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Status Quo and Trends in E-Recruiting – Results from an Empirical Analysis

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Abstract

The increasing diffusion of the internet and its related internet-based services change more and more the way business is conducted or people organize their life. A particular part of these changes concerns the way corporations design and conduct their business processes. Therefore this paper examines and focuses on the IT-based design of a distinctive business process. Due to its rising importance the exemplary examined process chosen is the recruiting process. With the help of an empirical analysis of the recruiting process in Germany's Top-1,000 companies to we investigate the diffusion and impact of e-recruiting tools. A correlation analysis provide evidence that the usage of manual offline components such as paper-based job ads or applications forms is negatively correlated with time, financial and quality improvements of the recruiting process. In contrary, online application forms and job ads on the internet (corporate website and internet job board) are positively correlated with the improved time-to-hire, the quality of candidates and the costs for applicant management as well as costs per application. The paper concludes that the time of paper-based recruiting is over and e-recruiting will dominate the recruiting practices in the 21st century.

Keywords

E-Recruiting, E-Business, Empirical Analysis, Correlation Analysis

1. Introduction

Already in the first years of the emerging IT-economy the potential of an IT-talent shortage was an issue for corporations as well as research (LaBelle et al. 1980). Today, nearly 30 years later, the threat not only exists it gets even worse (Acharya and Mahanty 2008). Organizations, labor market analysts, researchers, and consultants note similar concerns on the talent shortages especially of IT-talent (Acharya and Mahanty 2008; Cappelli 2000; Farrell and Grant 2005; Frank et al. 2004). Given this situation organizations have to develop new effective strategies and approaches to remain within this "War for Talent" (Chambers et al. 1998; Dychtwald et al. 2004; Thompson 2007). One of these new strategies and approaches is e-recruiting (Strohmeier 2007): the use of IT and especially internet-based services for recruiting tasks. Companies started to publish job ads on the internet on their corporate website or an internet job board such as monster.com and candidates started to use online application methods such as e-mail or an online application form (Keim et al. 2005). Over the years e-recruiting became more and more important for companies and job seekers (Keim and Weitzel 2006). Due to the importance of recruiting especially IT-based recruiting the approach of this paper is to provide an overview of the status quo and current trends in e-recruiting based on the results of an empirical analysis with Germany's Top-1.000 enterprises by asking the question

What is the current degree of diffusion and impact of information technology within the recruitment process?

For answering this research question the paper proceeds as follows. First, an overview of current research on recruiting processes will be provided. The following section 3 explains the research design. In section 4 the empirical results are presented. Section 5 concludes the paper and is discussing the results of section 4.

2. Recruiting Process

One of the most critical business processes is the recruiting process. Researchers from different disciplines discussed valuable approaches to evaluate structure and standards of classic staff recruitment. Carroll et al. (1999) provide evidence for a systematic procedure to start a recruiting process based on four stages: an assessment if vacancies need to be filled, a definition and broad analysis of the job profile, the production of a job description and a person specification. The overall process was sectioned into three steps by Barber (1998): generating applicants, maintaining applicant status and influencing job choice decision. Furthermore researchers categorized activities related to these phases. For generation of applications companies can publish the advertisements for vacancies via paper-based (e.g. newspapers) or digital media (e.g. corporate website, internet job board). Breugh and Starke (2000) portrayed the recruiting process as a combination of activities, variables and strategic measures to achieve a number of recruitment objectives. These objectives include from a recruiting perspective – according to Breugh and Starke (2000) - costs of filling jobs, speed of filling jobs, diversity of hires, quality of applicants and diversity of applicants. Another approach can be found by (Faerber et al. 2003b) who demonstrate in their model the relationship of each recruiting task, its activities and objectives. Based on prior work (Albert 1998; Schneider 1995) their process contains five main tasks as illustrated by Figure 1: short- and long-term candidate attraction, applicant management, pre-selection as well as the final selection of candidates (Faerber et al. 2003b).



Figure 1: Recruiting process

Source: (Albert 1998); (Faerber et al. 2003a)

Because of the rising use of information technology in staff recruitment Lee (2005) suggested a business process design to illustrate an intra-organizational flow and the internal process events of the recruiting process. The main activities are the submission of job ads and the management of applications. Furthermore based on his prior work Lee (2007) suggested an architecture for a holistic e-recruiting system to align all activities and IT-tools supporting the recruiting process of an organization. In addition companies try to use innovative IT solutions to gain the competitive edge in the “War for Talent” (Chambers et al. 1998). Laumer et al. (2008) analyzed how companies recruit in a “virtual world” and presented the case of IBM Germany who implemented a recruiting centre in SecondLife.

The approach of this paper is to analyze how the current degree of diffusion of information technology within the recruiting process is in 2008. Therefore based on the structured process of Faerber et al. (2003a) the usage of IT-tools will be analyzed using data from an empirical study. How this study was conducted is described in the next section.

3. Research Design

For analyzing the current recruiting practices of Germany’s Top 1,000 firms an empirical study was conducted. First, a data sample containing contact data of the recruiting managers in Germany’s top 1,000 firms was developed and second, based on IS and HR literature and

some case study results a questionnaire dealing with IT usage in recruiting was developed. This questionnaire was pretested with several experts from large scale companies, not included in the Top 1,000 and managers of an international operating internet job board. The final questionnaire was sent to the recruiting managers per e-mail or post. The returning answers were entered into statistical software to enable computer-based analysis. The data of the returned questionnaires are the basic pool for the empirical analysis of this paper.

4. Recruiting practices in Germany's top 1,000 firms

Overall, 124 companies participated in the study by sending back a filled questionnaire. The dataset of the participating companies were tested against the overall sample to ensure the representativeness of the 124 companies. Representativeness was tested for industry classification, number of employees and sales volume. In all three cases the level of significance for the Chi-Quadrat-tests is above the recommended level of 0.05. Therefore the sample of 124 can be classified as representative for the sample of Germany's Top 1,000 firms. In the following the analysis of IT usage in recruiting is presented. The analysis is structured following the recruiting process steps shown in Figure 1. In section 4.4 the results of a correlation analysis are presented to evaluate the impact of IT in recruiting on the process in terms of costs, time and quality.

4.1 Candidate Attraction

For candidate attraction companies can use a lot of different channels to communicate a vacancy to jobseekers on the labor market. Possible channels are online ones such as a corporate website or an internet job board such as monster.com and offline ones such as printed media, the federal employment agency or others like headhunters or an agency for temporary work (Laumer et al. 2008; Lee 2007). For the year 2008 Germany's Top-1,000 companies used these channels as illustrated in Figure 1. 82 percent of the vacancies in 2008 were published on the corporate website and 60 percent on an internet job boards. Printed media was used for 26 percent of published employment ads and 19 percent were announced through the federal employment agency. 11 percent were communicated over other channels such as headhunters etc. It can be concluded that Germany's Top-1,000 companies predominately use internet-based channels to advertise their vacancies to job seekers.

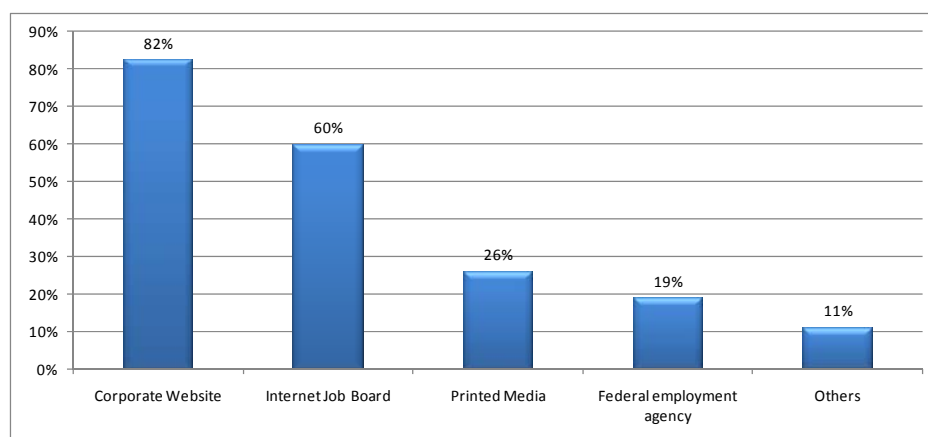


Figure 1: Recruiting channel usage

Beside the usage of personal attraction channels the question which channels are responsible for actual hires is interesting in terms of controlling for the channels' effectiveness. In 2008 35 percent of new hires were generated due to job ads on the corporate website and one third because of ones on internet job boards. Hence, internet channels are responsible for 68 percent of the new appointments in Germany's Top-1,000 companies. Furthermore 17 percent

were generated over printed media and 11 percent over other channels. The federal employment agency was only responsible for 4 per cent of the hires in 2008.

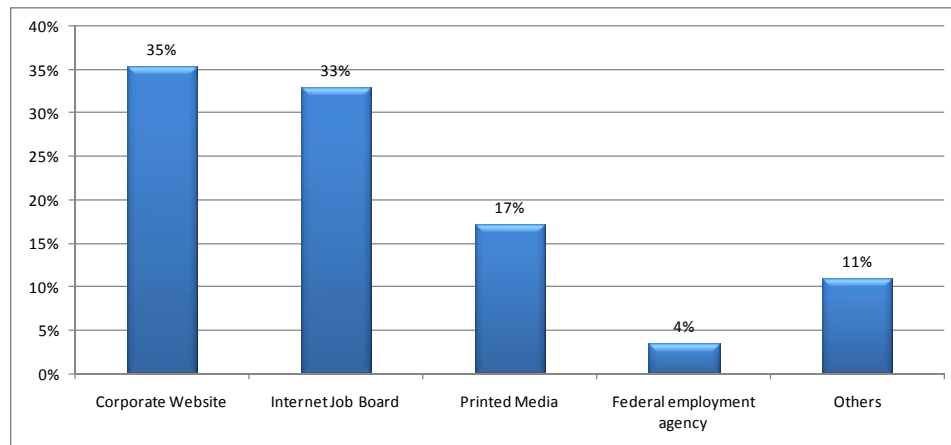


Figure 2: Recruiting channel's effectiveness

For 2008 one has to conclude that the internet is the most important medium for large enterprises to communicate vacancies to job seekers. On the one side the corporate website and internet job boards are mainly used and on the other side both channels are responsible for over two third of the new hires in 2008. Thus, one can say: the internet dominates candidate attraction. The next section is analyzing if there are similar deployments for the applicant management.

4.2 Applicant Management

The previous section analyzed the usage and effectiveness of various recruiting channels and pointed out that the internet is the most important medium for candidate attraction. After identifying an interesting job description in a specific company applicants have to submit their resume and other documents to apply for this job. Therefore this section analyzes the channels through which applicant can apply for jobs. On the one side the actual usage and the expected usage of these channels and on the other side the companies' preference will be analyzed. Possible application forms are: the classical, paper-based sent by mail application dossier, the application by e-mail and the standardized application form on a companies' website or internet job board (Eckhardt et al. 2008; Lee 2007; Strohmeier 2007; von Stetten et al. 2008).

In 2008 job seekers used nearly each channel to same extent while applying for a job. The Top-1,000 companies in Germany report on the usage figures that 34 percent of the incoming application dossiers arrived by an online form, 33 percent via e-mail and 32 percent were paper-based ones. However, for 2013 the companies expect that more than the half of all applications will arrive via an online form (59 percent), 24 percent via e-mail and only 15 percent of the applications will be sent via mail (Figure 3). In addition Figure 3 illustrates the preference of Germany's Top-1,000 companies for one of these three channels. One half declares their preference for the online application form, 26 percent for e-mail and only 13 percent for a paper-based and mail sent application dossier.

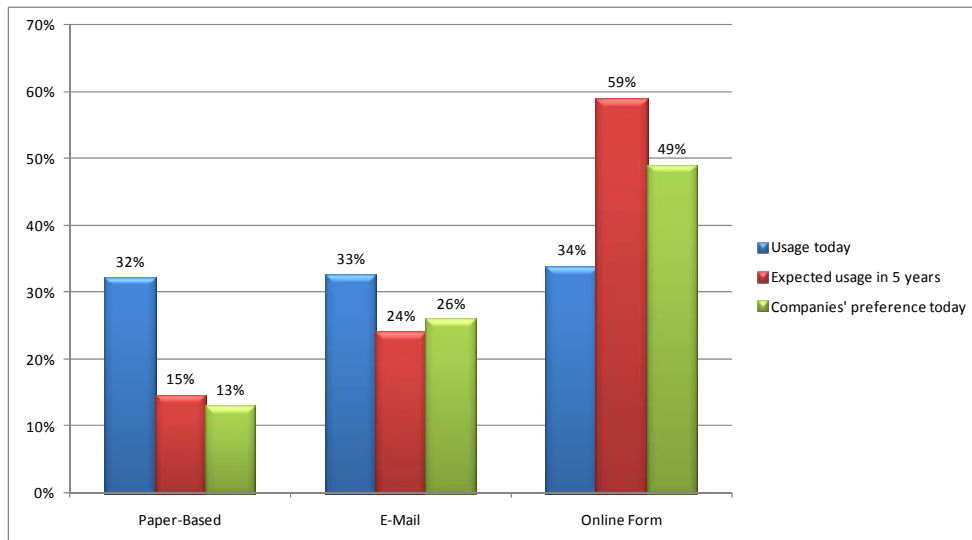


Figure 3: Usage of application channels - today and in 5 years and companies' preference today

As Figure 4 illustrates companies declare an explicit preference for applications over an online form on their website or an internet job board and candidates use this channel as well. This is a distinctive advantage for companies because they can transfer these applications directly into an applicant management system. These kinds of systems are based on databases who store information about candidates and their application dossiers. These databases enable companies to gain advantage and are therefore an important enterprise resource. This pool of talent can be browsed before publishing an external job advertisement and interesting job seekers can be identified. The application via online form is the only way application dossiers can be stored directly in these databases without any media breaks and further process steps. This quick and easy data transfer without manual intervention increases the effectiveness of the entire application processing (in time and cost savings) and ensures the originality and timeliness of data candidates (as the potential source of error of manual data structuring is eliminated) (Lee 2005; Lee 2007; Strohmeier 2008; von Stetten et al. 2008).

Figure 4 illustrates if Germany's Top-1,000 companies currently use internal resume databases or not and if they plan to implement ones. Companies can use these databases to store information about candidates, employees and former employees. In 2008 58 percent use databases to store information about candidates, 14 percent intend to do this in the future and 28 percent declared themselves as non-user. For current employees 40 percent indicate that they are storing information to enable an internal labor market, 12 percent intend to do so and 47 percent do not use internal databases to store information about employees. For former employees 25 percent store information to enable "boom erang hires" – the hire of former employees - , 5 percent intend to do and 72 percent are non-users.

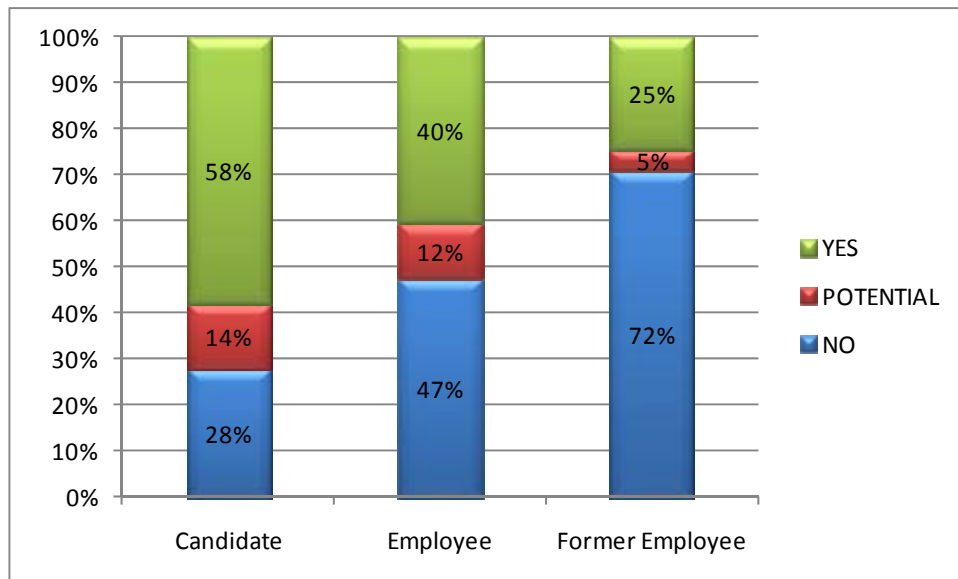


Figure 4: Usage of internal databases

4.3 Selection

Beside the management of applications the selection of the most appropriate candidates is also an important issue in recruiting. Almost every company is using the classical job interview and one fourth assessment centres to combine different selection criteria in one approach. (Laumer et al. 2009) introduced the concept of online gaming as one possible solution to support selection tasks with information technology. They described the concept of “e- and self-assessment” as an online game which enabled on the one side job seekers to test their fit for the offered vacancy (self-assessment) and on the other side companies to collect more information about candidates to make a more informed decision. In addition (Faerber et al. 2003; Malinowski et al. 2008) discuss recommendation systems to generate an automated fit between job description and candidate profiles to improve recruiting or between employees to support team staffing.

Figure 6 shows that two of ten of Germany’s Top-1,000 companies use e-assessments to select candidates and only two percent offer candidates the possibility to test online their fit for an offered job.

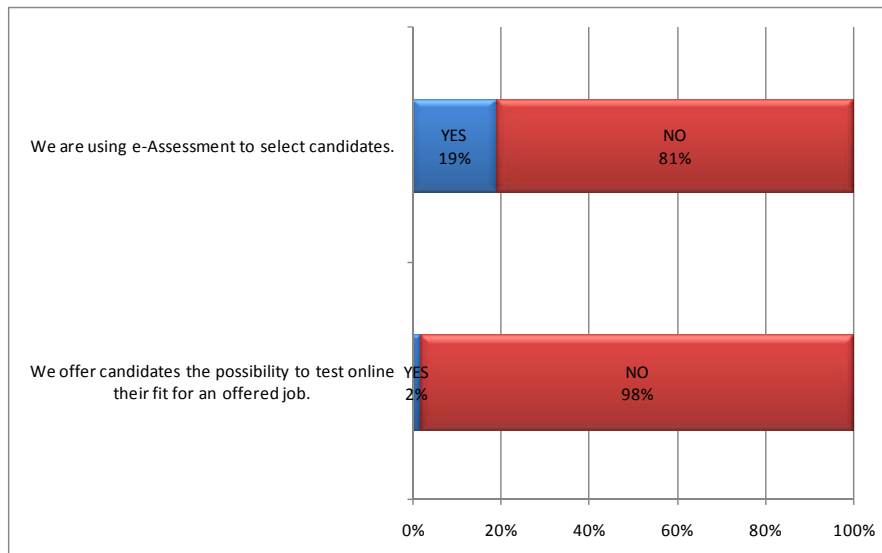


Figure 5: Usage of Self- and E-Assessment

4.4 E-Recruiting Benefits

In the previous sections the actual e-recruiting practice of Germany's Top-1,000 companies has been described. In addition this section presents a correlation analysis of these usage figures with self-reported recruiting process performance determinants in terms of time, cost and quality. As analyzing software tool SPSS 16.0 was used.

4.4.1 Time

In terms of time the usage of e-Recruiting enables companies to design a more efficient recruiting process. As Table 1 illustrates there is a significant correlation between the time period between the identification of a vacancy and the moment a job ad is published and the usage of databases for candidates and employees. In addition there is a positive significant correlation between the period of the arrival of an application and the sending of an income approval and publishing job ads on internet job boards, the usage of online application forms, the preference for online application forms by companies, the usage of databases for candidates and employees and the usage of an holistic e-recruiting system; a negative correlation can be evaluated for publishing jobs in printed media, the usage of paper-based as well as e-mail applications. The time between publishing a job ad and the hiring of the candidate is positively correlated with the publishing of job ads on internet job boards or at the federal employment agency, the usage of online application forms and the usage of databases for employees. However, it is negatively correlated with publishing jobs with the usage of paper-based or e-mail applications. In general, the time-to-hire (from the identification of a vacancy and the hire of a candidate) is positively correlated job ads on internet job boards or federal agencies and the usage of online application forms, usage of database for candidates or employees, however, negatively with the usage of paper-based application forms.

	Time				Quality		Costs		
	Identification of vacancy → Published job ad	Arrival of application → Sending of income approval	Publishing job ad → Candidate Hiring	Time-to-Hire	Quality of Candidates	Quality of Information available	Cost for interaction with candidate	Cost for applicant management	Costs per application
Job ads on website	,009	,139	,083	,141	,229*	,114	,159	,120	,130
Job ads on internet job board	,033	,240*	,103	,212*	,236*	,101	,074	,164	,232*
Job ads in printed media	,101	-,298**	-,025	-,054	-,028	-,248*	-,123	-,121	-,210*
Job ads at federal agency	,067	,027	,220*	,224*	,050	,008	-,126	,035	,086
Paper based	,177	-,419**	-,191*	-,364**	-,355**	-,369**	-,230*	-,354**	-,440**
E-Mail	,140	-,298**	-,194*	-,136	,010	-,012	-,139	-,216*	-,192*
Online Form	-,162	,519**	,241*	,310**	,138	,158	,165	,307**	,372**
Preferred Application Form	-,166	,237*	,022	,157	,155	,249**	,184	,271**	,280**
Databases for Candidates	,189*	,486**	,161	,315**	,196*	,336**	,210*	,309**	,313**
Databases for Employees	,341**	,281**	,241**	,258**	,260**	,171	,213*	,080	,076
Databases for former employees	-,076	,036	,012	-,027	-,102	-,088	0,163	-,220*	-,213*
Holistic E-Recruiting System	,003	,280**	,086	-,172	-,113	,419**	,040	,306**	,329**

Note: ** p<0.01 (2-sides), *p<0.05 (2-sides)

Table 1: Correlation analysis

4.4.2 Quality

Regarding to quality improvements two aspects have to be analyzed; First, the overall quality of candidates and second, the quality of the information available about candidates. The improved quality of candidates is positively correlated with the usage of job ads on the corporate website and on internet job boards as well as databases for candidates and employees. However, it is negatively correlated with the usage of paper-based application forms. An improved quality of the information available is positively correlated with the preferred online application form by companies, the usage of databases for candidates and of a holistic e-recruiting system. In contrast, it is negatively correlated with job ads in printed media and the usage of paper-based application forms.

4.4.3 Costs

Beside the performance determinants time and quality, costs are an important aspect dealing with business process design. Cost reductions in recruiting can be measured by costs for the interaction with the candidates, costs for application management and the cost per application. The usage of databases for candidates or employees is positively correlated with improved costs for the interaction with the candidate. Instead the usage of paper-based applications is negatively correlated with this factor. With improved costs for applicant management the usage of online application forms, the preferred online application form by companies, the usage of databases for candidates and of an holistic e-recruiting system are positively correlated. The usage of paper-based and e-mail applications as well as the usage of databases for former employees, however, are negatively correlated. The costs per application are positively correlated with publishing job ads on internet jobs boards, usage and preference of online application forms, usage of databases for candidates as well as of a holistic e-recruiting system. In contrast, it is negatively correlated with publishing job ads in printed media, usage of paper-based application forms, usage of e-mail applications and the usage of databases for former employees.

Table 1 is summarizing the results of the correlation analysis. The results will be discussed in the next section.

5. Conclusions

E-recruiting and especially internet-based services dominate the recruiting practice of Germany's Top 1,000 companies as the correlation analysis in section 4.3 provided evidence for process improvement in terms of time, costs and quality due to an increasing usage of IT-based services. Furthermore one can conclude that the time of paper-based recruiting activities is over. With a positive correlation between the posting of job ads on the internet (corporate website or internet job boards) and a reduced time-to-hire, increased quality of candidates and decreased cost and a negative correlation of job ads in printed media with these success factors companies should focus on the online channels when publishing job ads. This enables them to improve their recruiting process in terms of time, cost and quality. In addition, the number of incoming paper-based and e-mail applications are negatively correlated with the process success factors. On the contrary online application forms are positively related with an improved time-to-hire and decreased costs. Moreover companies who use internal databases to store information about candidates and employees or who are using an holistic e-recruiting system are those who indicate that they have improved the recruiting process in terms of time, quality and costs. Based on these results one can advise companies to increase the use of internet-based channels and application forms instead of paper-based ones. Furthermore companies should support their recruiting process with a holistic system (Lee 2007) and databases to store information about candidates and employees. This will enable organizations to gain improvements in their process success factors as the results of the correlation analysis indicate.

The results of our empirical analysis are limited as every empirical study is limited because of its design. The data only provide evidence for companies from one country and for large ones. Therefore these results cannot be transferred to other countries or cultures or to small- and medium sized enterprises. Future research could investigate what the current status of the diffusion of e-recruiting in SMEs is and if there are any differences between countries and cultures.

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