

Usability Evaluation of Job Application Portal for People with Disability

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Abstract: *This study aims to investigate the usability of a job application portal dedicated to people with disabilities (PWD). The number of disabled persons is increasing through the years and the biggest challenge is the proper employment of these PWDs to assure their engagement in the society. The results will be reported based on respondents' answers to an online questionnaire. All respondents have a disability background and they vary between Malaysian and non-Malaysian. The findings indicate that the system meets users' expectations in various usability dimensions.*

Keywords: person with disability, job portal, recruitment, usability

1. Introduction

People with disabilities (PWD) are part of each society. The number of PWDs is increasing over time due to multiple reasons, among others are chronic diseases. In Malaysia, the disabled are defined in accordance with Disabilities Act 2008 as follows: "Persons with disabilities include those who have long term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective involvement in society". Even though the government has implemented several laws and legislations to ensure the involvement of the PWDs in the society and economy, the achieved outcomes are still far from satisfaction (Halid et al., 2020).

The main challenges faced by the PWDs is in getting proper education and the underemployment. The percentage of employed PWDs is lower than the percentage of the employed people without disabilities, especially in full-time positions. This resulted in many of the PWDs have to live in poverty (Bredgaard et al., 2020). Moreover, some studies found that many PWDs had left their work within six months due to different reasons such as the shortage of suitable accommodation at workplace, discrimination, unsuitability of the job and others (Bonaccio et al., 2019; Vornholt et al., 2018). Additionally, one of the main obstacles for PWDs in getting a job is in the searching and interviewing processes (Grussenmeyer et al., 2017). In an effort to get over this problem, some had examined existing approaches such as (Lima, 2016). Lima (2016) had explored the usability and accessibility of job ads dedicated to PWDs in Brazil and concluded that these ads are ineffective for many cases of PWDs. Authors had tried to build systems for job matching and application for PWDs, which is elaborated in Nützi et al. (2020).

Due to the above-mentioned reasons, a job application platform for PWDs is developed (can be reached at: <https://ready4jobs.asia>). In this paper, we aim to assess this newly developed platform. Figure 1 and Figure 2 show screenshots taken from the job portal. The following is how the rest of the paper is organized: The second section presents related works such as developed and assessed systems for PWDs, the third section presents the methodology and results which contains details about the instruments used, respondents and the results achieved. The fourth section discuss the results and draws the conclusions.

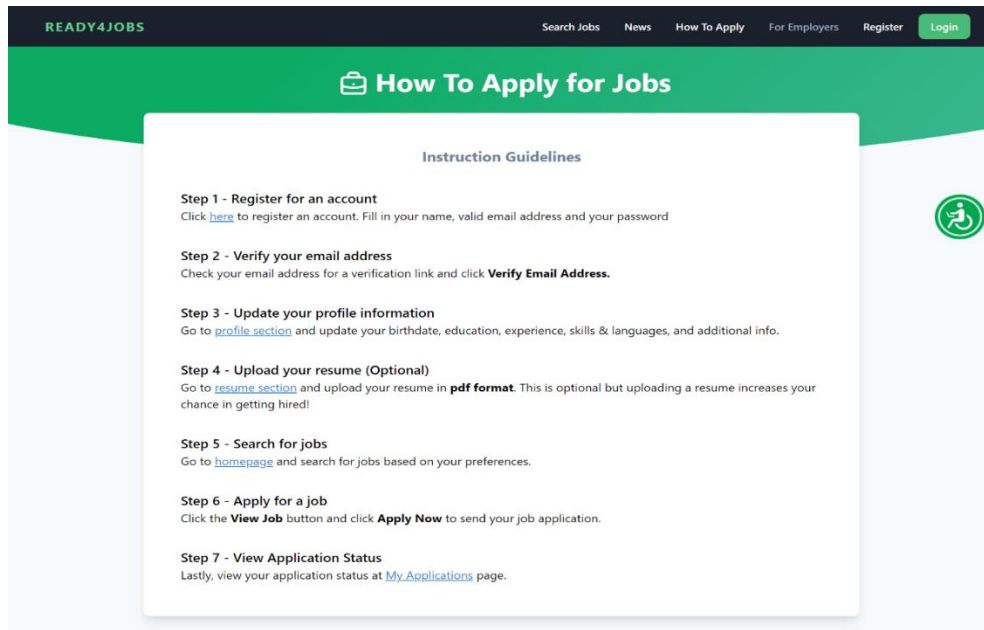


Figure 1: Screenshot of the instructions of the job application

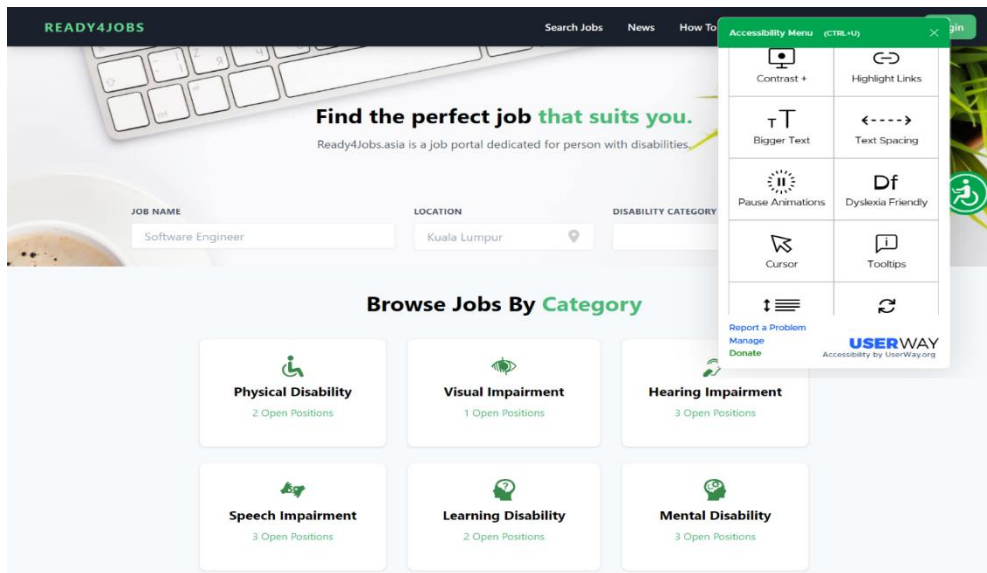


Figure 2: Screenshot of the page of searching for job showing the accessibility helper menu

2. Literature Review

In recent years, many advances have occurred in the field of disabled persons friendly systems, especially with the development of Artificial intelligence (AI) and knowledge management fields. According to (Park et al., 2021), one of the biggest challenges in building disabled

persons friendly systems, is the lack of information, therefore, they had designed an online AI-based infrastructure to collect data from PWDs.

Main obstacles facing PWDs are in the field of education and employment, hence, many systems had been developed and assessed to help PWDs in getting proper education, job and safe working environment. These systems targeted the pre-employment stage, post-employment stage or both stages. The pre-employment systems aim to give the PWDs a proper education, identify the PWDs' job interests or help PWDs in searching and applying for jobs. For example, Nützi et al., (2020) developed and assessed a tool for job opportunity matching for people with spinal cord injuries. In same context, Davies et al., (2018) examined the usability of an iPad application aiming to help people with intellectual disability in identifying their proper work. The study concluded the efficiency of the application which helped the participant in identifying their job preferences with minimal number of steps and with the help of the vocational counsellors. In addition, (Dubey et al., 2019) assessed the Indian Enable Vaani social media platform. Enable Vaani is based on voice and dedicated to PWDs in poor areas. The authors discussed the shortages and advantages of the platform and proposed enhancements. Additionally, they found that job ads and education posts are the most listened posts on the platform. Post-employment systems take care of the enhancement of PWDs' psychology, self-determination, working environment, skills, etc. For example, (Lindsay et al., 2021) developed an web-based toolkit to increase PWDs' self-determination in asking for their needs from employers. There are systems that considers pre-employment and post-employment services such as the headspace Work and Study (hWS) service; Rickwood et al., (2021) investigates the usability and effectiveness of hWS. hWS is a web-based platform developed in Australia dedicated to young mental disabled people aged between 15 and 25 years to help them in achieving the aims of their work and study. Moreover, Lindsay et al., (2017) developed and assessed an online vocational mentoring system for Persons with physical disabilities.

In this paper, the authors are assessing the usability of a job application platform dedicated for PWDs. The target group of this platform PWDs in the ASEAN Region, particularly the alumni of AUN-DPPNet (ASEAN University Network Disability and Public Policy), and through PWDs related page on Facebook. The assessment is done through questionnaire survey. Details about the instruments, methods and results are presented in the following section.

3. Methodology and Results

Questionnaire survey are disseminated online to 50 respondents, with different disabilities background. The response is quite low i.e. only 24% of the respondents took part in the study. This is expected due to low accessibility to the Internet, particularly during COVID19 pandemic.

In this paper, the usability dimensions are defined according to the functionality of the job portal. Table 1 presents the definition of each attribute used in the usability questionnaire. The attributes through numbers 1 to 5 are taken from the Software Usability Measurement Inventory (SUMI) and attributes through numbers 6 to 9 are taken from the Technology Acceptance Model (TAM). SUMI measures the overall usability of the system while TAM measures the overall acceptance of the system.

Table 1: Definition of Attributes Used for Usability Study

No.	Attributes	Definition
1	Affect (A)	The user's overall emotional response to the software (Kirakowski and Cierlik, 1998)
2	Efficiency (E)	The extent to which users believe the software helps them in their job (Kirakowski and Cierlik, 1998)
3	Helpfulness (H)	The extent to which the software is self-explanatory, as well as having more specific aspects such as the availability of adequate help and documentation (Kirakowski and Cierlik, 1998)
4	Control (C)	When performing a task, this metric indicates how much the user feels in charge of the software, as opposed to how much the software controls the user. (Kirakowski and Cierlik, 1998)
5	Learnability (L)	Measures how quickly and easily the user feels they have mastered the system or learned how to use new features when needed. (Kirakowski and Cierlik, 1998)
6	Perceived Usefulness (PU)	Subjective likelihood that using a particular application system would help him/her perform better at work. (Davis et.al, 1989)
7	Perceived Ease of Use (PE)	The extent to which the users expect that the target system will be effort-free. (Davis et.al, 1989)
8	Attitude (AT)	The emotions, whether negative or positive (evaluative affect) that an individual user has about carrying out the target behaviour. (Fishbein and Ajzen, 1975)
9	Behavioural Intention (B)	The extent to which a user has the intention to carry out a specific behaviour (Fishbein and Ajzen, 1975)

The questionnaire used in the usability assessment is built over these attributes. All related questions to each attribute were customized and designed based on the job portal functionality.

Usability Testing Procedure

This usability test of job portal was done on a one-to-one basis, where users do the testing by themselves. An email was sent to the 12 respondents who agreed to take part in the evaluation process. The body of this email contained an introduction and guidelines regarding the job portal and its usage. Once the respondents received the email, they were able to start the testing process. The guidelines in the email are dedicated to help the respondents in their registration process and exploring the portal. In addition, the respondents are given the usability questionnaire for them answer after they have completed the exploration.

The questionnaire is divided into two parts: a general information and a usability evaluation. The general information part aims to gather information from the participants such as the level of study and gender. The second part concentrated on the procedure used to assess the usability of the job portal. The answers to the questions are on a Likert's scale of 1 to 5, with 1 indicating strong disagreement and 5 indicating strong agreement. In addition, at the end of the questionnaire, one open-ended question is added. This question aims to get any comments or suggestions to help in the enhancement and the development of the job portal.

Results of Usability Evaluation

There are a total of 12 respondents who participate in this survey. Out of those 12 respondents, seven are males and five are females. Besides, seven of them are Malaysian and others are non-Malaysian. Table 2 shows the mean score of each attribute of the usability based on the survey results.

Table 2: Mean Score for Usability Evaluation

Attributes	Global	A	E	H	C	L	PU	PE	AT	B
Mean	3.00	3.42	3.63	3.92	3.72	3.97	3.44	4.02	4.03	3.88

The survey comprised negative and positive questions, yet only positive questions were used in the evaluation. The negative questions were added to balance the results and avoid bias. Examples of negative questions are i) “Sometimes this job portal environment gives me headache”, ii) “There are too many steps required to get something to work” and iii) “Sometimes this job portal behaves in a way that I do not understand” and examples of positive questions: i) “Working with this job portal is satisfying” and ii) “I enjoy using this job portal”.

The global scale of ‘3’ act as a benchmark for overall value of usability dimensions. All the mean values of the nine attributes are above the global value.

4. Discussion and Conclusion

In the context of SUMI, the lowest score was the score of the “Affect” (A) attribute which only has 3.42. The low score of A is likely due to the unfamiliarity of the system and the new provided features that depends on the sentimental reaction of the users toward the system. Meanwhile, the attribute “Learnability” got the highest score. This could be due to the guidelines that were provided to the users through the emails and the Help function in the portal. However, in overall, it can be concluded that the job portal worked as expected and its usability level was satisfactory in fulfilling the PWDs’ needs.

In the TAM context, some attributes obtained a higher mean value over SUMI i.e. Perceived Ease of Use (PE) and Attitude (AT). The lowest mean score was the score of “Perceived Usefulness” (PU). PE denotes the ease in which a system can be used to complete a task from the user perspective. By considering that PE received the score of 4.02 in the assessment of users’ perception, a conclusion can be drawn as a high likelihood for this job portal to be accepted as a tool to help PWDs in searching and applying for jobs. On the AT side, it is related to the intention of people to use the system. As the intention to perform a task is related to perform the job seeking task in real world environment, AT is considered as a good indicator of the users’ level of acceptance. As the AT attribute got the highest score, this can be interpreted that the job portal fulfils their requirements. PU indicates the PWDs’ awareness to the practicality of the job portal in completing the job seeking and applying processes. In other words, the job portal can be considered useful, if its users, the PWDs, have faith that they can find and apply for a suitable job, or the “right job” within a stipulated time.

With regards to the final question, which is open-ended, out of 12 respondents, only 7 responded to the improvement of the functionality of the job portal system. These comments will be taken into consideration for further enhancements. The followings are some examples of the respondent comments/suggestions:

- “Please use correct logo for speech impairment and Deaf or Hard of hearing. Do not use Hearing Impairment but use Deaf. Thanks”
- “Employer should be able to register themselves in the portal for job vacancy and links that information with MHR or Jabatan Tenaga Kerja”
- “When I use feature of bigger text to maximum, the words are overlapping to other box. It caused those words can’t be seen completely”
- “Automatic notices for new available jobs”

A decision to employ a system is preceded by a belief that one system is good. This study indicates that usability is possibly a prerequisite of acceptance. As all constructs of SUMI and TAM shows positive results, it can be deduced that Job Portal for PWD is desired as a tool for job seeking. Future work will look at promoting the portal to wider audience such as potential employers and government sectors to ensure full utilization of the job portal.

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