

HUMAN RESOURCE MANAGEMENT VIA THE WEB: OPPORTUNITIES AND THREATS

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Abstract: Web-based Human Resource Management (HRM) is coming to a more full-grown stage within organisational life. Much is assumed and expressed about its advantages, however scientific proof of these advantages is scarce. No clarity exists about the answer to the question whether Web-based HRM contributes to the effectiveness of HRM processes. This paper contributes to the Web Information Systems sciences in two ways. Firstly, findings-wise, we present results from the quantitative study on the contribution of Web-based HRM to HRM effectiveness. The data is collected in a Dutch ministry of Internal Affairs. Results show that actual use of the Web-based HRM application correlates with HR effectiveness, especially its content and design. Regression analysis confirms that the experienced quality of the Web-based HRM application is the only significant explanatory factor of technical and strategic HRM effectiveness. Secondly, in this paper we integrate two approaches, namely Web technology-oriented approach, and organizational processes-oriented approach. An intersection of Web- and HRM- studies reveals new possibilities both for scientific and practical implications.

1 INTRODUCTION AND RESEARCH FOCUS

One of the popular Web-based technologies in organizations nowadays is those that support Human Resource Management (HRM). Known examples of such Web-applications are Web-based recruitment, Web-based career development, Web-based personnel administration, to name but a few.

Notably, the use of web-based HRM is widely discussed in the reports of consultancy firms and professional HRM organisations (Cedar Consulting, 2003). Such reports show that first of all, HRM professionals (and their companies) are no longer surprised by the Web-based HRM phenomenon; they have “grown up” and are ready for serious discussions about it. Second, companies spot high interests in getting more insights in the ways how to implement Web-based HRM applications and how Web-based HRM impacts organisational life.

Academics devote more and more attention to examining Web-based HRM in attempts to explore this contradiction. Within a decade of its history, scientific knowledge about Web-based HRM had assembled several conclusive notions about the goals of Web-based HRM (Ruël et al, 2004), its types (Lepak and Snell, 1998), the effectiveness of different Web-based HRM applications, and the implementation of Human Resource Information Systems (Ball, 2001).

There is a sound belief that Web-based HRM should improve HRM processes by freeing HR staff from the burdens of administration, enabling them to undertake critical people management activities (Lepak and Snell, 1998). These beliefs originate in ideas about the endless possibilities of Web-based information technologies (IT) to facilitate HR practices, and about the endless capacity of HRM to adopt IT.

However, the most intriguing point, while the beliefs and interests in Web-based HRM are growing, the appreciation of Web-based HRM and

the expectations from it seem to be decreasing (Cedar Consulting, 2003; NVP, 2004).

This paper contributes to the field of Web-based Information Technologies (IT) in two ways. First contribution concerns development of a theory. It considers Web-based HRM as an intersection of two backgrounds: IT and organizational (HRM) studies.

IT-based Web-based HRM studies investigate the usage of IT for HR purposes. Evidence suggests that Web-based HRM projects mainly remain technology-driven events, focusing on the growing sophistication of technology. In this context, studies examine the qualities of Human Resource Information Systems necessary for its adoption by HR departments and complete organisations (Bal, 2001; Fisher and Howel, 2004). However, these studies remain silent about changes in HR practices due to Web-based HRM.

HR-based Web-based HRM studies mainly examine single Web-based HR practices, providing evidence that almost any HR practice can be automated. The foci of this type of research vary widely, from analysis of the competences of HR professionals (Hempel, 2004), to ethical issues (Hogler et al., 1998). However, these studies tend to avoid issues related to on-going use of Web-based technologies. To integrate two academic backgrounds, this paper aims first at developing a theoretical framework as an integration of IT- and HRM- studies.

Second contribution of this paper concerns empirical evidence about usefulness of Web-based HRM for the HRM processes. Theoretical complexity has consequences for Web-based HRM projects and their management. It is increasingly unclear what the full advantages of Web-based HRM are, and to what extent Web-based HRM makes HRM effective.

Therefore, the second goal of this paper is to answer the research question, whether Web-based HRM contributes to the HRM effectiveness?

Our paper presents the results of a quantitative study on the contribution of the actual use of Web-based HRM to HRM effectiveness. The study was conducted in the Dutch Ministry of the Interior and Kingdom Relations.

This paper is organised as follows: first, it will dive into the theoretical background of Web-based HRM studies. A research model and hypotheses will be presented after that. Then the paper will explain the research methods used, and findings will be presented. The final section is dedicated to conclusions, discussion and future research directions.

2 WEB-BASED HRM RESEARCH UP-TO-DATE

Based on the view of HRM practices as communications from the employer to employees about HRM content (Guzzo and Noonan, 1994; Bowen and Ostroff, 2004), we define Web-based HRM as the directed and IT-networked communications from the employer to employees about HRM content. This definition reflects findings from earlier research that Web-based HRM directly involves all employees in HRM processes due to the technological networks, and gives HR professionals the opportunity to focus mainly on encouraging desired employees' behaviors (Ruël et al, 2004).

Research evidence suggests that in many organisations, Web-based HRM has led to a radical redistribution of what managers do. Many of the reporting activities previously performed by HR professionals can now be performed by managers and employees on-line (Ruël et al, 2004; Ruta, 2005). On their desktops, managers can perform appraisals, evaluate employee costs, generate HR reports (turnover, absenteeism), process training requests and competence management. Employees have access to everything they need to change and manage their personal files, plan their development, process financial documents and apply for new jobs (Roehling et al, 2005).

2.1 "Technological" Side of Web-Based HRM

A lot has been done in the research into information technologies for HR purposes. Beginning in the 1960s, personnel management was an early candidate for office automation in payroll, benefits administration, and employee records holding (Ball, 2001). Typically, this information was stored in flat databases being interrogated via simple key words searching. Growth in strategically focused HRM produced demands for information and communication developments in Human Resource Information Systems (HRIS). Early studies into HRIS demonstrated the "hesitant" use of HRIS by HR practitioners who perceived IT as workhorses of the personnel function (Hall and Torrington, 1998).

Empirical reports since then have indicated that the use of HRIS has become more confident although still mainly for administrative purposes, and that HRIS projects mainly remain technology-driven events, with the focus on the growing sophistication of information technology (IT). In this context, studies focus on the qualities of IT

necessary for its use by HR departments (Kavanagh et al, 1990; Haines and Petit, 1997; Keebler and Rhodes, 2002; Fisher and Howel, 2004).

For example, in their survey among 152 users of HRIS, Haines and Petit (1997) found a number of individual/task, organisational and system conditions that support successful HRIS. Although the relationship with the system usage was found to be weak, the links with user satisfaction were strong. This was the case for many of the system conditions like training, documentation, presence of on-line applications, ease of use, and perceived usefulness of the system. Another quantitative study in 115 organisations actively using HRIS conducted by Ball (2001) has revealed that the organisation size is a clear determinant of whether an organisation has an HRIS at all and, second, whether it adopts certain modules (e.g. core personnel administration) over others (e.g. training and competence management). The type of HRIS is also shown to be determined by the organisational size: the smaller companies (less than 500 employees) would go for low cost and low risk HRIS, more flexible software or in-house developed (Thaler-Carter, 1998; Ball, 2001).

More recent studies into the implementation of Web-based HRM are shifting towards addressing the dynamic nature of the HRIS implementation and use such concepts like innovation implementation, learning, change management, Technology Acceptance Model (Keebler and Rhodes, 2002).

Incorporation of the Technology Acceptance Model (Davis et al, 1989) into Web-based HRM studies has resulted in notions that the use of Web-based HRM by the targeted employees is highly determined by the level of usefulness of the HR information technology and ease of its use (Ruta, 2005; Voermans and Van Veldhoven, 2007). The design of HRIS is considered as done but not fixed in the traditional development stage. A recent example is the study into the implementation of a HR employee portal in the Italian subsidiary of Hewlett-Packard (Ruta, 2005). The research demonstrated that the usage of HRIS increased when IT user acceptance principles were integrated with change management principles; when the IT user acceptance model focused on “what” predicted intentions to use the HR portal, while change management theory focused on “how” intentions to use the HR portal could be influenced. It was shown that by analysing the context (at both the industry and company levels), change agents managed to adopt the most appropriate actions to support the HR portal implementation.

Our concluding observation at this point is that many of the findings in the implementation of Web-based HRM (or HRIS) substantiate the expected relationships and dynamics of the implementation process derived from the research into information systems. Therefore, due to the latest developments, implementation of Web-based HRM can be compared to the drifting process (Ciborra, 1996) that divides intended goals and achieved outcomes of the Web-based HRM implementation.

2.2 “HRM” Side of Web-Based HRM

The current Web-based HRM literature considers Web-based HRM a choice for an approach to HRM rather than a specific stage in the development of HRM. Wright and Dyer (2000) distinguish three areas of HRM where organizations can choose to ‘offer’ HR services face-to-face or through an electronic means: transactional HRM, traditional HRM and transformational HRM. Lepak and Snell (1998) make a similar distinction, namely operational HRM, relational HRM and transformational HRM. The first area, operational HRM, concerns the basic HR activities in the administrative area, e.g. salary administration (payroll) and personnel data administration. The second area, relational HRM, concerns more advanced HRM activities. The emphasis here is not on administering, but on HR tools that support basic business processes such as the recruiting and selection of new personnel, training, performance management and appraisal, and rewards. The third area, transformational HRM, concerns HRM activities with a strategic character. Here we are talking about activities regarding organizational change processes, strategic re-orientation, strategic competence management and strategic knowledge management.

The areas mentioned could also be considered the types of HRM that can be observed in practice. In some organizations, the HRM emphasis is on administration and registration, in others on the application of operational HRM instruments, and in a third group on its strategic role. Within all of these types, choices can be made in terms of which HRM activities will be offered face-to-face and which will be offered through web-based HR (e-enabled). For the operational type of HRM, this question provides the choice between asking employees to keep their own personal data up-to-date through an HR website or to have an administrative force in place to do this. For relational HRM, there is the choice between supporting recruitment and selection through a web-

based application or using a paper-based approach (through advertisements, paper-based application forms and letters, etc.). Finally, in terms of transformational HRM, it is possible to create a change-ready workforce through an integrated set of web-based tools that enables the workforce to develop in line with the company's strategic choices or to have paper-based materials.

Ruël et al (2004) have shown that although these types are mixed in practice, it is important that "establishing a good basis for Web-based HRM at the operational level seems to be an essential prerequisite for the relational and transformational Web-based HRM; and that it requires changes in the tasks of HR professionals (less paper-based administration, more e-communications with employees, skills for operating IT)". Classifying companies according to Web-based HRM types does not mean assessing their Web-based HRM. None of the types can be judged as good or bad. It was shown that there is a 'gap' between Web-based HRM in a technical sense (the available functionality) and the use and adoption of it by employees and line managers. The actual usage/adoption lags behind what is possible.

2.2.1 Goals of Web-Based HRM

Lepak and Snell (1998) refer to the four 'pressures' of virtual HRM. First of all, HRM departments are asked to focus on strategic questions. Secondly, these departments need to be flexible in terms of policymaking and practices. Thirdly, HRM departments should work efficiently and be aware of costs. Fourthly, HRM departments should be service-oriented towards management and employees. In short, HRM departments must be strategy-focused, flexible, efficient, and client oriented; and all at the same time (Lepak and Snell, 1998). Ruël et al. (2004) highlighted an aspect that is fairly well covered by the above but that is nevertheless interesting to spell out, namely the changing nature of the employment relationship. With the supply shortage in the labor market (during the economic upturn of the 1990s), the individualization of society, and the increased educational level of citizens (and thus of employees), the power balance in the employment relationship has shifted in the direction of the employees: they want to steer their own career paths. In the view of Ruël et al. (2004), a move towards Web-based HRM can provide the tools to support this development. This aspect fits into earlier-mentioned drivers such as improving service

towards internal clients, but has an external societal drive. Yet another goal of Web-based HRM was stressed as the outcome of the case study research conducted by Ruël et al (2004): it is necessary to recognize that to improve a company's global orientation can become a strong drive to start with Web-based HRM. Theoretical debates suggest three goals of Web-based HRM are cost reduction, improving of HR services, and improving strategic orientation (Brockbank, 1997; Lepak and Snell, 1998; Stanton and Covert, 2004). Few empirical findings supplement these goals with globalisation as a driving Web-based HRM force in international large organisations, but also show that those goals are not clearly defined in practice, and that Web-based HRM mostly directed at cost reductions and efficiency of HR services, and least – at strategic orientation of HRM (Gardner et al, 2003; Ruël et al, 2004; Ruta, 2005).

Based upon the above, we conclude about the reasons or goals of organizations making steps towards Web-based HRM: 1. Improving the strategic orientation of HRM; 2. Cost reduction/efficiency gains; 3. Client service improvement/facilitating management and employees; 4. Globalisation.

3 RESEARCH MODEL AND HYPOTHESIS

The Technology Acceptance Model (TAM) developed by Davis et al (1989) states that users will accept and therefore use a system if it has a significant perceived usefulness and ease of use. People tend to use (or not) an application to the extent that they believe it will help them perform their job better (perceived usefulness, or job relevance). Further, even if people believe that a given application is useful, they may believe that the systems are too hard to work with and that the performance benefits of usage are outweighed by the efforts required using the application (ease-of-use).

At the same time, users will work with the technology if the latter has proper technological qualities (content functionality) that are shown to have a direct and significant effect on the acceptance and use of the technology (DeLone and McLean, 2002). Such system characteristics like information quality, reliability, and system efficiency were validated to determine the use of the information technologies (Igbaria et al, 1997; DeLone and McLean, 2002).

It was also shown that usefulness is more strongly linked to the behavioural intentions of users and actual system use than ease-of-use. Across the many empirical tests of TAM, perceived usefulness has consistently been a strong determinant of the usage intentions of employees (Venkatesh et al, 2003).

Assuming that the use of Web-based HRM applications is influenced by the aforementioned determinants, we make a step further and propose to look at the link between the Web-based HRM use and HRM effectiveness. Companies start with Web-based HRM because of anticipated advantages that are expected to result in a more effective HRM. Thus,

Hypothesis 1: Easiness of use, quality, and job relevance of the Web-based HRM application are positively related with technical and strategic HRM effectiveness.

Hypothesis 2: Quality and job relevance of the Web-based HRM application are better explanatory factors for strategic HRM effectiveness than its easiness of use.

Hypothesis 3: Easiness of use of the Web-based HRM application is a better explanatory factor for technical HRM effectiveness than its quality and job relevance.

These hypotheses are visualised in the research model below (figure 1).

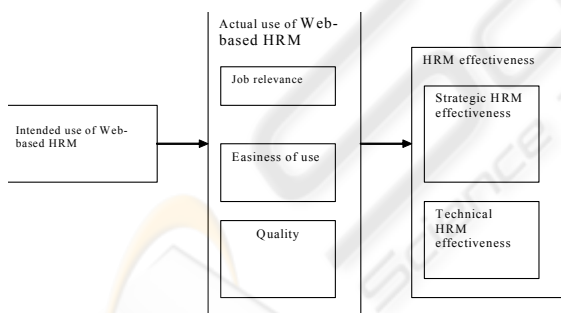


Figure 1: Research model.

4 RESEARCH METHODS

The Ministry of the Interior and Kingdom Relations (called 'the Ministry' hereafter) is one of the thirteen ministries of Dutch central government. The two ministers and almost 3,000 civil servants formulate policy, prepare legislation and regulations, and are responsible for the coordination, supervision and policy implementation.

The documents analysis shows that its mission is to: uphold the Constitution; guarantee the democratic rule of law; ensure an effective and efficient public administration; coordinate urban policy; promote public order and safety and provide centralised management of the countries police forces; promote the quality of the civil service and coordinate management and personnel policy for all civil servants; and coordinate cooperation with Aruba and the Netherlands Antilles.

The Ministry has six main departments (directorates): Directorate-General for Public Service Management, Directorate-General for Kingdom Relations and Governance, Directorate-General for Public Order and Safety, Directorate-General for the action plan 'Different Government', General Intelligence and Security Service, and Office for the Development of the Senior Public Service. The Ministry also includes a Department for Joint Services. This division helps the Ministry's senior civil servants and the directorates-general in the areas of finance, personnel, information systems and communications, organisation, public information, and support services.

In the 1990s there was a growth in the use of information and communication technology at the Dutch ministries. Almost all workspaces got personal computers; e-mail replaced messages on paper and memos; and there was access to the Internet. All the ministries developed their own intranets. Intranet became an important medium for communication with the personnel. The personnel department liked to use this medium to announce news and to provide information about HR-related issues. At first, the intranet replaced paper folders and manuals for HRM, by putting it online. During the mid-1990s it became clear that there were more possibilities, like storage of data, searching for information and handling administrative processes.

In 2001-2002, the Ministry introduced Emplaza as an Web-based HRM tool to provide employees, managers and HR personnel with instruments and information to perform their personnel tasks correctly. Anyone has access to find information, start work processes and submit forms from their own workspace. The system makes sure that the coherence between information, instruments and processes works optimally.

4.1 Measures

In our study we aim at testing the research model based upon data collected through a written on-line questionnaire.

Based on the extensive review of the literature, the questionnaire included scales on five major variables: job relevance of the Web-based HRM application, its easiness of use, quality of the applications, strategic HRM effectiveness, and technical HRM effectiveness. Every item was 'scored' on a five-point-scale, 1 = fully disagree, 2 = disagree, 3 = partly agree, partly disagree, 4 = agree, 5 = fully agree.

4.1.1 HRM Effectiveness

HRM effectiveness is addressed by a great number of studies that strive to demonstrate the value of what HR professionals do for the rest of the organization and how HRM practices are linked to desired organisational outcomes (Huselid, 1995; Boxall and Purcell, 2003; Baron and Kreps, 1999, Wright et al, 2001). We divide HRM effectiveness into two dimensions: strategic and technical (Huselid, 1995).

Strategic HRM effectiveness refers to employees' perceptions of how well the HRM function promotes employees' behaviors that support organizational needs (adapted from Huselid et al, 1997). Three dimensions are distinguished: commitment, development and change. We turned them into six items, with a sufficient internal consistency ($\alpha=0.64$). The technical effectiveness refers to employees' perceptions of how well the HRM function performs operational HR activities (adapted from Huselid et al, 1997). We distinguished two dimensions: work conditions and communication and turned them into five items with a sufficient internal consistency ($\alpha=0.79$).

4.1.2 Actual Use of Web-based HRM Applications

The easiness of use is defined as the extent to which a user of an Web-based HRM application finds the application uncomplicated in its operation and interaction. The dimensions that we turned into five items are: input of efforts and simplicity. The internal consistency of the five items formulated is high ($\alpha= 0.84$).

Quality of the Web-based HRM application is defined as the extent to which a user finds the application well designed and well set up in its content. With this we focus on the content functionality and leave aside – although very important – technical software architectural characteristics. We distinguished two dimensions: content and design, and turned it efficiently into five items with a high internal consistency ($\alpha= 0.83$).

Job relevance is defined as the extent to which users believe that using an Web-based HRM tool is critical to their work situation. Job relevance consists of two dimensions, increase of efficiency and increase of productivity, and those are turned into four items. Their internal consistency is high ($\alpha = 0.81$).

4.1.3 Procedure

From the total population we selected a stratified sample, in order not to 'exhaust' all employees with another invitation to fill up a questionnaire. Therefore we selected respondents and tried to involve all age categories, male and female, all ranks and units. Especially, it was preserved that there would be at least a relevant number of managers involved. All in all, we selected 277 organisation members, 186 employees, 47 managers and 44 HR professionals. They received an e-mail with an invitation to participate in our study and they could click on a hyperlink in order to go to the questionnaire. The response rate was 36% or in absolute terms 100 respondents, 54 male, 46 female. The electronic tool used for this did not allow respondents to leave questions open, so therefore we did not have missing values.

For the testing the hypotheses we used correlations (hypothesis 1) and regression analysis (hypothesis 2 en 3).

5 FINDINGS

5.1 Goals of Emplaza

The Emplaza project documents dated in October 2002 show that its goal in the first phase of the HRM Department Store (HDS) was the realisation of three functional clusters. They were considered as a coherent set of information and web application that are focused on: the increase of efficiency and quality of administrative processes; the generating and spreading of management information; the development of the employee and the organisation. The overall goal was formulated as increasing efficiency and improvement of the quality of HRM at the Ministry.

In January 2003 Emplaza got a new direction, with the primary aim to improve employee self-service. By this there was a hope to achieve independent development of the employees, and to support managers in HR tasks.

November 2003 has brought yet a new orientation for Emplaza. Increase of efficiency in the administration (setting of a task and general efficiency), decrease of vulnerability and mistake percentages in administrative processes, working with employee and manager self-service concepts, effective support of the introduction of the new HRM policy, and supporting the changes in the organisation, including the decrease of the support by decentral P&O employees, - were documented as up-dated goals of Emplaza.

Our observations at this point are that although the goals have changed, the overall tendency was cost reduction and making the administrative processes more efficient.

5.2 Functionalities of Emplaza

Users of Emplaza are HR professionals, managers, and employees. They have possibilities to perform the following activities via Emplaza: search and read information about internal and national HRM policies; store personal information for HRM purposes (digital personnel file); process transactions in the area of HRM (filling in of forms, address changes, course enrollment); produce HRM products (letters, reports).

The processing is digital that creates a continuous insight in the status and the handling of the data.

5.3 Survey Results

The data analysis showed a positive significant relationship between easiness of use of Emplaza and technical HR effectiveness ($r = 0.22$; $p < 0.05$; $n = 100$) and between quality of Emplaza and technical HR effectiveness ($r = 0.38$; $p < 0.01$; $n = 100$), but *not* between job relevance of Emplaza and technical HR effectiveness ($r = 0.17$; $p < 0.098$; $n = 100$).

Analysis of the data also showed a positive significant relationship between ease of use of Emplaza and strategic HR effectiveness ($r = 0.41$; $p < 0.01$; $n = 100$) as well as between quality of Emplaza and strategic HR effectiveness ($r = 0.50$; $p < 0.01$; $n = 100$) and between job relevance of Emplaza and strategic HR effectiveness ($r = 0.39$; $p < 0.01$; $n = 100$).

This first hypothesis therefore is confirmed meaning a confirmation in line with the basic line of our Web-based HRM effectiveness improvement theory, but of course keeping in mind that it is tested in a limited empirical setting.

The analysis showed that only quality of Emplaza is a significant predictor of strategic HRM effectiveness ($\beta = 0.35$; $p < 0.05$; $n = 100$). That means that how employees and managers judge the content and design of Emplaza explains the extent to which employees and managers perceive HR as strategic effective. It is surprising that job relevance does not show to be a significant predictor for strategic HR effectiveness. As expected, easiness of use is not a significant predictor of strategic HR effectiveness.

The analysis showed that surprisingly, although already suggested by the weak correlation, easiness of use is not a significant explanatory factor for technical HR effectiveness. Unexpectedly, quality of Emplaza seems to be a quite strong predictor of technical HR effectiveness ($\beta = 0.41$; $p < 0.001$; $n = 100$).

6 CONCLUSIONS, DISCUSSION AND FURTHER RESEARCH

Based upon, what we called, the Web-based HRM effectiveness, we formulated four hypotheses related to operational Web-based HRM and HR effectiveness. Our study showed the first empirical confirmation that in general positive use of Web-based HRM applications facilitate an improvement in HR effectiveness. Analysis of our data, collected in the Dutch Ministry, showed that positive actual use of Emplaza, got along with more positive perceptions of HR effectiveness. Easiness of use and the quality of Emplaza correlate significantly with technical and strategic HR effectiveness. Job relevance correlated only significantly with strategic HR effectiveness.

Regression analysis made quite clear, however, that actually only quality of Emplaza, meaning the content and design, is a significant predictor of technical and strategic HR effectiveness. Easiness of use of Emplaza and, as expected from the result from the correlations, job relevance of Emplaza do not show to be significant predictors. These results are partly unexpected and therefore interesting. They confirm at least the expectation that it is the content and the design of a web-based HRM application that can make employees and managers more positive about HR effectiveness. A Web-based HRM application obviously needs to be easy in use and relevant for the job situation of employees and managers, but this will not result in a more positive perception of HR effectiveness. This finding is

relevant for further theory building and for the practice of Web-based HRM implementation. Although we have to be careful because of the limitation of the data set used, for practitioners there is a clear guideline: they should dominantly focus on the quality of the Web-based HRM application, i.e. the content and design, instead of on easiness of use and job relevance, if to make Web-based HRM contribute to HR effectiveness. It indicates that HRM activities are not perceived as employees' primary tasks. A measurement with line managers may have led to other outcomes, if the organisation's HR policy would be that operational HR is basically a line managers task.

For further theory building our findings must lead to reconsidering how actual use of Web-based HRM applications should be operationalised in future research. The constructs easiness of use and job relevance might be replaced by other, as our study gives a first basis to assume that these two constructs are weakly related to HR effectiveness but do not show to be significant predictors of technical and strategic HR effectiveness.

Earlier we referred already to limitations of our study. First of all, our results need to be handled with care. The dataset we could build up is relatively small, although quite robust for applying statistical methods. Mainly the fact that the data comes from only one organisation is a limitation where one type of Web-based HRM application was in use.

Second, the type of Web-based HRM in the Dutch ministry was operational. That means that the results can be generalized to a relational and a transformational type of Web-based HRM.

Third, the measurement of the constructs needs a careful reconsideration. We tested the reliability on the same dataset as where we tested the hypotheses. The constructs might need a stricter test including also a factor analysis. In this study we found the dataset too small to conduct a factor analysis, a future study should carry this out.

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