

Usability Study on Dutch e-Recruiting Services: Limitations and Possibilities from the Applicants' Perspective

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Abstract. In this research, applicants' perceived expectations, limitations and service improvements concerning two Dutch e-Recruiting services (monsterboard.nl and vacant.nl) are investigated. Data from interviews and videotapes have been analysed. The main perceived limitation in regard to e-Recruiting sites is the lack of personal communication and contact. The majority of usability problems stem from layout issues (monsterboard.nl), search functionality (vacant.nl) and lack of information (both). Better search and matching functions and the inclusion of personal elements into e-Recruiting service offerings were the foremost desires of users.

1 Introduction

In the Netherlands, there are currently 15 large e-Recruiting services on the market with vacancies ranging from 1,500 to 81,000 jobs [1]. While the presence of e-Recruiting services is increasing, research into applicant perceptions of these services is just emerging [2]. The widespread availability and large number of e-Recruiting services show that finding jobs online is an important asset for applicants who seek employment as well as for recruiters who aim to fill open positions as quickly as possible [3], [4]. Understanding how the quality of online services is perceived by applicants is important for an e-Recruiting site to be successful gaining and sustaining customers, i.e. returning applicants [5]. Therefore, e-Recruiting services are challenged to analyze and incorporate the needs of their applicants into the design of their information systems so as to offer desirable services. In this context, other research has shown that applicants' decision to use an e-recruiting site largely depends on the specific resources or service attributes available [6], [7]. More than one in five job seekers has rejected vacancies simply based on poorly designed recruiting websites [8]. Moreover, due to the quick turnover of applicants, large numbers of e-Recruiting services fail [9]. Consequently, there is strong need to study limitations and possibilities of effective e-Recruiting sites. We reason, in line with previous research on human computer interaction (HCI), that the usability of e-Recruiting sites affects whether or not the site effectively facilitates the filling of job vacancies [10], [11]. This research endeavors to discover applicants' perceptions, attitudes and expectations

while using two Dutch e-Recruiting services (i.e. monsterboards.nl and vacant.nl) and gain insights on service innovations for encouraging potential (re)-use of these sites [12]. The paper is organized as follows. In section two, the research scope is described, including the research questions, test objects and participants. In section three, the research method is described, including the experimental procedure, questionnaire and task structure, and data analysis. In section four, the results are presented. Conclusions and implications of this study are presented in section five.

2 Research Scope

This paper aims at exploring applicants' perceptions of limitations in using e-Recruiting sites as well as exploring which features users associate with highly useable e-Recruiting sites. Accordingly, the main question is: What are the limitations of e-Recruiting sites in general, and of monsterboard.nl and vacant.nl in specific, and how can e-Recruiting sites enhance the usability and service offerings to encourage (re)use of these services? The following three sub-questions are investigated:

- (1) What expectations and experiences do applicants have regarding e-Recruiting services?
- (2) What are the perceived limitations of e-Recruiting services from the applicants' perspective?
- (3) How can e-Recruiting services improve their service offerings so that applicants will re-use the services?

3 Method

3.1 Website Test Objects

Two websites offering e-Recruiting services were selected. The selection criteria were twofold; the sample had to include both one generally focused site and one site with a specific target group, and the second criterion was that the two sites have similar features. Including both a general and a specific site allows applicants to experience two "types" of e-Recruiting sites and provides a better basis for evaluation. Similarity in features makes it possible to compare usability results obtained from both sites. The decision was made to use monsterboard.nl and vacant.nl, the former being a general e-Recruiting site and the latter specifically aimed at university graduates [6]. Both sites offer functions to search for jobs, online resume forms and newsletter registration, but differ in the amount and up-to-date status of vacancies, and website structure.

3.2 Participants

This study was conducted with a convenience sample of eight applicants, all of whom were students at the University of Twente, the Netherlands. The students participated

voluntarily and were selected mainly on basis of educational level. Half of the participants were in a master's program, one participant had already graduated and three were bachelor students. The participants represented six different fields of study. The group was divided equally by gender, and the average age was 23.25 years. The majority of participants (seven out of eight) had little to no prior experience with e-Recruiting sites.

3.3 Experimental Procedure

We conducted eight sessions held in the same video lab. The video lab contained a laptop, three TV screens, a webcam and a video recorder. The video recorder was used during each session to record the TV screen linked to the computer screen, and the webcam used to record facial expressions and the applicant's voice. Each of the eight session lasted between 2-2.5 hours, resulting in a total of over 16 hours of webcam and video data. The test and interview procedure remained constant during all sessions. Two researchers took field notes and observed the users performing the tasks. The applicants were asked to "think-aloud" during the whole session and to provide arguments for their answers. The applicants filled out a pre-task and a post-task questionnaire. To evaluate the usability of the e-Recruiting services all applicants performed nine tasks on both monsterboard.nl and vacant.nl (see Table 1).

Table 1. Task List.

1.	You are interested in working at Brunel Engineering; search all current vacancies at Brunel Engineering.
2.	You want to apply at Rabobank. Search for the recruiter's contact information.
3.	You want to find a job in Friesland and Groningen. Search for a position related to your current studies that may be suitable for you after graduation.
4.	You want an IT job in Utrecht. Search for a full-time position in the IT sector in Utrecht.
5.	You are interested in all university-level vacancies in Noord-Holland. Search for these vacancies.
6.	You want to contact the recruiting sites' service personnel. Search for their contact information.
7.	You are interested in the actual vacancies available; search all jobs in horeca and sort them based on when they were posted, and select those posted in the last 30 days.
8.	You are interested in receiving the sites' latest information. Sign up for the newsletter.
9.	You want to make a profile. Register and put a short resume profile online.

3.4 Data Analysis

The analysis of the collected data was divided into three parts: (1) the pre-task questionnaire, (2) the post-task questionnaire and (3) the task analysis. The answers to the pre-task and post-task questionnaire were derived by analyzing the filled-in forms, field notes, and video data. The results were supported by rich descriptions, i.e., quotes from the video analysis. To more reliably detect defects and usability problems, the applicants' execution of tasks and website navigation was observed. For this analysis, the video data of both the computer screen and the facial expressions were analyzed, so that interpretation of verbalized defects (i.e. emphasis of certain salient defects, perceived overlaps, similarities or contradictions) would not be as difficult to

judge. For the task analysis, one coder watched the full video and took note of all occurring defects. By means of a second assessment of 50% of the video data (eight hours), defects were categorized into broad defect categories. A second coder watched 10 % of the video material and independently derived defect categories. Comprehension issues in regard to labeling, inconsistencies, lacking categories and overlap between defect categories were discussed and resolved. In order to enhance code validity (internal and external homogeneity), one test applicant was asked to do "member checking" of the codes and also watched one full video session. The coding procedure resulted in a final set of six defect categories (see Appendix A). After having agreed on the labeling of the final defect categories and explaining the defects in one sentence, one coder watched the full video data and counted the total number of defects for each task and session on both e-Recruiting sites. The combined use of questionnaire analysis and website task analysis enhances the in-depth understanding of the research issues [13].

4 Results

It is interesting to note that all applicants were familiar with monsterboard.nl although the majority (7 out of 8) almost never used e-Recruiting sites. Surprisingly, none of the applicants knew of the online career site for university graduates, vacant.nl.

4.1 Expectations General Site

All applicants stated the importance of including extensive search functionality in e-Recruiting sites' design. The search engine should be easy to use and offer detailed selection options. One applicant supported this by arguing that "it should be easy to make a selection to filter out all the jobs I am not interested in." In addition, all applicants expected to see enough vacancies or fitting jobs on e-Recruiting sites. The local availability of enough suitable jobs was also suggested. The term 'fitting' is worth noting, because the interviewed applicants expected vacancies that matched their education and interests and not just any random vacancy. Another expectation verbalized by most applicants (6 out of 8) was the ability to register and apply, i.e. fill in their personal data into online resume forms. This was mentioned in combination with the expectation to find matches with vacancies and can be described as the option for Resume forms/Upload. Half of the applicants desired extensive company/recruiter information. One applicant acknowledged that he wanted to know "what a company is about" and others liked to have as much company information as possible in order to be able to see if they would fit into the firm, rather than just meet the general criteria of the vacancy.

4.2 Expectations Academic Site

Five applicants mentioned that an academic site should have academic vacancies only. No jobs with low qualifications should be posted and irrelevant companies

should not be allowed to post vacancies. One applicant articulated, "The offer they have of jobs is supposed to be of a different level" and another stated more specifically, "You don't want to see that you can be a garbage man in that and that city at an academic e-Recruiting site." A more personal approach is expected by half of the applicants (4 out of 8). Some applicants mentioned that you should be able to include your master's thesis subject in your personal information. Others were interested in exchanging information with students who are doing a bachelor/master thesis at the different companies they are interested in. One applicant said that "in graduate boards you get more sense of quality, I expect" and another suggested including an option to enhance online communication with other registered users: "It would be useful to get to know people who also graduated in your field with whom you can interact with." A third expectation was verbalized by three applicants as information on career opportunities. This relates to the need for information from a company on growth and career possibilities and possibilities of on-the-job training or traineeships. Some similarities can be found between these findings and those in another study concerning e-Recruiting site attributes for job seekers [6].

4.3 Limitations

Applicants pointed out that e-Recruiting sites have several limitations in comparison to other ways of job searching options. Foremost mentioned was the lack of personal communication and anonymity. The applicants verbalized this as lack of personal contact, lack of face-to-face contact, lack of direct interaction or inability to steer the information exchange. One applicant supported this by saying, "A resume does not represent everything that you are." A second applicant mentioned, "You are not face-to-face with recruiters so people do not get a real and authentic first impression of you." And a third said, "These sites lack personal contact with people who have experiences or are part of the company you want to work for." This limitation is interpreted as the lack of personal communication. A second limitation was linked to the lack of personal contact. One applicant pointed out: "Sometimes it takes a week to get a reply, or longer" and another stated that she had doubts concerning responsiveness in regard to information requests. These results indicate a lack of responsiveness. In other research it has also been noted that the level of interactivity is a specific and important element for e-Recruiting success [14], [8]. A third limitation was formulated by one applicant as: "You don't know if all the offers are there; or if you are missing something." Another applicant assumed that there might be more bad or wrong matches between job and applicant, because the job ad description might not be understood correctly. Finally, an applicant explained, "You want to know what the company is about and the people who work there, that's not going to happen using an internet site." This can be understood as a lack of information richness.

4.4 Website Task Results

In the process of completing website tasks the applicants perceived or stumbled upon certain defects. The defects were categorized according to the table in Appendix B.

There is a large difference between the total amount of defects identified for vacant.nl and the number identified on monsterboard.nl. Data entry defects occurred most frequently on vacant.nl (23), followed by lack of information (17), matching (13), and layout defects (10). The amount of unique defects per category was highest for data entry defects (7) followed by lack of information (4), layout (4) and matching defects (3). Vacant.nl needs to add search fields to select (1) employment type (i.e. fulltime, part-time), (2) up-to-date status of vacancies, (3) keyword field in quick search, (4) multiple provinces and cities and (5) the ability to use multiple keywords together. In the lack of information category, 41% of these defects concerned insufficient contact information under the contact link. Twenty-nine percent relate to difficulties in using the search engine. A lack of company/recruiter information was related to 24% of these defects. An interesting result of the website task analyses is that layout problems and lack of information are the two main defect categories for both e-Recruiting sites. In other research it has been pointed out that website content is not the only important component of a successful e-Recruiting site. Rather, formatting attractiveness and functionality have been found to be important, too [15]. Complementary research has even showed that formatting attractiveness could even be more important than usability issues [16]. Formatting attractiveness can be defined as the clarity and logical structure of a website design. To cater well to applicants, e-Recruiting site designers should consider adjusting the layout and providing more information on how to use the sites. Placement and provision of company/recruiter information can also be largely improved on for both websites. Other researchers also noted that job seekers frequently lack information on organizational attributes, i.e., more information about the job and/or organization makes these sites more attractive for applicants [17], [14]. The study participants emphasized the need for more personal contact which could be supported by this option. Changing the current placement of contact and newsletter information needs to be improved on both sites. While the search options on monsterboard.nl were judged to be extensive enough, the placement of search functions could be improved. A more obvious home button, better labeling and use of head menus would all be worthwhile to consider. For vacant.nl the search functionality should be expanded and the quick search menu should have a keyword search field. The layout of the search engine also needs to be redesigned. The applicants stated that for the resume fields at monsterboard.nl, better examples and more explanations could reduce the amount of defects. The same is applicable to vacant.nl, although here designers should extend the resume forms with the addition of more fields.

4.5 Suggestions for Improvement

When the applicants were inquired about features that would make them return to the e-Recruiting sites, 62.5% (5 out of 8) stated they would just use the site for searching for a job. "Just searching for a job, placing a resume and finding company information" was the goal of one applicant. A second applicant stated, "I don't expect so much from an internet recruiting site, I just want to be informed of jobs and that's it." A third applicant was "just looking for a job." An interesting finding was that 75% (6 out of 8) of the applicants specifically argued that social (network) or career elements

would not make them come back to use the site. One applicant mentioned, "You don't want to make this into a Hyves or something." Further, one applicant explained, "There are already so many social sites and things." The majority of applicants did not expect social elements. If personal network elements were to be added to an e-Recruiting site, the applicants felt that it would be important to maintain a difference between business and private life. One applicant said: "E- Recruiting sites should be "work-related and branch oriented, this is a nice addition. "It was also suggested that unprofessional networks should be excluded, which implies that e-Recruiting sites have to be cautious about which network elements to include. The applicants in this research clearly require these elements to only be focused on their professional niche and career. Half of the applicants felt that published reports about other users' work experiences in different companies would make them re-use the e-Recruiting site, provided that the sources are reliable and objective. Three out of eight applicants felt that newsfeed elements such as new vacancy updates and resume statistics would make them come back to use the site. One applicant reported that it would be good if one could choose specific categories of jobs and regularly receive updates on new vacancies.

5 Conclusions

In this paper, we investigated two Dutch e-Recruiting sites, i.e., monsterboard.nl and vacant.nl, to determine usability and possible service innovations of e-Recruiting sites. Perceptions, experiences and desires of eight applicants were analyzed using questionnaires and website task analysis. The findings imply that the e-Recruiting sites are expected to have extensive search functionality; sophisticated matching functionality; resume creation options; provide detailed vacancy, recruiter and company information; and aim for more personal and proactive contact between job seekers and recruiters. The backbone of a highly useable e-Recruiting site lies in its ability to support a multitude of correct matches between results and search terms that are up to date. Further, results show that the aesthetics of vacant.nl (website design) are perceived as providing a better overall impression to new users, but the functionality of monsterboard.nl swings the balance in their favor [18]. While monsterboard.nl has many layout issues accompanied by a perceived lack of information, vacant.nl requires more extensive search engines, more appropriate vacancies and also scores low on information quality. Applicants stated that the limitations of e- Recruiting sites mainly revolve around the lack of personal communication, responsiveness and information [19]. Several recommendations of how providers can learn from the perceived expectations and limitations were derived. This study shows that applicants require a clear overview of the e-Recruiting sites content and improving website design is one way to improve the usability of these sites. The applicants also expect more personal contact and interaction with the recruiter and company of their preference. Therefore, adding more organizational information can enhance an e-Recruiting services' use. Another new research avenue that might be stimulated by this study would be to extensively observe (i.e. with eye tracking) recruiters navigating different recruiting sites and collecting data to compare the usability of these sites.

This could also provide further insights on the intensity and frequency with which certain elements draw applicants' attention. Other authors have successfully used a Job Site Evaluation Framework (JSOF) to compare multiple e- Recruiting sites [20].

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Appendix

Appendix A. Defect Categories.

Category Name	Explanation
1. Layout defects	The applicant fails to spot a particular element within a page of the website.
2. Terminology defects	The applicant does not understand the meaning of certain words.
3. Lack of Information defects	The applicant perceives a lack of information to perform tasks successfully.
4. System defects	The applicant loses data or experiences a problem due to system problems.
5. Matching defects	The applicant does not receive the matches expected with the used search terms.
6. Data Entry defects	The applicant is lacking the option to select/insert data which he/she wishes to use.

Appendix B. Defects e-Recruiting site.

Defect Categories	Monster tasks		Monster resume		Vacant tasks		Vacant resume	
	Total	Unique	Total	Unique	Total	Unique	Total	Unique
Layout	42	7	1	1	10	4	3	1
Terminology	3	3	19	4	1	1	8	3
Lack of information	21	5	13	5	17	4	4	3
System	9	3	2	1	1	1	2	1
Data entry	-	-	6	2	23	7	1	1
Matching	7	3	-	-	13	3	-	-
Total	82	21	41	13	65	20	18	9