Users' Interest Assessment on Job Portal

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ABSTRACT

Job portal is considerably useful for both job seekers and employers. It enables job seekers to look for an employment, to advance their careers, or to market themselves. As for the employers, they can post vacant positions to be filled with suitable employees. A certain job portal received numerous complaints regarding its features that were unable to fulfill the users' needs. These complaints led to the decrease of the number of users. A study was conducted to determine factors that influenced users' interest by referring to the 7C framework. Questionnaires were distributed to numerous job seekers and employers. The data were analyzed using multiple linear regression technique. Chi-square analysis was also performed to further analyze which elements of the 7C framework were essential for the users. The results showed that only four out of seven elements from the framework affected the users' choice towards job portal, namely the context, the content, the community, and the commerce.

Keywords: 7C Framework, Commerce, Communication, Community, Connection, Content, Context, Customization, Job Portal

INTRODUCTION

Technology has become increasingly important in today's business world. No matter what size of the businesses, there are some needs for Information Technology within the organization. The most crucial technology, the Internet, is helping businesses to run their businesses through websites and running their advertisements and marketing strategy online. This effort will eventually contribute to a positive incline in company's revenues (Levis, Helfert, & Brady, 2008) and it changes the way the business is conducted.

Suvankulov (2010) stated that the Internet was affecting many aspects of the life from the way we gather and share information, and conduct businesses. Businesses realize that promoting their products and/or services through the Internet are so much easier and have tremendous affect. It helps to broaden their audiences, from individual to businesses, young to mature people

all over the world. The widespread usage of the Internet is driven by the various developments of gadgets such as computers, mobile phones, and tablets. The prices of these gadgets are also becoming more affordable than ever. Back in the day, the price for Internet subscription through a local Internet Service Providers (ISPs) was quite high and the users usually had to connect through wire. Nowadays, the Internet is available in most places such as cafeteria, restaurants, shopping malls through wireless connections. Portable modem has also helped the way people connect to the Internet. With cheaper cost per connection, it also has the ability to go mobile. The subscription cost of this portable modem is not as much different as subscribing for a cellular phone's services. In fact, the portable modem uses the same SIM card technology as one could find on a regular mobile phone with the similar method of payment. Smartphone is also another communication device that has changed the way people interact with each other. It has the features that are quite similar to what you could have done previously on a traditional computer. The price for the device has also becoming more affordable and that's what makes it so popular.

Other than promoting products and services, the Internet could also helped businesses recruiting potential employees. The Human Resource (HR) department posts job vacancies with all the requirements needed for the position, and job seekers can decide which opening are suitable to their backgrounds. According to a research by Kapse, Patil, and Patil (2012), in the middle of 1980, the online tools for staff recruitment was divided into two parts which were the company website and the commercial website. The company website was used to market products as well as for recruiting activities. This website had to have sections where company could post job vacancy's information (Dhamija, 2012). The commercial website was specifically used for staff recruitments. Job seekers could read and apply for jobs that employers had posted. Job seekers could also store their resumes online on the company's database for future usage. This type of recruitment activity was called e-recruitment (Maurer & Liu, 2007).

Recruitment is the act of searching for possible candidates to work for a company. Cappeli (2001) definition for recruitment was a marketing process since companies must tell their basic information in order to introduce themselves to employment candidates. The basic information referred earlier includes company's vision, mission, culture, and also their products. This information is needed to be informed to the candidate to increase their interest on joining the company.

The online hiring process can be broken down into three steps: attracting, sorting, and contacting candidates. Integrating recruitment process with overall marketing campaigns is the most important thing a company should do to ensure their success in an online hiring. Some companies have attempted to build a recognizable human resources brands by joining product ads and recruiting ads with similar format, color, and style. Promotional tools, such as company's hats and t-shirts printed with a URL, could drive people to go check the company's website, where the online recruiting systems operate (Cappelli, 2001). E-recruitment had driven companies to redesign their recruitment process and to move quickly integrating web-based human resource systems that provide key personnel processes (Cullen, 2001).

Stevenson (2008) studied the changes in job search activities, especially in their frequencies and characteristics, since the emergence of the Internet. The study found that the Internet significantly changing the job search methods used by the job seekers. Stevenson (2008) also discovered that the job seekers were now more likely to have looked at ads and to have contacted the employer directly. The Internet had also enabled the job seekers to find a specific position which caused them to become more selective about their chosen jobs.

Employers need the right talents to help running their businesses. Companies provide

various kinds of positions in order to hire more capable human resources. To increase the chances of employing the best and the brightest, they must post the job openings to the public. They can advertise the openings in newspapers, but this would cost more time and money. With the Internet, all recruitment processes became easier and more efficient for employers in terms of finding the right candidates (Dafaolas, Nikolaou & Turega, 2003).

The Internet is a cheap and fast medium to be used for recruitment. It is proved by looking at the quick responses from the candidates in applying for the job openings. According Richardson (2009), with the Internet, the recruitment process can be simplified to three processes as followed:

1. **Faster Job Posting:** Openings could be published within a small amount of time, rendering the need for employers to find a proper placement in already obsolete printed media;
2. **Faster Applicant's Response:** Job seekers could find openings very quickly and submit their CV as soon as possible;
3. **Faster Resume's Processing:** Employers received the applicant's information quickly and they could proceed with the selection process right away.

According to a research conducted by Tyagi (2012), the advantage of using the e-recruitment to the company was for cost efficiency. The company could reduce their operational budget that was previously spent to publish openings through media such as newspapers, pamphlets, or books but instead they could only post it through a job portal. The other advantage was that it could be read anytime and anywhere in the world. And the last advantage of using e-recruitment method was by reducing paper print outs because it is going to be in the form of electronic copy.

Verhoeven and Williams (2008) explained that e-recruitment method has helped employers browsing through the candidates' information very easily. The information could be used to determine whether the candidates were qualified for the job or not. It was a time consuming process for the employers to check on the application forms one at a time that was why some job portals had the ability to sort the information automatically. Some job portals could group the application forms into groups of matched and unmatched candidates. It could also eliminate the unmatched candidates as the first stage of recruitment.

Some literatures mentioned that e-recruitment had its advantages and disadvantages for job seekers. Some of the advantages were affecting the labor market, quick turn-around time, and one-stop-shopping place (Feildman & Klass, 2002). But on the other hand, some of its disadvantages were privacy issue, lack of personal touch, lack on the description about the job vacancy (Galanaki, 2002), not user friendly (Feldman & Klass, 2002), and discrimination toward those who do not have access (Pin et al., 2001).

Online job market is one of the most popular types of commerce. A breakthrough in the way employers found employees and job seekers found jobs (Turban, Wetherbe, Westfall & Rainer, 1999). To run an online job market, one needs a portal called "Job Portal". In general, web portal is defined as the site which has specific features that gives access to users who are looking job information and services. According to some researchers, web portal was the main gateway for users to explore and to discover information through World Wide Web (Aragones & Hard, 2002). Dias (2001) said that it was important for users with the same interests on the web portal to interact with each other. The differences between a web portal and a website were laid within the information and the features. Information in a web portal was often updated by the users or the administrator while the information in a website was not always updated. The next difference was the feature that a web portal could offer. Web portal could provide quick access to personalized information and users could manage the information they wished to share. Web portal

could allow users to interact with other users. A website did not have these features.

Nevertheless, the key points of running an online business were trust and the customers' comfort level while using the website. A website must not only be attractive but also easy to navigate while finding information about the products and services. This idea was still becoming the main challenges on designing a website. Because of that, a company should be clever in choosing elements to be put on the website. A well-built website would increase users' interest towards it and of course a not so well-built would just do the opposite. A well-built website was meant to deliver information which in the end can give value to the users. The value may vary depend on what information and theme used on the website. A website would become useless if there is no activity inside it, and even worse when no one access it.

However as stated previously, the online job market did not always operate smoothly. In 2011, one job portal faced numerous complaints originating from both employers and job seekers. Figure 1 shows the rate of complaints in 2011.

The complaints are mainly on clients' dissatisfaction with the features the job portal offered. These complaints should be brought into attention, and a solution should be formulated accordingly. The most visible dominant effect

was the significant drop in the website usage (see Figures 2 and 3). In short, it was losing visitors and the users were moving away to other competitors who offered better features and had better usability.

To increase the number of visitors to the job portal, the company needed to redesign the job portal according to the clients' needs. A thorough analysis was required in order to determine these needs, such as: What do the employers need? What do the job seekers need? What other information need to be shown on the job openings? Or should there be more features?

This research analyzed how a job portal could be optimized to increase its usability based on factors that influenced the interests of job seekers and employers. The researcher used the 7C framework which (Context, Content, Community, Customization, Communication, Connection, Commerce) was a guide for designing a commerce website (Rayport & Jaworski, 2008). The decision on which elements were important according to the user's interest would be made based on this framework. The results can be used to improve the website's features. The following were the description on the 7C Framework (Rayport & Jaworski, 2008), and description of each of the elements in Table 1.

Based on the problem and framework, the study's hypotheses are:

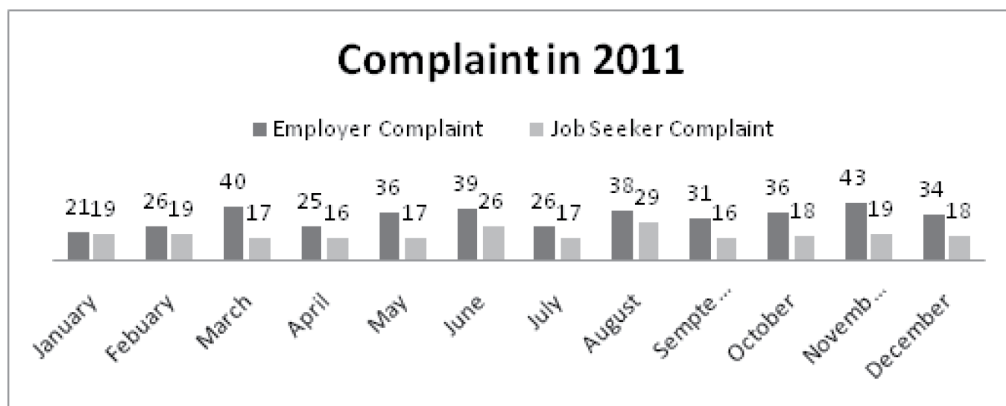*Figure 1. Complaints received throughout 2011*
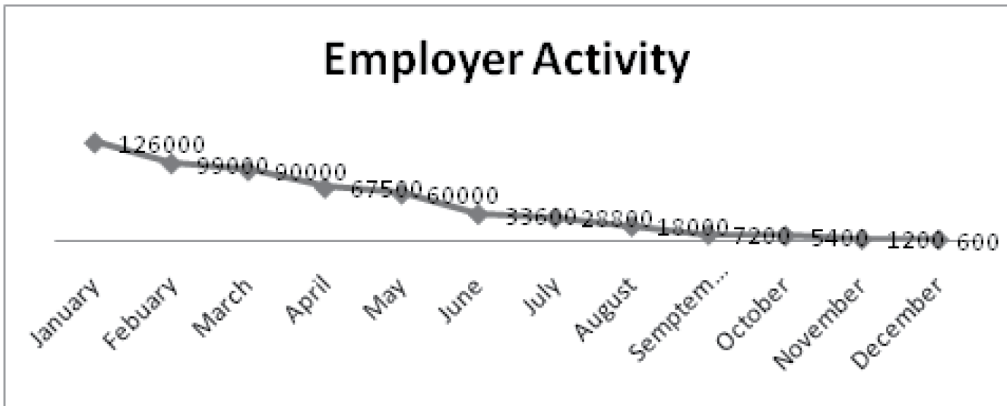
Figure 2. Employers activities
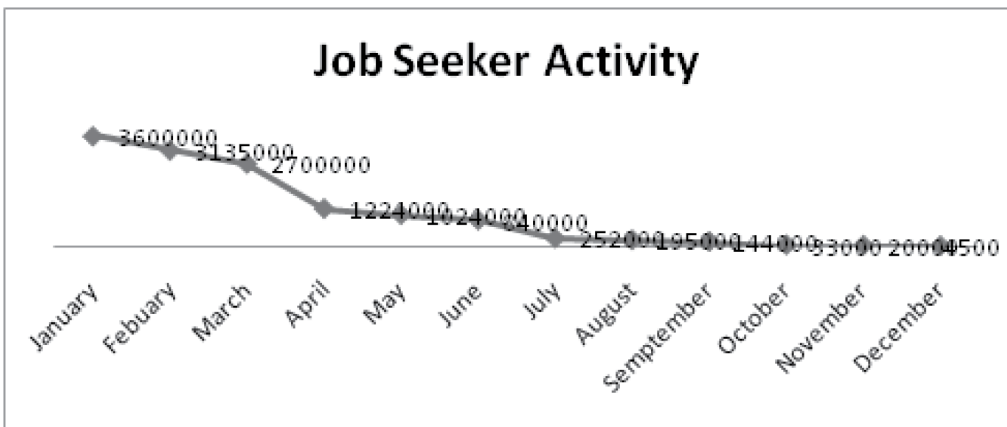

Figure 3. Job seekers activities

Table 1. Description on 7C elements

Element	Description
Context	Relate to the layout design, the look-and-feel of a user interface
Content	Relate to the information provided by the website
Community	Relate to how users of the website communicate to one another
Customization	Relate to the settings of a website. Background color, notifications, privacy etc.
Communication	Relate to how the website can facilitate interaction between the company and the user
Connection	Relate to how a website serves links to other websites to make it accessible by the users.
Commerce	Relate to how the website supports financial transactions between organizations and individuals

H1: The Context element in a job portal is influential to user's interests;

H2: The Content element in a job portal is influential to user's interests;

H3: The Community element in a job portal is influential to user's interests;

H4: The Customization element in a job portal is influential to user's interests;

H5: The Communication element in a job portal is influential to user's interests;

H6: The Connection element in a job portal is influential to user's interests;

H7: The Commerce element in a job portal is influential to user's interests.

METHODOLOGY

In this research, a 35-question survey was created and grouped into eight sections: Context, Content, Community, Customization, Communication, Connection, Commerce, and User's Interest. The questionnaire is measured by Likert scale; point '1' for "Strongly Disagree", point '2' for "Disagree", point '3' for "Agree", and point '4' for "Strongly Agree".

For data analysis, the technique used was multiple linear regression. The multiple linear regression is used to find out which elements of 7C affected the users' interest. In addition to the regression, correlation analysis and chi-square analysis were also conducted. Chi-square analysis was performed to ensure that the result of data analysis were consistent and supported by different data analysis techniques. Chi-square analysis was also done to find out the features that could be recommended to the job portal. The correlation analysis was used to determine the relationship between the 7C elements and the user's interest through the resulting correlation's coefficient and the p-value.

RESULTS

The questionnaire was distributed to a group of randomly selected job seekers and employers, chosen via the simple random sampling technique. The distribution was done via electronic and printed media. It was distributed to 125 job seekers and 125 employers. Out of the 250 responses, only 161 were returned and valid. Out of the 161 respondents, there were 104 job seekers and 57 employers. Out of the 57 employers, 33 were human resources department (HRD) personnel and the rest were non-HRD personnel. Both groups utilized job portals for recruitments. Non-HRD respondents represented companies without an HRD. They are typically work for local companies or the department of human resources. This type of users commonly assisted during candidate selection, especially in giving feedbacks on the candidate's technical skills that would later be recommended to HRD for further processing. Twenty seven respondents originated from local companies, 19 from national companies, and 11 from multinational companies. Females made up for 54% (84 respondents) on the gender distribution, with 84% having used the portal for more than 3 years.

After the questionnaires were collected, the data was analyzed using multiple regressions to examine the relationship between the dependent variable and several independent variables. The variables tested were users' interest (Y) as a dependent variable, and Context (X1), Content (X2), Community (X3), Customization (X4), Communication (X5), Connection (X6), Commerce (X7) as independent variables.

Table 2 shows an F = 10,351 with a probability rate of 0.000, which is lower than 0.05 ($p < 0.05$). We concluded that all independent variables (Context (X1), Content (X2), Community (X3), Customization (X4), Communication (X5), Connection (X6), Commerce (X7)) simultaneously affected the dependent variable (user's interest (Y)).

Table 2 showed that the independent variables had significant contributions towards users' interest. An independent variable was considered individually and significantly influential if it had a p-value score lower than 0.05 (p value < 0.05). The table shows that variables with such score were context (0.004), content (0.003), community (0.016), and commerce (0.000).

Table 2. Regression analysis between users' interest and 7C elements (F =10.351, R = 0.567, R^2 = 0.321 adjusted R^2 = 0.290)

7C Element	t-Score	p-Value
Context	2.914	0.004*
Content	3.068	0.003*
Community	2.431	0.016*
Customization	-0.422	0.674
Communication	1.520	0.131
Connection	-1.605	0.111
Commerce	4.208	0.000*

* significant at p < 0.05

Correlation analysis was conducted to determine the relationship's strength between each independent variable (Context, Content, Community, Customization, Communication, Connection, and Commerce) to the the dependent variable (user's interest). Table 3 summarized the result of the correlation analysis.

The independent variable had a significant relationship if its p-value were less than 0.05. As shown in Table 3, only four variables had a p-value less than 0.05 (context, content, community and commerce). These four variables also had correlation coefficients that were more than 0.25 and less than 0.05, meaning that these variables correlated with users' interest. Three other variables had weak correlation because their coefficient correlations were less than 0.25 and p-values more than 0.05.

The chi-square analysis required a dichotomous data. Since the survey used the Likert scale of 1 - 4 (1=Strongly Disagree, 2= Disagree, 3 = Agree, 4= Strongly Agree), the data was classified in such manner: Scale 1 and 2 were grouped into 1 (Disagree) while 3 and 4 were grouped into 2 (Agree). In deciding whether a respondent agreed or disagreed for each variable, a calculation was performed since each variable had more than one question. The researchers used the median data; in this case the median of 1 to 4 is 2.5. After deciding the median, the next step was to compare the average respondents' score for each variable. If the average is larger than 2.5, it was considered that the respondent "Agree" and a score of 2 was assigned. If lower than 2.5, it was considered that they "Disagree", and a score of 1 was as-

Table 3. Correlation analysis between users' interest and 7C elements

7C Element	Coefficient Correlation	p-Value
Context	0.257	0.001*
Content	0.374	0.000*
Community	0.325	0.000*
Customization	0.065	0.413
Communication	0.143	0.070
Connection	0.058	0.466
Commerce	0.058	0.000*

* significant at *p* < 0.05

signed. This step produced a dichotomous data for use in chi-square analysis.

Table 4 explains the results of the chi-square analysis that determined which one of the seven elements were a significant influence on users' interest (indicated by a p-value lower than 0.05 and chi-square score higher than 3.841).

Based on Table 4, it was concluded that only four variables were proved to significantly influence users' interest. This could be seen from the p-values of less than 0.05 and the chi-square score of more than 3.841.

To settle on features that could be recommended for a job portal, chi-square analysis were also conducted. There were 17 questions from the survey on specific features. The result of this analysis was that only six questions affected the users' interest on a job portal. The six questions were broken down based on topics: two on context element, one on content element, one on community element, and two on commerce element. The discussion section explains more about the specific features of the four elements.

Based on the analysis, the conclusions were:

H1: The Context element in a job portal is influential to users' interests.

Hypothesis 1 was accepted because the p-value was less than 0.05 for multiple regression analysis and chi-square analysis:

H2: The Content element in a job portal affects users' interest.

Hypothesis 2 was accepted because the p-value was less than 0.05 for multiple regression analysis and chi-square analysis:

H3: The community component in a job portal is influential to users' interests.

Hypothesis 3 was accepted because the p-value was less than 0.05 for multiple regression analysis and chi-square analysis:

H4: The customization component in a job portal is influential to users' interests.

Hypothesis 4 was rejected because p-value was more than 0.05 for multiple regression analysis and chi-square analysis:

H5: The communication component in a job portal is influential to users' interests.

Hypothesis 5 was rejected because p-value was more than 0.05 for multiple regression analysis and chi-square analysis:

H6: The connection component in a job portal is influential to users' interests.

Table 4. Chi-square analysis between users' interest and 7C elements

7C Element	*Chi-Square* **Score**	*p*-**Value**
Context	10.794	0.001*
Content	21.368	0.000*
Community	7.642	0.006*
Customization	0.330	0.566*
Communication	1.894	0.169*
Connection	0.732	0.392*
Commerce	18.569	0.000*

 * significant at p < 0.05

Hypothesis 6 was rejected because p-value was more than 0.05 for multiple regression analysis and chi-square analysis:

H7: The commerce component in a job portal is influential to users' interests.

Hypothesis 7 was accepted because p-value was less than 0.05 for multiple regression analysis and chi-square analysis.

DISCUSSION

Based on the multiple linear regression and chi-square analyses, it was determined that the seven independent variables (context, content, community, customization, communication, connection, commerce) affected the dependent variable (users' interest) simultaneously. However, only four of them significantly affected user's interest: context, content, community, and commerce.

Context element had a positive influence on the users' interest. This meant that users' interest could be affected by the aesthetics of the page design and a well-designed functionality (giving users the feeling of comfort while browsing). Aesthetics in this context includes visual, sound and interactive feature. Visual communication can be delivered by using colors and texts that are displayed on the screen to communicate something to the visitor of the site. The web designer should not overlook the effects of graphic design elements. If we choose a vibrant, warm red color for the menu, we communicate something different than if we had chosen a calm, cool blue color. If we have a specially designed typography made for our headlines, we leave a more personal impression on our website than if we choose not to. The only thing we cannot avoid is that there is always visual communication on a website, whether the use of visual effects is deliberate or not. The visual effects play an important role in the communication of content, in addition to creating more or less aesthetic experiences. The term functionality in this context covers the

usability aspects of the interfaces and the Human Computer Interaction (HCI). The objective is to create effective websites where the user can quickly and efficiently get the information without being delayed by downloading times or confusion when navigating on the website (Thorlacius, 2007).

Based on the chi-square analysis, there are two features required by a job portal that may affect users' interests. These features are the site map and the information layout, which can influence users' interest in using the job portal. The layout is defined by placing all information about job vacancies, events (seminars, workshops, trainings) so it can be easily accessed by job seekers without having through many pages in order to get the information. Besides the placement, menu on the job portal must be easily understood and accessed. With the right layout, users can easily get the needed information. The second feature in context element is the site map. With the site map, users can get all the menu structure so they can find out what page they want to access through the menu without having a confusion in accessing the job portal (Tedesco, Schade, Pernice, & Nielsen, 2008). In addition to these two features, the job portal design must be consistent. Consistent meant the uniformity of the color usage, type of font, size of font, and the placement of the information. In the functional side, the job portal must perform well. The perfomance itself can be determined by how long does it take for the job portal to load the contents. The eight golden rules could be used as a basis for job portal development. These eight golden rules include most of the rules that act as guidance for designing interface aesthetically and functioning in the portal (Shneiderman & Plaisant, 2010).

Content element significantly affected users' interest. If the job portal has had adequate information, users' interest would increase. Users' interest will grow if the job portal offers information that can be easily understood. For instance, the tools will guide employer to fill in common descriptions information such as job description, salary, position, placement, and some other important notes if there is any. If it

is necessary, the information available should not only be available in text but it could also be a combination of multimedia contents (pictures, videos, and audio) (Rayport & Jaworski, 2008).

In the job portal itself, there are a lot of important information and processes that would be needed by both job seekers and employers. Some examples of that are information on how to become a member, how a job seeker can create a resume, how to find a job that matches their skills and experience, how to apply for a job online, how employer can publish job vacancies, view the applicants' resume, etc. These do not always have to be written but could be presented in symbols or graphics. Job seekers might also need to upload their video profiles and the employers could view the video profiles during the recruitment process. With the video profile, it may give a chance for the candidate to skip the interview process. With the help of video profile, it would save time for both company and candidate since they do not need to arrange a face to face meeting.

According to the result of chi-square analysis, users' interest can be influenced if the job portal could provide features that allow users to interact and to discuss more about their job, career, and interest to one another. The features could be in a form of forums or blogs that could be integrated into the job portal. All of these features were included in the community element.

It was also proved by the chi-square analysis that users' interest would increase if the job portal could communicate about the online service and could facilitate the financial transaction activity. This commerce element would entail services offered by the job portal along with the costs. Users should be able to select the method of payment to complete the transaction, as well as to receive a payment confirmation (Chaffey, 2007). Then the job portal administrator would process the request and finalize its completion. The commerce service was geared more towards employers who wanted to publish job advertisements. With this feature, it would help employers when they are going to pay the fee of placing the job openings in the job portal website. This way, they do not need to leave the office to do the payment. For job seekers, the commerce element could be used for registrations and payments for events, such as seminars, trainings, and workshops. Other than having the payment to be host on the job portal, financial transactions also can be done by using e-banking facility offered by many fiancial institutions. By integrating this feature on the job portal with the help from trusted e-banking system, it would tremendously help the job portal's users to complete their transaction. The online payment must also give the user the option to pick which payment method they prefer.

In addition to the four elements that had been described, there were three other elements that were not significant individually but simultaneously influenced users' interest when these elements combined together with the four significant elements. These three elements were customization, communication, and connection.

Customization element was proved to be insignificant in influencing users' interest, but still without it, users would find a website to be unattractive. With the ability to customize settings, users could make changes and save them according to their preferences. Job seekers, especially, should be given templates for writing resumes (Heikkinen, Eerola, Jappinen, & Porras, 2005).

The communication element was also proved to be insignificant to influence users' interest, but similar to customization element, the communication element was not completely useless. The implementation of communication element would make it possible for users to interact with the website administrator (Rayport & Jaworski, 2008). In this case, it could give users information about events that would be held by the job portal's company. It could also facilitate users if they wanted to file a complaint.

The last element, the connection element, was also proved to be insignificant in influencing users' interest in a job portal. The connection element provided users access to different web pages (e.g. employer company website) via web links (Rayport & Jaworski, 2008). In a job portal, this component could be applied

for companies that wished to provide job seek-ers with external links to their website, so that candidates could familiarize themselves with the prospective employer.

CONCLUSION

By referring to the 7C framework (context, content, community, customization, commu-nication, connection, commerce), this research concluded that there were four out of seven factors that effected users' interests toward online job portals: context, content, commu-nity, and commerce. Using the multiple linear regression technique, the four factors were significantly affected the usage of job portals and also as they were combined together, they were affecting the users' interest. Apart from the multiple linear regressions, the chi-square analysis was also used to determine the differ-ences in the 7C elements based on types of users (job seekers and employers) and genders. The result showed that the element of Content had significant difference between the job seekers and the employees. Also, it was found that dif-ferent gender did not necessarily have different preferences in any of the 7C elements.

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