An Assessment of a Psychometric Based Self Filtering Recruitment Agent in Zimbabwe

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***Abstract*— Nowadays the internet has the largest change in many aspects of human life and interaction. It has shown a dramatic change in business organizations ranging from the daily operations of the business, advertising as well as human resource management. The internet has recently acted as a conduit between employers and job seekers. Technology has enabled corporate websites, recruitment agencies and job seekers to become more sophisticated, interactive and to connect globally 24 hours a day, 7 days a week. Many graduate students now use the internet to source recruitment and employers also portray it as a pool to enrol the best candidates for their proposed vacancies. When an employer uses a recruitment site he or she is able to provide job seekers with detailed information on the qualifications they will be looking for in a candidate. One can even create a customized response form to help further qualify your applicants. A company can even put its recruitment brochure online, highlighting the benefits that it offer as well as what makes it stand out from the rest. The main challenge of Human resource managers along with line managers comes on the selection of the best prospective candidate for a particular job vacancy. The undertaken research is mainly focused on recruiting the best candidate for a particular job advertisement on corporate websites incorporating the idea of psychometric testing to enable filtering of candidates from the pool of those who might be interested in a vacant position in question. The reason for this is supported by an increase in the number of qualified graduates as well as other certified job seekers widespread all over the world. Although most of them will be qualified, most employers fear enrolling people who despite having the requirements, they might fail to perform the required job.**

***Keywords*— Internet, Psychometric test, Recruitment, Filtering candidates**

I. Introduction

Human resource management (HRM, or simply HR) is the management of an organization's workforce, or human resources. It is responsible for the attraction, selection, training, assessment, and rewarding of employees, while also overseeing organizational leadership and culture, and ensuring compliance with employment and labour laws. Recruitment is a function that requires business perspective, expertise, ability to find and match the best potential candidate for the organization, diplomacy, marketing skills (as to sell the position to the candidate) and wisdom to align the recruitment processes for the benefit of the organization. Many professional organizations have seen it as a waste of time to approach recruitment agencies as they seem to submit every person who responds to the particular job advertisement. The biggest challenge for such professionals is to source or recruit the best people or potential candidate for the organization (Naukrihub, 2007). The use of filtering by a recruitment agent enables companies to get the best people to fill in their vacant positions. The advantage of such a system is it ensures a best-fit position for the job-seeking candidate.

II. Trends and Drivers to e-Recruitment

There has been a steady rise in online recruitment during recent years and there have been a number of research studies that have measured employer take up and progress. Most Global companies now use some form of online recruitment [2]. Taleo research (2003) found out that 93 per cent of companies in Europe and 96 per cent in America use online recruitment [3]. Another key development is the big increase in the proportion of companies that only allow applicants to apply online for jobs advertised on a corporate careers website (from 27 per cent in 2000 to 77 per cent in 2005) [3].

In Europe, take up of online recruitment methods substantially increased between 2001 and 2004, from just over 40 per cent of organizations to over 70 per cent [4]. In the UK specifically, take up by companies has seen the same general upward trend in 2002, the percentage of organizations using their website to advertise jobs was 72, increasing from 93 per cent in 2005 [4].

Research conducted in the USA and Canada [6] shows that large firms are more likely to have their own websites than smaller ones. For example the 2002, ninety per cent of large corporations in the USA were using net-based recruitment [5]. However, the Canadian research indicates that where they were aware of the Internet and had websites, small firms used their sites to advertise vacancies to the same extent as large firms. Overall, it appeared that large firms had the advantage over small firms because they were more likely to have their own websites.

A global survey of top companies in 2002 [7] identified the organizations that used corporate websites to recruit, by sector. There was a large range, from 100 per cent adoption in the healthcare sector to 84 per cent of companies in the utilities sector. Rather surprisingly, this survey reported that 98 per cent of companies in the manufacturing sector used online recruitment compared with only 87 per cent in the financial sector.

ESPO [8] reports that online applications were widely accepted across European civil-service organizations. More than in many other sectors, it seems that complex, multi-stage recruitment processes are frequently in place, including pre-selection and/or testing electronically.

There is a sectoral differences in the use of e-recruitment in the UK and Ireland. Among the manufacturing and production sector, 63 per cent of companies in the CIPD survey [9] included information about vacancies on their own websites. For the voluntary and community sector (VCS) the percentage was 82, for the private sector was71 per cent and for the public sector, 85 per cent. In terms of putting vacancy information onto commercial websites, the figures were 29 per cent among the private and public sectors.

Recent research by the IRS [6] of FTSE 100 companies provides insight into where organizations are actually focusing their e-activities. Currently FTSE-100 companies approach online recruitment in one of the three main ways:

1. They do not use it at all
2. They use it to enhance the recruitment process – for example to provide information on the organization, general careers or advertise job vacancies.
3. They have developed a dedicated part of their website, which is a central hub for online recruitment activities – adverts, online applications and the facility to create candidate profiles.

In addition, one in 10 FTSE-100 companies that have dedicated recruitment sites are outsourcing the process to the third parties – to develop online adverts, post jobs, filter candidates and pre-screening tests.

Driver to internet recruitment

An Irish study conducted by the Public Appointment Service shows in their context that, the ability to target a wider and more diverse pool of candidates is a key driver to internet recruitment. This is likely to reflect, in some cases, skills shortages or the shift in job seekers search strategies and/or preferences as a result of increased access to the Internet. It may also reflect the importance employers now place on aligning and embedding diversity policies in the recruitment practice. Online recruitment clearly has the potential to target a diverse range of candidates, including those from ethnic backgrounds [11]

By practicing online recruitment companies are also likely to improve their corporate image and profile. Recruitment costs and administrative burden are also reduced through the use of internet. Better tools for the recruitment team are also employed in the recruitment process.

III. Psychometric tests and other selection methods

There are many ways of assessing people. However each method varies in terms of reliability and validity. Assessment Centres hold very high reliability and validity if done properly, but they are expensive, require lots of resources and skills to run and only assess 6-12 people at a time. We've already said that structured interviews are good but again, they take time and resources. Psychometric tools do cost money. However the cost is offset by the number of candidates that can be assessed and the information that can be gathered in the assessment compared to other selection methods [19]. Again, an interviewer's time is costly. A panel interview with 3 interviewers is likely to cost around 2-3 times the fee of a psychometric test and yet will not gather as much information [19]. If one is using the right psychometric tool, its reliability and validity will already have been assessed and will be good. On the other hand it is an assumption that interviews will be reliable and valid if run by trained people as this is rarely tested.

IV. Why use psychometric tests?

Psychometric tests are able to cover a lot more ground in far less time. Aptitude tests give us an indication of numerical, verbal and spatial skills in 18 minutes if using modern tests like the Saville Consulting Aptitude range. There's no way we could discover this information in even a one-hour interview [19]. Personality assessments can sample and assess personality traits relevant to performance on the job. The average completion time for good personality assessments is 30-40 minutes [19].

V. Research design

A web based recruitment website has been developed that acts as a prototype to be implemented on a company website. It was designed in such a way that prospective candidates could access the website from any place. A candidate can create an account on the company website and log on the website. The candidate would then go to vacancies where a list of vacancies would be displayed. The job seeker will then select a vacancy in his /her respective field and a briefing of the vacancy is given. This could include the required qualifications, job description including the key responsibilities and the salary could be displayed as well. If one thinks he or she meets the requirements of the vacancy, is asked by the system to go through a series of psychometric testing before submitting his/her CV. These will be ability tests mostly that will evaluate the candidate's understanding in his or her field. Thus tests are given in relation to your field of work or expertise and are timed for example 30 minutes for a 25 multiple choice questions ability test. The tests will be marked and computed as one will be completing the questions and an overall mark is given when the time is off. Each individual is given 5 test attempts after creating an account. If one fails the test the system will automatically less one to the 5 attempts given. When one decides to go for the tests the second time the second time, he /she is given a different test to avoid memorising the questions for cheating purposes. The process is repeated until one exhausts all 5 attempts given. If one passes the test despite the fact that it is on the first attempt, the person is required to upload his/ her CV which is stored in a database. The database keeps track of the number of attempts each individual has taken.

VI. Participants

All in all, 35 people were randomly selected at Bindura University to participate in the research study and interact with the system. 25 were part IV students at the University and the remaining 10 were members of staff at the University. All the students had taken course of introduction to Computers, and thus it was assumed that all of them would experience no problems in using the system despite the fact that the researcher had also oriented them towards its use. The distribution of males to females was 60% males and 40% females. The age range of students was very similar between groups, with the vast majority of students falling in the range of between 20 and 30 years of age.

VII. Research Instrumentation

Three instruments were used in this study:

1. Candidate Questionnaire
2. SPSS for data analysis
3. E-recruitment system

VIII. The Self-Filtration Recruitment Agent

The whole project was done on Dreamweaver 8 as the application programming language. The client side programming was done using php and java script. For the database MySQL 5.1 version was used. Figure below is an example of the displayed vacancies on the Self-Filtering recruitment agent. The vacancies are added by the System administrator and closes when the recruitment process is completed

Once interested one can read more on the vacancy and proceed to psychometric testing which is composed of a series of questions on abstract reasoning, spatial test data checking, and etc. depending on the vacant one will be taking. If one passes the test he or she is able to proceed to the process of CV upload and if the candidate fails to perform well in the tests and, if all five attempts are finished the candidate will never be able to log on the system again.

The image above shows the platform in which one uploads his/her CV.

IX. Results

X. Questionnaire

A six item perception questionnaire was administered to the candidates to assess their view on the use of a Self-Filtering Recruitment Agent which can be implemented on corporate websites. Below is the questionnaire that was prepared to the candidates who interacted with the system

Questionnaire: Assessing the impact of recruiting using a Self-Filtering Recruitment Agent

May you kindly respond to the following questions by ticking in the appropriate box that best represents your opinion on the research carried out? I would appreciate any information you may provide me with.

Assessment of the system

1. Are you satisfied with the current methods of recruitment?

Strongly Agree Agree Strongly Disagree Disagree

2. How best can you describe a Self-Recruitment Agent as a tool for recruitment?

Strong Average Weak

3. How would you describe your satisfaction on the functionality of the Self Filtering Recruitment Agent?

Agree Strongly Agree Disagree Strongly Disagree

4. Does the self-filtering recruitment agent offer excellent recruitment method in comparison with other traditional methods of recruitment?

Agree Strongly Agree Disagree Strongly Disagree

5. Does the system provide a filtering effect to prospective candidates?

Agree Strongly Agree Disagree Strongly Disagree

6. Do you see the proposed self-recruitment agent vital to the recruiter in recruiting the best candidate?

Agree Strongly Agree Disagree Strongly Disagree

Recommendations

Which recommendations can u give to the system in order to improve on web based recruitment with the aim of recruiting the based candidate?

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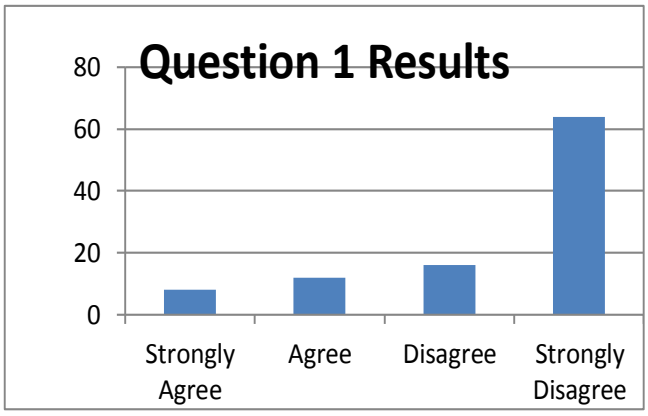
XI. Questionnaires Response

Question 1

Are you satisfied with the current methods of recruitment?

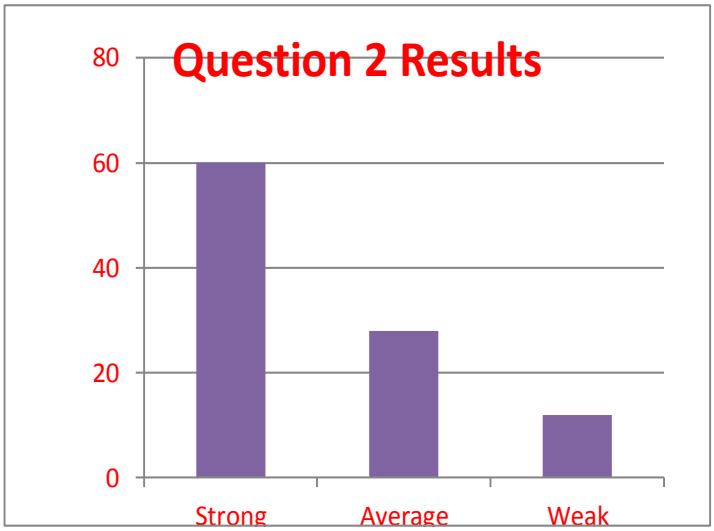


ANALYSIS

Candidates could give a variety of opinion with the kind of recruitment methods being used. Most of them were not satisfied by the current recruitment methods in Zimbabwe. Diagram above shows an illustration of their conclusion to the question.

QUESTION 2

How best can you describe a Self-Recruitment Agent as a tool for recruitment?

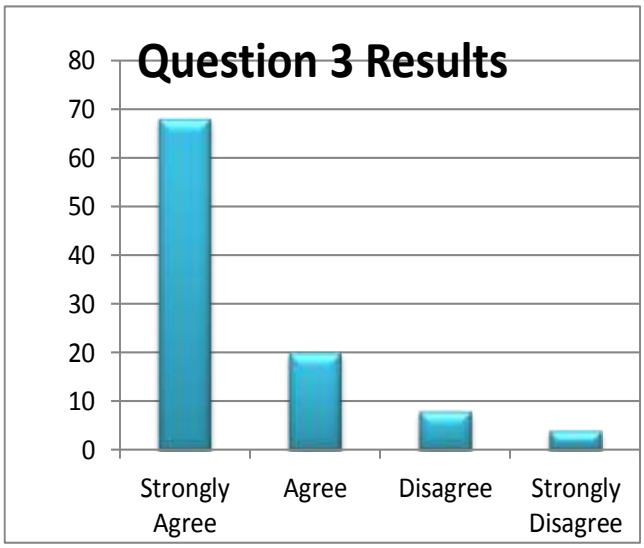


ANALYSIS

Most of the candidates argued that with well-designed tests at each level, the Self-Filtering Recruitment Agent is a strong tool in the recruitment process. As it can be implemented on company websites it provides instant results to both employers and job seekers. However a few who disagree were basing on the fact that it should be coupled with other forms of recruitment.

QUESTION 3

How would you describe your satisfaction on the functionality of the Self-Filtering Recruitment Agent?

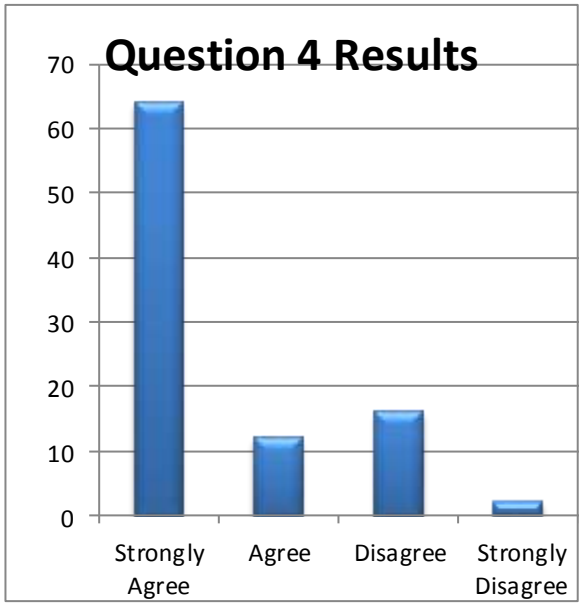


ANALYSIS

From the above diagram many people were able to strongly support the functionality of the system in that it could perform the function it was intended to perform in relation to the objectives of the system. However a few were able to argue on its functionality basing on the fact that some candidates with less knowledge in computers might face some difficulties in the tests.

QUESTION 4

Does the self-filtering recruitment agent offer excellent recruitment method in comparison with other traditional methods of recruitment?

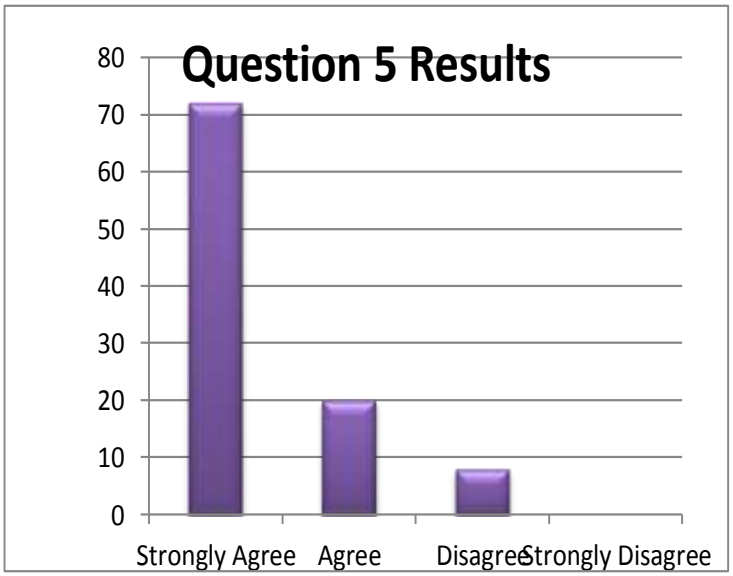


ANALYSIS

Many people argued that it was a vital tool as compared to the tests written on paper and pencils. Their argument was based on facts that there could be bias in the paper and pencil environment as the marker might be biased towards someone whom they want to succeed on the tests, unlike on the system where the test is marked by the system as one will be writing.

QUESTION 5

Does the system provide a filtering effect to prospective candidates?

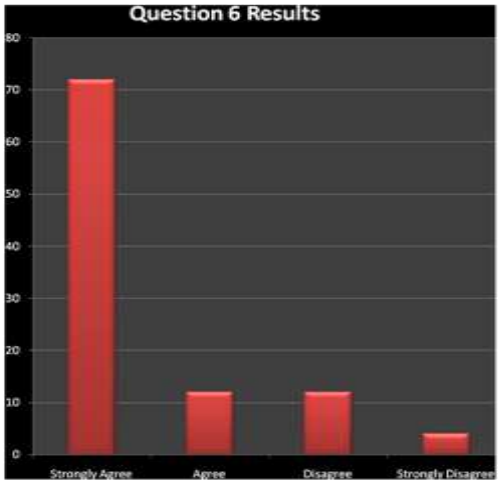


ANALYSIS

A lot of candidates were able to identify the filtering effect of the candidates basing on the idea that the system could compute the results of each individual and record their results and attempts in which the candidate has completed the tests. Thus an HR manager along with line managers can filter the candidates using a criterion they need. Those who disagree were basing on the fact that one might be seek when he/ she completed the test and we cannot clearly conclude that the person failed the test.

QUESTION 6

Do you see the propose Self-Recruitment Agent vital to the recruiter in recruiting the best candidate?



ANALYSIS

Most of the candidates were able to support the use of the system in identifying the best candidate. Their argument was that a person's capability to perform the required work can be seen at the first stage of being able to complete the test well which will be in line with his or her line of work. How can one argue that he/she is able to perform the job well whilst failing to complete a test written as part of the job requirements despite having the qualifications for the proposed vacant? Those who did not agree were basing on factors like, the location of the person writing the test, i.e. some may complete the exam in noisy areas lie internet cafés, the individual might not be in a mood to write the exam and some might have left school a long time back and might miss the required answers.

XII. Overall Summary of Results

A number of observations and lessons were learnt from the implementation of such a system. Most candidates were able to support the use of such system as they found it convincing and giving a lot of advantages to business organizations. They were able to site a lot of advantages in using such a system. The candidates could view the system as a valid tool for use in the country as many companies are now biased in the recruitment process. They argued the platform is not well as when recruitment is done only on CV submission and interviews some CVs will not be considered and some may not even attempt to open your CV. Those argued that those with relatives on a recruiting organization had an upper hand and their CVs are likely to be considered first. The candidates also argued that the tool could be useful as some companies like Old mutual is now practicing psychometric testing but it will be after CV submission and the tests are done on paper and pencil and one cannot guarantee the reason of rejection on the first stage of CV submission. They enlightened that the system provides a state-of-art filtration tool in which one can be satisfied on the first stage of screening and that the operation is instant, without wasting time to the candidate who can move on to search for employment to the next companies. Otherwise there is no suspense to the job seekers as they can get their results instantly.

However, there were a few candidates who did not agree with the use of such a tool for recruitment. Their reason was mainly based on the fact that the candidate's response to the tests depends on his or her mood by the time he will be completing the questions. They argued that the system should be used with other forms of recruitment like interviews.

XIII. Conclusion

The research was a success as the major objectives of filtering candidates by ability testing was achieved. After the filtration process the best candidate could be identified by the information stored in the database. This includes the candidates pass mark for the test, as well as the number of attempts a candidate had in completing the psychometric tests out of the five attempts given by the system. In an event a candidate has the same pass mark and attempt with another, the time for completion could be the constraint used in identifying the best candidate.

Thus the Self-Filtering Recruitment agent had a positive impact in the recruitment process as the sample of candidates that interacted with the system were able to clarify as well as giving advantages of such a system if implemented in organizations, some of the benefits that the recruiter did not have in mind. They were able to give meaningful advantages both to companies and job seekers

Among the advantages to both parties in recruitment using such a system they highlighted that both employers and job seekers can elect to maintain their confidentiality. Employers can elect to search the databases without posting a job if the vacancy is sensitive in nature, or they can post a vacancy while keeping the company name confidential. Similarly, candidates can post their CVs online while keeping their names and present employer's name confidential.

Finally, the researcher acknowledge that it is never easy to conduct a research of an emerging field such as Internet-based recruitment and testing because at the time this research goes to print, new developments and practices will have found inroad in organizations and new research studies will have been conducted. Again, this shows that for practitioners and researchers the application of new technologies such as the Internet to recruitment and testing is both exciting and challenging.

References

[1] Capgemini (2004) Online availability of public services: how is Europe progressing, 5th report for DG Information Society & Media

[2] Dineen B R, Ash SR, Noe R A (2002), 'A Web of Applicant Attraction: Person-Organization Fit in the context of web based recruitment', Journal of Applied Psychology, Vol. 87(4), pp. 723-734.

[3] hausorf PA, Duncan D (2004), 'Firm size and ineternet recruiting Canada: A preliminary investigation', Journal of Small Business Management, Vol. 42, pp.325-334.

[4] EPSO (2005) Civil Service Selection Procedures across Europe.

[5] CIPD (2005), Recruitment, Retention and Turnover Survey, Chartered Institute of Personnel Development
[6] (200), 'Log on, Log in: corporate online recruitment in FTSE 100', Recruitment and Retention: IRS Employment Review, 12 August.
[7] Enhance Media Ltd (2005), The National Online Recruitment Audience Survey, Winter.
[8] (2005), Graduate recruitment rising, survey finds, www.educationguardian.co.uk, 13 October.
[9] Lievens F, Harris M M (2003), 'Research on Internet Recruiting and Testing: Current Status and Future Directions', in Cooper C L, Robertson I T (eds), International Review of Industrial and Organisational Psychology, Vol. 18, John Wiley & Sons.
[10] (2005), 'Online recruitment in the UK: 10 years older and wiser', Recruitment and Retention: IRS Employer Review, 29 April.
[11] Barber L, Hill D, Hirsh W, Tyers C (2005), Fishing for talent in a Wider Pool: Trends and Dilemmas in Corporate Graduate Recruitment, IES Report 421.
[12] Kerrin M, Kettly P (2003), E-recruitment: is it delivering?, IES Report 402.
[13] Snell A (2003), Process savings through careers site best practices, www.ilogos.com/en/expertviews/articles/careers/20030429_Ashtml, accessed on 21/11/05
[14] Hausdorf PA, Duncan D (2004), 'Firm size and Internet recruiting in Canada: A preliminary investigation', Journal of Small Business Management, vol. 42, pp325-334.
[15] Bartram D (2001), Testing through the internet: Mapping the issues for managing the future, A practitioner Workshop, Practitioner Forum at the division of Occupational Psychology conference, Winchester, UK.
[16] Psychometric journal: Human Resource Management Training Courses in Singapore, Hong Kong and Online
[17] Lievens, F., & Harris, M.M. (2006). Research on Internet Recruiting and Testing
[18] Straus, S.G., Miles, J.A., & Levesque, L.L. (2004). The effects of video conference,telephone, and face-to-face media on interviewer and applicant judgments in employment interviews. Journal of Management, 27, 363-381.
[19] Travagline, A., & Frei, R.L. (200, April). 21st century recruiting: A model for Internet-based realistic job previews. Paper presented at the 16th Annual Conference of the Society for Industrial and Organizational Psychology, San Diego, CA.
[20] Weiss, E.M., & Barbeite, G.F. (2004). Internet as a job source and job site preference. Paper presented at the 16th Annual Conference of the Society for Industrial and Organizational Psychology, San Diego, CA.