f
HR specialist	0 m; 3 f	1 m; 1 f	1 m; 1 f	0 m; 2 f	2 m; 7 f
Recruiter	0 m; 1 f	0 m; 4 f	0 m; 1 f		0 m; 6 f
Total	1 m; 5f	1 m; 5 f	1 m; 2 f	0 m; 2 f	3 m; 14 f

3.5.2. Attitude

We measured an employee's attitude about using an HRIS based on Taylor and Todd (1995). Here, we used a 7-point Likert scale on which 7 indicated an individual's strong agreement with the statement and 1 indicated an individual's strong disagreement. The resulting alpha coefficient with a value of $\alpha = 0.95$ is high.

3.5.3. Job satisfaction

We used three questions to characterize an employee's satisfaction at work. A 7-point Likert scale, with anchors by 1 (strongly disagree) and 7 (strongly agree), is used to capture an employee's evaluation of the overall job. This scale is based on Bartol (1983), Thatcher et al. (2002), and Lee et al. (1999), and provides a good alpha coefficient ($\alpha = 0.83$).

3.5.4. Turnover intention

Turnover intention is the dependent variable within our research model. This variable reflects an employee's intention to quit the job voluntarily. Thus, it is different from involuntary turnover, planned staff reduction, or reduction in force. We based the measurement of turnover intention on prior research (Hom and Katerberg, 1979; Lee et al., 1999; Thatcher et al., 2002) focused on voluntary turnover intention. Finally, we made use of a 7-point Likert scale on which 1 indicated an individual's strong disagreement with the statement and 7 a strong agreement. Turnover intention comprises a behavioral dimension, expressed as "I intend to quit my job"; cognitive thoughts about leaving the organization, expressed as "I think about leaving my actual employer" or "I think often about quitting my job at my current employer." These are in line with previous studies on turnover intention. The resulting alpha coefficient of the three items is high ($\alpha = 0.94$).

3.5.5. Control variables

To control our results, we included the three demographical variables age, gender, and work experience, as well as one personality trait. Prior research suggests these as influencing factors for technology evaluations and work-related outcomes (e.g., Venkatesh et al., 2003; Judge et al., 1999). As the personality trait, we included dispositional resistance to change (Oreg, 2003), which reflects an employee's predisposed inclination to prefer the status quo to changes. We chose this trait as a control variable for two reasons. One, it is conceivable that more-resistant employees generally evaluate new technologies to be worse than less-resistant employees, or that the work-related outcomes of more- and less-resistant employees could not be compared (as, e.g., resistant employees are indisposed to quit). Two, we favor measuring the narrower trait resistance to change over higher-order traits such as neuroticism, extraversion, or openness to experience; prior research identifies the superiority of narrower traits when they directly fit the research objective (Paunonen and Ashton, 2001). Moreover, Polites and Karahanna (2012) also selected the trait dispositional resistance to change as a control variable in their research.

3.6. Research results

The measurements presented above were used to evaluate the research model empirically. To validate the hypotheses, we transferred the research model into a structural equation model (Chin, 1998a). We used the partial least squares method and SmartPLS (Ringle et al., 2005), as this is suitable for small data samples (Chin and Newsted, 2000). However, before

Table 3
Descriptive statistics and correlations.

Variable		Mean	SD	1	2	3	4	5	6	7	8
1.	Age	36.75	10.10								
2.	Gender	1.72	0.45	−0.32*							
3.	Work experience	9.08	7.62	0.59*	−0.25*						
4.	Dispositional resistance to change	3.12	0.68	0.02	−0.08	0.02					
5.	Perceived usefulness	5.16	1.12	−0.02	−0.11	−0.21	−0.03				
6.	Perceived ease of use	4.89	1.13	−0.34*	0.03	−0.20	−0.33*	0.76*			
7.	Attitude	5.85	0.96	−0.04	−0.08	−0.05	−0.08	0.74*	0.67*		
8.	Job satisfaction	5.77	0.97	−0.04	0.16	0.00	−0.47*	0.35*	0.54*	0.47*	
9.	Turnover intention	2.24	1.32	−0.13	−0.08	−0.05	0.10	−0.22	−0.31*	−0.31*	−0.69*

* $p < 0.05$.

presenting the results of the study, we analyzed the data to determine whether it is affected by common method bias and to provide means, standard deviations, and correlations among study variables as well as control beliefs (Table 3). The average age is 36.75 years and the average work experience is 9.08 years. The data set contains more female than male participants. As Table 3 indicates, only perceived ease of use is affected by the age of the survey participants, such that age, gender, and work experience are not influencing factors for the variables of our research model. The observed personality trait resistance to change correlated with ease of use and job satisfaction measure indicates that the more an individual is inclined to resist changes, the more negatively the new system is perceived and the lower an individual's job satisfaction. Thus, the personality of the surveyed individuals has an influence on two variables of our research model.

3.7. Common method bias

In line with Podsakoff and colleagues (2003), we consider that self-reported data such as that in our survey could imply common method bias (CMB). We conducted a statistical analysis to identify the extent of common method bias. In a first step, we added a CMB factor into the PLS-model (Podsakoff et al., 2003; Williams et al., 2003) that contains every indicator of the origin model. The remaining origin factors were transformed into single-item constructs. Next, we compared the ratio of R^2 and path coefficients with CMB factor to R^2 and path coefficients without CMB factor. As the method factor explains a delta of R^2 of 0.009 and the R^2 without this factor is 0.838, we got a ratio of 1:95. Furthermore, we compared the path coefficients from the CMB factor and the original construct and revealed a ratio of 1:371 for path coefficients and 1:32 for squared path coefficients (see Table 5 in the Appendix A). By comparing this with prior research investigating CMB (Liang et al., 2007), we can state that we observe no signs of CMB influence.

3.8. Measurement model

As both perceptual beliefs and attitude of TAM, as well as the two work-related outcomes, are measured by reflective indicators, content validity, indicator reliability, construct reliability, and discriminant validity needed to be observed to validate the measurement model (Bagozzi, 1979).

3.8.1. Content validity

As argued above, the items we used have proven to be robust in prior research approaches and are thus suitable measurement items. We simply adapted the items to fit the HR context where necessary. To ensure content validity, the items were discussed with the project management of the implementation project we observed and a pre-test was conducted with five HR employees of the organization.

3.8.2. Indicator reliability

The indicator reliability indicates the rate of the variance of an indicator that comes from the latent variables. To explain at least 50% of the variance of a latent variable by the indicators, each value must be 0.707 or greater (Carmines and Zeller, 2008). This condition was fulfilled (see Table 6 in the Appendix A). In addition, all loadings have a significance level of at least 0.001 and are highly significant. This was tested by performing bootstrap method with 5000 samples.

3.8.3. Construct reliability

We used the concepts composite reliability (CR) and average variance extracted (AVE) to determine quality at the construct level (Fornell and Larcker, 1981). Here, CR should be higher than 0.7 and AVE higher than 0.5. As the Appendix A (Table 6), both criteria are fulfilled within our research model.

3.8.4. Discriminant validity

Discriminant validity describes the extent to which measurement items differ from one another (Campell and Fiske, 1959). Therefore, the square root of AVE is contained on the diagonal of latent variable correlation (see Table 6 in the Appendix A). As these square root values are greater than the corresponding construct correlations (Fornell and Larcker, 1981; Hulland, 1999), we can state that this requirement has been fulfilled and the measurement model is valid.

3.9. Structural model

We used the coefficient of determination (R^2) and significance levels of each path coefficient to evaluate the structural model (Chin, 1998b). Fig. 2 indicates that the perceptual beliefs and attitude of TAM explain 23% of the variance of an employee's job satisfaction. In addition to that the two attitudes – toward IT as well as job – explain about 48% of the variance of turnover intention. Besides, the R^2 of perceived usefulness and attitude are both 58% (Fig. 2). Concerning the path coefficients, we could state that solely one hypothesized path is not significant. This non-significant path within the research model is the relation between attitude and turnover intention.

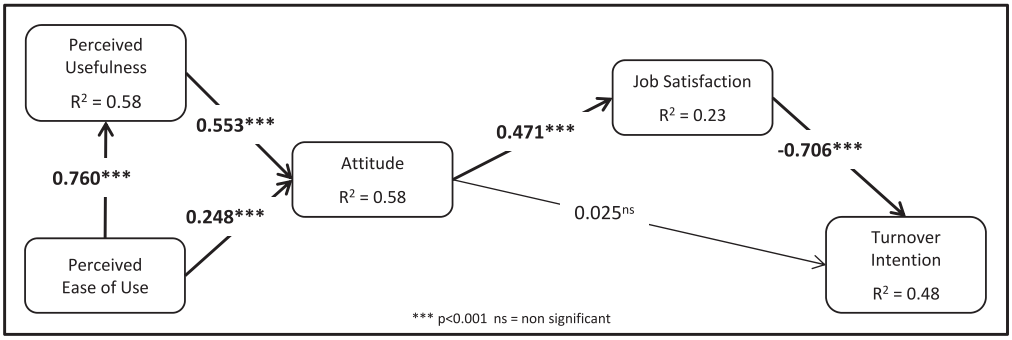

Fig. 2. Structural model validation.

3.10. Mediation effect

To test whether an employee's job satisfaction mediates the relationship between attitude toward HRIS and turnover intention, we used the three-step approach proposed by Baron and Kenny (1986), the Sobel test (Sobel, 1982), and a Bootstrapping method (2004).

Baron and Kenny (1986) suggest that a mediating effect is present if three conditions are fulfilled. First, the independent variable must predict the mediator. Second, the independent variable must also be a predictor of the dependent variable. Third, the predictive power must decrease when integrating the mediator into the relationship between independent and dependent variable. Transferred into our model, attitude toward the HRIS had a positive significant impact on the mediator job satisfaction ($\beta = 0.455$; $p < 0.001$) as well as a negative significant influence on the dependent variable turnover intention ($\beta = 0.294$; $p < 0.001$). By integrating job satisfaction with the relationship between attitude and turnover intention, the significant effect of attitude on an employee's turnover intention ($\beta = 0.025$; $p > 0.3$) diminished, whereas the influence of job satisfaction on turnover intention ($\beta = -0.706$; $p < 0.001$) became significant. This means that job satisfaction fully mediates the influence of attitude on turnover intention.

In addition, we used the Sobel test (Sobel, 1982), as it represents a rigorous, conservative, and confirmatory method to test mediation (Baron and Kenny, 1986). The result ($z = -4.19$; $p < 0.001$) indicated that an indirect effect exists within our model.

Finally, we performed a bootstrapping method as proposed by Preacher and Hayes (2004). Here, the indirect effect of attitude toward HRIS on turnover intention through an employee's job satisfaction was −0.38, and the associated 95%-bias-corrected confidence interval was between −0.735 and −0.149 (1000 number of bootstrap resamples). Because zero is not within this bias-corrected interval, the bootstrapping method supports our hypothesis that an indirect mediating effect exists.

4. Discussion, implications, and limitations

What are unintended consequences of HRIS implementations in the workplace? From a negative point of view, we can conclude that organizations have to expect that the introduction of a new HRIS can be perceived as threatening and annoying by HR employees and thereby decrease job satisfaction and increase turnover intentions. However, from a positive point of view, we can conclude that if the new HRIS is evaluated positively, job satisfaction increases and turnover intention decreases. These results of our single-point empirical study have several implications for both (e-)HRM and technology adoption research, which we now discuss.

4.1. (Un)intended individual-level consequences of HRIS implementations

Our results show that in addition to economic and strategic impact for the organization, which are intended and discussed in prior research (Lee, 2007; Strohmeier, 2007, 2009), an HRIS implementation also has work-related impacts on each employee who works with the system daily. This influence is particularly noticeable in employee job satisfaction and turnover intention. Our results indicate that the implementation of an HRIS that is perceived as useful, easy to use, and generally positive by HR-employees is the precondition for being satisfied within the job in a mandatory HRIS change context. This is in line with Bondarouk and Ruël (2009), who call for investigating a specific HRIS stakeholder, namely, HR personnel, and Elkins and Philips (2000), who deem it important to consider HR personnel's perceptions during the implementation of an HRIS.

However, our results also indicate that job satisfaction declines and turnover intention increases if the HRIS is perceived as threatening. Thus, negative job satisfaction and increasing turnover intentions are unintended consequences of HRIS

implementations in organizations. If organizations do not succeed in creating a positive image of an HRIS, HR employees become dissatisfied. In this situation, the pitfall for organizations is that negative occurrences are more dominant in the long run than positive ones (Ito et al., 1998). For example the simplification of one's daily work may only last a short period of time, but negative effects such as changing work routines or HR identities have long-lasting effects. As a consequence, such negative experiences decrease satisfaction and increase turnover intention.

Our results indicate that job satisfaction and turnover intention as work-related consequences are two examples of unintended individual-level consequences of an HRIS implementation. In this context of e-HRM consequences, Strohmeier (2009) concludes that prior research lacks an explicit concept of e-HRM consequences. These approaches (see Strohmeier, 2009 for an overview) indicate a low level of problem awareness in both research and practice regarding (un)intended consequences of HRIS implementations. Strohmeier (2009) identifies positive consequences of e-HRM such as reducing costs, speeding up processes, improving quality, and even gaining a more strategic role for HR within the organization. These examples of HRIS success can be classified as organizational consequences. He concludes that "besides expected and desired consequences e-HRM will also yield unexpected and undesired result" (p. 539) which thus far have not been the focus of research. Hence, he calls for research that raises the level of awareness regarding (un)intended consequences of HRIS implementation. Our research is a direct response to this conclusion, as we propose and evaluate the individual-level consequences of an HRIS implementation. In addition to organizational consequences (e.g., process improvements, strategic role of HR), implementation of an HRIS also influences individual level consequences such as job satisfaction and turnover intention. Thus, based on our results, we extend current HRIS-consequences research by proposing individual-level consequences as a new dimension.

This new dimension of individual-level consequences is also important when discussing HRIS implementation success models (e.g., Lippert and Swiercz, 2005). In this context, Lippert and Swiercz (2005) define HRIS implementation as a success if a new system completely replaces a previous system, if functionality of the new system is realized, and if its acceptance permeates the entire organization. Nevertheless, it is a least worthy of discussion whether one can still classify a system implementation as successful if the aforementioned preconditions are fulfilled and employees begin to use the system, but their job satisfaction is declining and even some of them quit their jobs. Based on our results, we recommend extending this definition of HRIS implementation success to include individual-level consequences as an additional dimension to the organizational success dimension. On the one hand, we suggest that an HRIS implementation is unsuccessful if employee job satisfaction decreases and turnover intention increases. On the other hand, we propose that an implementation is a sufficient success when it does not affect job satisfaction and turnover intention of HR personnel at all and a significant success when job satisfaction increases and turnover intention decreases. By considering these (un)intended consequences as an additional dimension of HRIS implementation success, the individual-level consequences (Parry and Tyson, 2008) can be discussed in more detail in addition to the well-researched organizational consequences (Buckley and Monks, 2004; Caldwell, 2003; Wright, 2008).

Future research could build on the results of our study. First of all, as discussed above, HRIS implementation success researchers should include work-related consequences as an additional dimension of HRIS success. Moreover, research on HRIS consequences should include the newly proposed dimension of individual-level consequences in addition to organizational consequences in order to draw a more complete picture of HRIS consequences. However, future research might also analyze how the impact of a general attitude toward the new HRIS influences work-related consequences over time. It would be also interesting to see whether job satisfaction and turnover intention are influenced by the system implementation more at early implementation stages (as in our case) or when the system runs over a distinct time and employees use it in their daily work.

4.2. HRIS-implementations and HR identity

The intended consequences of the HRIS implementation in our study (e.g., to automate operative and routine tasks) also provide more time for the current HR staff to focus increasingly on strategic tasks in HRM (see the research methodology section above). This development provides HR personnel with resources for more strategic and people-oriented tasks; recent studies on HR identity reveal a transformation of HR from the administrative expert to a strategic partner, change agent, or employee champion in organizations (Wright, 2008), just as we observed during the pre-survey interviews in our study. This transformation also demands a change of HR employees' tasks, work routines, competencies, and capabilities, as well as their individual acceptance of these changes (Wiblen et al., 2010). However, if HR personnel have a negative perception of the implementation of HRIS in organizations as an enabler of the strategic HR role, one might argue that the new strategic role is not completely accepted by the affected employees, since their job satisfaction decreases. This could be due to the fact that HR personnel are known to use HRIS only for automated routinized tasks (Ngai and Wat, 2006), while neglecting its strategic potential. So, one might conclude that HR employees have not yet changed their occupational identity. Thus, the HRIS-enabled move from administrative HRM to strategic e-HRM requires an even closer integration with the business organization, ensuring employee engagement and morale and acting as change advocate and agent (Ulrich and Brockbank, 2005; Wright, 2008).

Based on the results in our case, we show that the implementation of a new HRIS, which enables the transformation of HRM, can affect individual work-related consequences that are associated with HR personnel's identity. In our case, (HR) management initiated the project to enable the strategic partner and employee champion role of HR, and the occupational identity of HR personnel in the organization has changed.

Most of the HR personnel welcomed the increasing automation of HR tasks (Table 3); however, we also found some resistance to the new role of HR. Consequently, the perception of the HRIS and the changing HR identity are different reasons for the extent of system acceptance. This differentiation may be important for future research when discussing the impact of HRIS implementation on individual work-related consequences, as the acceptance of the new role of HR is an important aspect of an HRIS implementation project. Future research could build on our results and develop a research model that differentiates between the HRIS as technology and the changing HR identity that may be accepted or resisted by HR personnel. By doing so, future research could provide empirical evidence for the different explanatory power of these two reasons for technology acceptance of and user resistance to e-HRM.

4.3. Technology adoption research and work-related consequences

Additionally, our results provide important contributions for technology adoption research. First, we can answer Brown et al.'s (2002) question regarding factors influenced by individual attitudes in mandatory settings. We provide evidence that the attitude toward an IS influences job satisfaction and turnover intention. Since employees have no option to use another IS or non-IT-supported work routine in mandated settings, it is through changing job satisfaction and intention to quit the job that the technology can be evaluated. We also substantiate their statement that "[a]ttitudes can have a significant influence on an individual's perception of work environment and organization" (Brown et al., 2002, p. 291). We show in greater detail that a technology-related attitude has a direct impact on the satisfaction with one's situation in the work environment. Second, we follow Venkatesh et al. (2007) and Morris and Venkatesh (2010) by integrating job satisfaction and turnover intention, two important organizational variables, into technology adoption research. This enables us to consider other dependent variables rather than focusing only on intention to use a technology.

Job satisfaction and turnover intention represent potential dependent variables for future research studies in mandated technology usage settings. If one is interested in measuring differentiated behavioral consequences of system implementations, as called for by Brown et al. (2002) and Venkatesh et al. (2007), job satisfaction and turnover intentions could be used, since an employee may, on the one hand, use the new technology as expected by management, and, on the other hand, job satisfaction and turnover intention are either positively or negatively affected. Based on our results, we can conclude that there is a variance in job satisfaction and turnover intention that is observable during system implementations and is predictable by an individual's acceptance of a technology. With our results, we break open the black box of the technology-focused attitude-behavior relationship in the technology acceptance model, as suggested by Straub and Burton-Jones (2007). We integrate the two technology-independent attitudes job satisfaction and turnover intention into our model. Thus, we can conclude that the evaluation of a technology has an impact on technology-independent attitudes such as job satisfactions and behavioral intentions such as turnover intention.

Moreover, our results are also significant for user resistance research. The two unintended consequences of system implementations, decreasing job satisfaction and increasing turnover intention, represent additional forms of user resistance beyond those already identified and discussed in prior research (e.g., intention to resist, sabotage, workarounds, see Ferneley and Sobreperez, 2006). If an individual is threatened by the new technology but has to use it as demanded by management, observable consequences and behaviors are, according to our results, work-related ones, such as decreasing job satisfaction and increasing turnover intention. Thus, the intention to quit and the resulting voluntary turnover is another example of user resistance behavior during the implementation of new information systems. Moreover, decreasing job satisfaction represents an additional attitude and both are observable variables of user resistance.

Future research might consider both variables as important aspects of user resistance studies and employ job satisfaction as an attitudinal response of negative system perceptions and turnover as a behavioral one, since both variables are observable in the pre- and post-implementation phases. Although we show the mediated impact on turnover intention, we were not able to control for actual voluntary turnover within our study, as this would require a longitudinal research setting and we performed only a single-point study. Future research might also include actual voluntary turnover into our model and show the influence of system implementations on voluntary turnover. Nonetheless, research with other organizations (Laumer et al., 2012) show that employees indeed quit their jobs after a while when they feel threatened by the implementation of a new information system. Another important aspect for future research is to identify and discuss additional work-related consequences such as commitment to change and the impact of system implementations on these variables.

4.4. Practical implications

Our results of HRIS consequences, HR identity, and technology adoption research also have some implications for practice. First of all, the results indicate that by ensuring the usefulness and ease of use of the system, an organization can influence job satisfaction and turnover intention in a positive manner. For example, in the organization we studied, job satisfaction decreased among individuals who were threatened by too many clicks and who felt that too much time was necessary to handle the system. Moreover, the wait while opening attachments was criticized by several employees as a disruption to their daily work routines, especially in those sub-departments that receive a large number of applications. Another aspect perceived negatively was manual data entry of incoming paper-based applications, particularly in those departments advertising blue-collar jobs that have a high percentage of such applications. Moreover, not everyone agreed with the quality

control introduced for the publication of job ads. Thus, the organization focused on these aspects of ease of use and usefulness of the new HRIS to increase acceptance in the post-implementation phase. Our results also indicate that employee turnover is not a direct consequence of a system implementation. The effect is mediated by job satisfaction such that organizations are able to decrease turnover intentions by ensuring job satisfaction with different measures (e.g., reward systems, work-life balance, etc.). These measures can compensate for the negative impact of the system implementation and consequently reduce the intention to quit.

Second, our results indicate that project management not only must convince HR employees of the ease of use and usefulness of the new HRIS, but must also make assurances so that there is a positive attitude toward the changing HR identity. When employees can be assured about these aspects of the HRIS, and acceptance for the changing HR identity can be won, the likelihood increases that job satisfaction increases and turnover intention decreases.

Third, as we can show by analyzing the full mediation effect of technology perceptions on turnover intention via job satisfaction, we can conclude that there is no direct voluntary turnover based on system implementation. Employees will remain in the organization and continue to gain experience with the new system, although their job satisfaction may decrease. With our qualitative research, we are able to indicate that only after a while, if perceptions that the system is a threat worsen, do voluntary turnovers occur. In the post-implementation phase, before intent becomes behavior, organizations can take steps mitigate whatever may cause declining job satisfaction so that it again increases and makes the likelihood of voluntary turnover as low as possible.

5. Limitations

The generalizability of our results is limited, as the empirical data come from one firm and from the introduction of an e-Recruiting system in one organization with HR employees, exclusively, from a single country. Therefore, system and national particularities need to be analyzed in future research. In particular, employees with other cultural backgrounds at companies in other countries could process the mandatory HRIS usage in a different manner. Moreover, we used turnover intention – rather than actual turnover – as a dependent variable because turnover itself is closely related to general economic conditions, which are hard to control for (Sherman, 1986). Hence, the results do not allow for a discussion of actual turnover behaviors of HR personnel during the implementation of HRIS, but provide only empirical evidence for a discussion of turnover intentions and the related job satisfaction of employees.

In addition, the focus of this article is on unexpected consequences. Hence, we concentrate only on the two independent variables perceived ease of use and perceived usefulness. Although these two variables are sufficient for our purposes, namely, to explain employee attitudes regarding the HRIS as well as the effect of the newly implemented IS on job satisfaction and turnover intentions, we neglect including further antecedents of turnover intentions (e.g., organizational commitment) or perceptual beliefs (e.g., subjective norm, computer self-efficacy).

Another limitation is that we collected all empirical data at one time during the implementation, when the system went live. Hence, we do not know employee job satisfaction and turnover intentions prior to the HRIS being implemented, and thus we cannot take a final position as to whether the implementation of the HRIS increases turnover intentions of all HRIS users or only of those who already have a low level of job satisfaction. Although a retest or a longitudinal study could answer this question, we do not have the opportunity to capture data a second time. A retest would also indicate whether perceptual beliefs and attitude toward an HRIS always have a significant impact on job satisfaction and an indirect one on turnover intentions of HR employees, or whether the impact is exclusively found after implementation, as we tested in this article.

Another limitation is the skewed distribution of participants' gender, as considerably more women took part than men. Hence, we included control variables, but no correlation between gender and any perceptual belief or work-related outcome could be observed (Table 3). Although the same holds true for participants' work experience, our results are influenced by participants' age and predisposed resistance to change to a slight degree, as both correlate with perceived ease of use and the personality also correlates significantly with job satisfaction. Consequently, our results do not rest to a great degree on endogenous factors such as demographic variables or individual differences.

6. Conclusion

By observing the implementation of a new e-Recruiting system, we provide evidence that the implementation of an HRIS has a profound influence on the employees in terms of job satisfaction and turnover intention. Our study introduces individual-level consequences of HRIS implementations and raises the level of awareness regarding (un)intended consequences of HRIS implementations. The results reveal that an HRIS implementation not only has the anticipated effects, but that attitudes toward the new HRIS have an indirect effect on turnover intention that is fully mediated by job satisfaction. Our model explains nearly half of the variance of HR staff turnover intention and contributes to technology adoption research by integrating job satisfaction and turnover intention as two important organizational variables. It contributes to HRIS research by introducing individual-level consequences as an additional dimension of HRIS implementation success, and to HR identity research by discussing the impact of HRIS implementation on the occupational identity of HR personnel.

Appendix A

Table 4
Measurement model.

Construct-#	Item	Reference
PU-1	Overall, I would find the new e-Recruiting system useful in my job	Davis et al. (1989)
PU-2	Using the new e-Recruiting system enables me to accomplish tasks more quickly	
PU-3	Using the new e-Recruiting system increases my productivity	
PU-4	If I use the new e-Recruiting system, I will increase my chances of getting a raise	
PEOU-1	My interaction with the new e-Recruiting system would be clear and understandable	Davis et al. (1989)
PEOU-2	It would be easy for me to become skillful at using new e-Recruiting system	
PEOU-3	Overall, I would find the new e-Recruiting system easy to use	
PEOU-4	Learning to operate the new e-Recruiting system is easy for me	
ATT-1	Using the new e-Recruiting system is a good idea	Taylor and Todd (1995)
ATT-2	Using the new e-Recruiting system is a wise idea	
ATT-3	Using the new e-Recruiting system is pleasant	
JS-1	Overall, I am satisfied with my job	Thatcher et al. (2002)
JS-2	I am satisfied with the way I work at the moment	
JS-3	I am satisfied with the important aspects of my job	
TI-1	I think often about quitting my job at my current employer	Thatcher et al. (2002)
TI-2	I intend to quit my actual job	
TI-3	I think about leaving my actual employer	

Table 5
Common method bias.

	R^2 (CMB)	R^2	Delta R^2	Path (CMB)	Path^2 (CMB)	Path	Path^2
ATT-1	0.906	0.905	0.000	0.033	0.001	0.923***	0.852
ATT-2	0.897	0.893	0.003	−0.106*	0.011	1.035***	1.072
ATT-3	0.882	0.881	0.001	0.072	0.005	0.878***	0.770
JS-1	0.781	0.775	0.006	0.022	0.000	0.811***	0.658
JS-2	0.866	0.860	0.005	0.098	0.010	0.861***	0.741
JS-3	0.649	0.613	0.036	−0.258**	0.067	0.959***	0.919
PEOU-1	0.850	0.846	0.004	−0.049	0.002	1.052***	1.107
PEOU-2	0.755	0.732	0.023	0.339***	0.115	0.553***	0.305
PEOU-3	0.914	0.908	0.006	−0.169**	0.029	1.104***	1.219
PEOU-4	0.883	0.883	0.000	−0.010	0.000	0.948***	0.899
PU-1	0.870	0.865	0.005	−0.033	0.001	1.044***	1.089
PU-2	0.762	0.735	0.026	−0.310**	0.096	1.122***	1.259
PU-3	0.882	0.880	0.002	0.083	0.007	0.867***	0.752
PU-4	0.823	0.793	0.030	0.331***	0.110	0.608***	0.370
TI-1	0.805	0.805	0.000	−0.018	0.000	0.888***	0.788
TI-2	0.944	0.944	0.000	−0.010	0.000	0.966***	0.934
TI-3	0.935	0.934	0.000	0.026	0.001	0.980***	0.961
Mean	0.847	0.838	0.009	0.002	0.027	0.918	0.864

Table 6
Measurement model validation and bivariate correlation coefficients.

Item	Loading	AVE	CR	PU	PEOU	ATT	JS	TI
PU-1	0.928	0.82	0.95	0.90				
PU-2	0.847							
PU-3	0.941							
PU-4	0.899							
PEOU-1	0.912	0.84	0.96	0.76	0.92			
PEOU-2	0.869							
PEOU-3	0.951							
PEOU-4	0.935							
ATT-1	0.952	0.89	0.96	0.74	0.67	0.95		
ATT-2	0.944							
ATT-3	0.940							
JS-1	0.911	0.74	0.89	0.35	0.54	0.47	0.86	
JS-2	0.937							
JS-3	0.716							
TI-1	0.968	0.89	0.96	−0.22	−0.31	−0.31	−0.69	0.95
TI-2	0.893							
TI-3	0.973							

On the diagonal the square root of the AVE. Loadings are significant on $p < 0.001$ level.

References

Adams, K., 1991. Externalisation vs specialisation: what is happening to personnel? Human Resource Management Journal 1 (4), 40–53.

Adler, P., 2003. Making the HR outsourcing decision. MIT Sloan Management Review 45 (1), 53–60.

Bagozzi, R.P., 1979. The role of measurement in theory construction and hypothesis testing: toward a holistic model. In: Ferrell, O.C., Brown, S.W., Lamb, C.W. (Eds.), Conceptual and Theoretical Developments in Marketing. American Marketing Assoc., Chicago, Ill., pp. 15–32.

Ball, K., 2001. The use of human resource management systems: a survey. Personnel Review 30 (6), 677–693.

Baron, R.M., Kenny, D.A., 1986. The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology 51 (6), 1173–1182.

Bartol, K.M., 1983. Turnover among DP personnel: a casual analysis. Communications of the ACM 26 (10), 807–811.

Beckers, A.M., Bsat, M.Z., 2008. A DSS classification model for research in human resource information systems. Information Systems Management 19 (3), 1–10.

Bondarouk, T., Ruël, H., 2009. Electronic human resource management: challenges in the digital era. International Journal of Human Resource 20 (3), 505–514.

Bondarouk, T., Ruël, H., van der Heijden, B., 2009. E-HRM effectiveness in a public sector organization: a multi-stakeholder perspective. International Journal of Human Resource Management 20 (3), 578–590.

Boudreau, M.-C., Robey, D., 2005. Enacting integrated information technology: a human agency perspective. Organization Science 16 (1), 3–18.

Brockbank, W., 1999. If HR were really strategically proactive: present and future directions in HR's contribution to competitive advantage. Human Resource Management 38 (4), 337–352.

Brown, S.A., Massey, A.P., Montoya-Weiss, M.M., Burkman, J.R., 2002. Do I really have to? User acceptance of mandated technology. European Journal of Information Systems 11, 283–295.

Buckley, F., Monks, K., 2004. The implications of meta-qualities for HR roles. Human Resource Management Journal 14 (4), 41–56.

Burke, R.J., 2001. Workaholism components, job satisfaction, and career progress. Journal of Applied Social Psychology 31 (11), 2339–2357.

Caldwell, R., 2003. The changing roles of personnel managers: old ambiguities, new uncertainties. Journal of Management Studies 40 (4), 983–1004.

Campell, D.T., Fiske, D.W., 1959. Convergent and discriminant validation by the multitrait–multimethod matrix. Psychological Bulletin 56 (2), 81–105.

Carmines, E.G., Zeller, R.A., 2008. Reliability and Validity Assessment. Sage Publ., Newbury Park, Calif..

Chin, W.W., 1998a. Issues and opinion on structural equation modeling. MIS Quarterly 22 (1).

Chin, W.W., 1998b. The partial least squares approach to structural equation modeling. In: Marcoulides, G.A. (Ed.), Modern Methods for Business Research. Erlbaum, Mahwah, NJ, pp. 295–336.

Chin, W.W., Newsted, P.R., 2000. Structural equation modeling analysis with small samples using partial least squares. In: Hoyle, R.H. (Ed.), Statistical Strategies for Small Sample Research. Sage Publ., Thousand Oaks, Calif., pp. 307–341.

Cunningham, G., 2006. The relationships among commitment to change, coping with change, and turnover intentions. European Journal of Work and Organizational Psychology 15 (1), 29–45.

Davis, F.D., 1986. A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results. Doctoral dissertation, Sloan School of Management, Massachusetts, Institute of Technology.

Davis, F.D., 1989. Perceived usefulness, perceived ease of use and user acceptance of information technology. MIS Quarterly 13 (3), 319–340.

Davis, F.D., Bagozzi, R.P., Warshaw, P.R., 1989. User acceptance of computer technology: a comparison of two theoretical models. Management Science 35 (8), 982–1003.

Elkins, T.J., Philips, J.S., 2000. Job context, selection decision outcome, and the perceived fairness of selection tests: biodata as an illustrative case. Journal of Applied Psychology 85 (3), 479–484.

Ferneley, E.H., Sobreperez, P., 2006. Resist, comply or workaround? An examination of different facets of user engagement with information systems. European Journal of Information Systems 15 (4), 345–356.

Ferratt, T.W., Agarwal, R., Brown, C.V., Moore, J.E., 2005. IT human resource management configurations and IT turnover: theoretical synthesis and empirical analysis. Information Systems Research 16 (3), 237–255.

Fornell, C., Larcker, D.F., 1981. Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research 18 (1), 39–50.

Forst, L., 1997. Fulfilling the strategic promise of shared services. Strategy & Leadership 25 (1), 30–34.

Fried, Y., Ferris, G.R., 1987. The validity of the job characteristics model: a review and meta-analysis. Personnel Psychology 40 (2), 287–322.

Griffeth, R.W., Hom, P.W., Gaertner, S., 2000. A meta-analysis of antecedents and correlates of employee turnover: update, moderator tests, and research implications for the next millennium. Journal of Management 26, 463–488.

Hendrickson, A.R., 2003. Human resource information systems: backbone technology of contemporary human resources.. Journal of Labour Research 24 (3), 381–394.

Hom, P.W., Katerberg, R.H.C., 1979. Comparative examination of three approaches to the prediction of turnover. Journal of Applied Psychology 64 (3), 280–290.

Hom, P.W., Caranikas-Walker, F., Prussia, G.E., Griffeth, R.W., 1992. A meta-analytical structural equations analysis of a model of employee turnover. Journal of Applied Psychology 77 (6), 890–909.

Hulland, J.S., 1999. Use of partial least squares (PLS) in strategic management research: a review of four recent studies. Strategic Management Journal 20 (2), 195–204.

Hussain, Z., Wallace, J., Cornelius, N.C., 2007. The use and impact of human resource information systems on human resource management professionals. Information & Management 44 (1), 74–89.

Ilgen, D., Hollenbeck, J., 1991. The structure of work: job design and roles. In: Dunnette, M.D. (Ed.), Handbook of Industrial and Organizational Psychology. Consulting Psychologists Press, Palo Alto, CA, pp. 165–207.

Ito, T.A., Larsen, J.T., Smith, N.K., Cacioppo, J.T., 1998. Negative information weighs more heavily on the brain: the negativity bias in evaluative categorizations. Journal of Personality and Social Psychology 75 (4), 887–900.

Joseph, D., Kok-Yee, N., Koh, C., Soon, A., 2007. Turnover of information technology professionals: a narrative review, meta-analytic structural equation modeling, and model development. MIS Quarterly 31 (3), 547–577.

Judge, T.A., Thoresen, C.J., Pucik, V., Welbourne, T.M., 1999. Managerial coping with organizational change: a dispositional perspective. Journal of Applied Psychology 84 (1), 107–122.

Kanter, R.M., 2003. Foreword. In: Effron, M., Gandossy, R., Goldsmith, M. (Eds.), Human Resources in the 21st Century. Wiley, Hoboken, NJ.

Konradt, U., Hertel, G., Schmook, R., 2003. Quality of management by objectives, task-related stressors and non-task-related stressors as predictors of stress and job satisfaction among teleworkers. European Journal of Work and Organizational Psychology 12 (1), 61–80.

Kossek, E.E., Young, W., Gash, D., Nichol, V., 1994. Waiting for innovation in the Human Resources Department: Godot implements a human resource information system. Human Resource Management 33 (1), 135–159.

Lacity, M., Iyer, V., Rudramuniyaiah, 2008. Turnover intentions of Indian IS professionals. Information Systems Frontiers 10 (2), 225–241.

Laumer, S., Maier, C., Eckhardt, A., Weitzel, T., 2012. The Implementation of Large-scale Information Systems in Small and Medium-Sized Enterprises - A Case Study of Work- and Health-related Consequences. In: Proceedings of the 45th Hawaii International Conference on System Sciences, Maui (HI).

Lawler, E.E., Mohrman, S.A., 2003. HR as a strategic partner: what does it take to make it happen? Human Resource Planning 26 (3), 15–29.

Lee, I., 2007. An architecture for a next-generation holistic E-recruiting system. Communications of the ACM 50 (7), 81–85.

Lee, T.W., Mitchell, T.R., Holtom, B.C., McDaniel, L.S., Hill, J.W., 1999. The unfolding model of voluntary turnover: a replication and extension. Academy of Management Journal 42 (4), 450–462.

Liang, H., Saraf, N., Hu, Q., Xue, Y., 2007. Assimilation of enterprise systems: the effect of institutional pressures and the mediating role of top management. MIS Quarterly 31 (1), 59–87.
Lippert, S., Swiercz, P., 2005. Human resource information systems (HRIS) and technology trust. Journal of Information Science 31 (3), 340–353.
Locke, E.A., 1969. What is job satisfaction? Organizational Behavior and Human Performance 4, 309–336.
Lukaszewski, K.M., Stone, D.L., Stone-Romero, E.F., 2008. The effects of the ability to choose the type of human resources system on perceptions of invasion of privacy and system satisfaction. Journal of Business and Psychology 23 (3–4), 73–86.
March, J., Simon, H., 1958. Organizations. Wiley, New York.
Marler, J.H., Fisher, S.L., Ke, W., 2009. Employee self-service technology acceptance: a comparison of the pre-implementation and post-implementation relationships. Personnel Psychology 62 (2), 327–358.
Morris, M.G., Venkatesh, V., 2010. Job characteristics and job satisfaction: understanding the role of enterprise resource planning system implementation. MIS Quarterly 34 (1), 143–161.
Ngai, E.W.T., Wat, F.K.T., 2006. Human resource information systems: a review and empirical analysis. Personnel Review 35 (3), 297–314.
Ngai, E.W.T., Law, C.C.H., Chan, S.C.H., Wat, F.K.T., 2008. Importance of the internet to human resource practitioners in Hong Kong. Personnel Review 37 (1), 66–84.
Oreg, S., 2003. Resistance to change: developing an individual differences measure. Journal of Applied Psychology 88 (4), 680–693.
Oreg, S., Vakola, M., Armenakis, A., 2011. Change recipients' reactions to organizational change: a 60-year review of quantitative studies. The Journal of Applied Behavioral Science 47 (4), 1–64.
Panayotopoulou, L., Vakola, M., Galanaki, E., 2007. E-HR adoption and the role of HRM: evidence from Greece. Personnel Review 36 (2), 277–294.
Parry, E., Tyson, S., 2008. An analysis of the use and success of online recruitment methods in the UK. Human Resource Management Journal 18 (3), 247–257.
Paunonen, S.V., Ashton, M.C., 2001. Big five factors and facets and the prediction of behavior. Journal of Personality and Social Psychology 81 (3), 524–539.
Podsakoff, P.M., MacKenzie, S.B., Lee, J.-Y., Podsakoff, N.P., 2003. Common method biases in behavioral research: a critical review and recommended remedies. Journal of Applied Psychology 83 (5), 879–903.
Podsakoff, N.P., LePine, J., Lepine, M.A., 2007. Differential challenge stressor–hindrance stressor relationships with job attitudes, turnover intentions, turnover, and withdrawal behavior: a meta-analysis. Journal of Applied Psychology 92 (2), 438–454.
Polites, G.L., Karahanna, E., 2012. Shackled to the status quo: the inhibiting effects of incumbent system habit, switching costs, and inertia on new system acceptance. MIS Quarterly 36 (1).
Preacher, K.J., Hayes, A.F., 2004. SPSS and SAS procedures for estimating indirect effects in simple mediation models. Behavior Research Methods, Instruments, & Computers 36, 717–731.
Ringle, C.M., Wende, S., Will, A., 2005. SmartPLS. University of Hamburg.
Roepke, R., Agarwal, R., Ferratt, T.W., 2000. Aligning the IT human resource with business vision: leadership initiative at 3 m. MIS Quarterly 24 (2), 327–353.
Ruël, H., Bondarouk, T., Van der Velde, M., 2007. The contribution of e-HRM to HRM effectiveness: results from a quantitative study in a Dutch Ministry. Employee Relations 29 (3), 280–291.
Sherman, J., 1986. The relationship between factors in the work environment and turnover propensities among engineering and technical support personnel. IEEE Transactions on Engineering Management 33 (2), 72–77.
Singh, J., 1998. Striking a balance in boundary-spanning positions: an investigation of some unconventional influences of role stressors and job characteristics on job outcomes of salespeople. Journal of Marketing 62 (2), 69–86.
Sobel, M.E., 1982. Asymptotic confidence intervals for indirect effects in structural equation models. In: Leinhardt, S. (Ed.), Sociological Methodology. American Sociological Association, Washington, DC, pp. 290–312.
Stone, D.L., Lukaszewski, K., 2009. An expanded model of the factors affecting the acceptance and effectiveness of electronic human resource management systems. Human Resource Management Review 19 (2), 134–143.
Straub, D.W., Burton-Jones, A., 2007. Veni, Vidi, Vici: breaking the TAM Logjam. Journal of the Association for Information Systems 8 (4), 223–229.
Strohmeier, S., 2007. Research in e-HRM: review and implications. Human Resource Management Review 17 (1), 19–37.
Strohmeier, S., 2009. Concepts of e-HRM consequences: a categorisation, review and suggestion. International Journal of Human Resource Management 20 (3), 528–543.
Tansley, C., Newell, S., Williams, H., 2001. Effecting HRM-style practices through an integrated human resource information system: an e-greenfield site? Personnel Review 30 (3), 351–370.
Taylor, S.P., Todd, P.A., 1995. Understanding information technology usage: a test of competing models. Information Systems Research 6, 144–176.
Tett, R.P., Meyer, J.P., 1993. Job satisfaction, organizational commitment, turnover intention, and turnover: path analyses based on meta-analytic findings. Personnel Psychology 46 (2), 259–293.
Thatcher, J.B., Stepina, L.P., Boyle, R.J., 2002. Turnover of information technology workers: examining empirically the influence of attitudes, job characteristics, and external markets. Journal of Management Information Systems 19 (3), 231–250.
Trevor, C.O., Nyberg, A.J., 2008. Keeping your headcount when all about you are losing theirs: downsizing, voluntary turnover rates, and the moderating role of HR practices. Academy of Management Journal 51 (2), 259–276.
Ulrich, D., 1996. Human Resource Champions: The Next Agenda for Adding Value and Delivering Results. Harvard Business School Press, Boston.
Ulrich, D., Brockbank, W., 2005. The HR Value Proposition. Harvard Business School Press, Boston, Mass.
Vandenberghe, C., Panaccio, A., Bentein, K., Mignonac, K., Roussel, P., 2011. Assessing longitudinal change of and dynamic relationships among role stressors, job attitudes, turnover intention, and well-being in neophyte newcomers. Journal of Organizational Behavior 32 (4), 652–671.
Venkatesh, V., Morris, M.G., Davis, G.B., Davis, F.D., 2003. User acceptance of information technology: toward a unified view. MIS Quarterly 27 (3), 425–478.
Venkatesh, V., Davis, F.D., Morris, M.G., 2007. Dead or alive? The development, trajectory and future of technology adoption research. Journal of the Association for Information Systems 8 (4), 268–286.
Wanberg, C.R., Banas, J.T., 2000. Predictors and outcomes of openness to changes in a recognizing workplace. Journal of Applied Psychology 85 (1), 132–142.
Wiblen, S., Grant, D., Dery, K., 2010. Transitioning to a new HRIS: the reshaping of human resources and information technology talent. Journal of Electronic Commerce Research 11 (4), 251–267.
Williams, L.J., Edwards, J., Vandenberg, R., 2003. Recent advances in causal modeling methods for organizational and management research. Journal of Management 29 (6), 903–936.
Williams, M.D., Dwivedi, Y.K., Lal, B., Schwarz, A., 2009. Contemporary trends and issues in IT adoption and diffusion research. Journal of Information Technology 24 (1), 1–10.
Wright, C., 2008. Reinventing human resource management: business partners, internal consultants and the limits to professionalization. Human Relations 61 (8), 1063–1086.