

Recruiters' Perceptions of Information Systems Graduates with Traditional and Online Education

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ABSTRACT

Online education is on the rise as the number of online courses and degrees has increased significantly in recent years. This trend will continue as many institutions incorporate online studies as part of redesigning and making changes to their curricula. As a result, an increasing number of graduates with a significant part of their education completed online will start to appear in the job market. However, it remains unclear how these graduates are regarded within the job market, compared to their counterparts with strictly traditional studies. To investigate this issue, we presented a set of vignettes describing hypothetical Information Systems (IS) graduates to 82 IS professionals with recruitment experience to ascertain whether an IS graduate's education mode (online versus traditional studies) influence their employment judgments. The findings did not support the notion that an IS graduate's education mode was an important consideration to recruiters. In contrast, other factors included in the vignettes, such as work experience and academic performance were more salient to recruiters. Overall, our findings agree with the viewpoint that online education is evolving into a viable alternative to traditional education, with 'other factors' dominating perceptions of IS graduate attractiveness.

Keywords: Online Education, Employment, Employer Satisfaction

1. INTRODUCTION

Online learning has experienced strong growth in recent years. Institutions of higher education are continuing to expand their offerings of online courses and degrees, thereby encouraging students to enroll in online courses. A 2011 Sloan survey into online education in the United States reported a growth rate of 10% in enrollments from 2009 to 2010 (Allen and Seaman, 2011), with an estimated number of students taking at least one online course increasing from 5.6 to 6.1 million across 2,500 institutions. Allen and Seaman (2011) also reported that in Fall 2010, online enrollment as a percent of total enrollment reached 31%. While it is difficult to estimate the size of the online education market, Marketdata Enterprises (2011) provide a figure of \$60.5 billion in 2010 - up 24% over 2009.

Given the growing market for online education, clearly an important question is how an online education is regarded within the job marketplace for graduates: how those who have received their education online are viewed among employers and recruiters. Specifically, students completing online programs are interested to know if employment opportunities are available to them the same way they are available to graduates with a traditional education. Additionally, educators are interested to know the

attractiveness of online education to prospective employers, as they are interested in the success of their graduates in terms of job placement. Educators are also interested in evaluating, improving, and redesigning the curriculum to prepare graduates that are more qualified. In short, while debate continues as to whether the quality of online instruction is equal to, or can even surpass traditional modes of course delivery (see, e.g., Bernard et al., 2004; Şahin, 2006), an important issue remains as to whether non-traditional forms of education are becoming more accepted within the job marketplace for graduates.

To date, there has been little research into the issue of whether students completing their education through non-traditional forms of instruction are perceived within the wider job market as being of equal quality when compared to students completing their studies through a more traditional education mode. An exception to this observation has been two recent studies – Kohlmeyer, Seese and Sincich (2011), and Metrejean and Noland (2011) – that investigated this issue within the accounting profession. Metrejean and Noland (2011) reported results of a survey of CPA (accounting) firm recruiters in which surveyed recruiters did not perceive a difference in a candidate who receives an online MACC (Masters of Accounting degree) and a candidate who receives a MACC from a traditional

classroom-based accounting program. In contrast, Kohlmeyer, Seese and Sincich (2011) found a ‘strong preference’ to hire students who had completed their accounting studies within a traditional face-to-face environment, opposed to students completing their accounting studies online. The most frequently provided reasons by their respondents for having a bias against online accounting degrees were (in order of decreasing frequency):

- Lacking interpersonal experiences;
- Inferior reputation and quality of online institutions;
- Professors really did not know their online students;
- Lack of rigor in online classes; and
- Lack of familiarity with online instruction (Kohlmeyer, Seese and Sincich, 2011, p.156).

In explaining their findings, Kohlmeyer, Seese and Sincich (2011) raised the possibility that their respondents (mainly senior practicing accountants) may have been reacting to the reputation of online programs, rather than the delivery mode of education, and may have lacked exposure to online education.

The perception of graduates with an online education is also important to the field of IS. In recent years, less favorable perceptions by students as to employment prospects within information technology-related professions have precipitated a decrease in enrollment within IS programs (Huang, Green and Day, 2008). This worrying trend in IS enrollments has motivated many IS Departments to revisit their programs and redesign their curricula. Presenting students with more opportunities and options by providing more online courses has been one way to attract more students to the program. While the trend of offering online courses in IS is more established for graduate degrees (Kruck and Reif, 2004), online undergraduate degrees are now being offered by well-respected institutions (for example, the New Jersey Institute of Technology offers a fully-online Bachelor in Arts in Information Systems).

While the issue of gauging the quality of graduates with different educational backgrounds remains an interesting and open research thread, in this study, the focus is to report on the perceptions that may exist within the employment marketplace as to the attractiveness of graduates with different education modes to potential employers. Accordingly, IS professionals with recruitment experience were surveyed to ascertain whether they regarded graduates with online education to be less attractive compared to graduates with traditional studies. As part of a broader investigation into factors potentially affecting the attractiveness of IS graduates, data was also collected on recruiters’ attitudes towards other factors hypothesized to influence their judgments of the attractiveness of graduates. These factors included institution reputation, work experience, and academic performance. Specifically, this study addresses the following research questions:

- RQ1: What factors potentially influence IS recruiters’ perceptions of an IS applicant’s attractiveness as a potential employee?
- RQ2: Does education mode (traditional versus online) affect IS recruiters’ perceptions of an IS applicant’s attractiveness?

2. PROPOSED MODEL

Although many organizations develop employment guidelines, judgments of employability remain highly subjective. For example, Nguyen (2006) found that recruiters’ friendship with job applicants influenced their screening decisions. In addition, a number of studies have found biased employment practices. For example, Kmec (2006) reports that scholars have asserted that race–sex hiring discrimination exists, with employers’ judgments of employability being unfavorably influenced by the applicant’s membership in a certain group with negative stereotypes. In addition, research into promotions and job opportunities has frequently reported a gender bias (see, e.g., Lyness and Heilman, 2006). Other social biases, such as opportunity hoarding, have been noted in the literature (Tilly, 1998) in which members of a group in power purposely exclude out-of-group members for jobs. Collectively, these findings support the view that recruitment decisions can be subjective and are potentially influenced by a number of factors, such as personal attitudes and social factors, and therefore may contain biases.

For any graduate searching for a job, an important stage in their job search is when a recruiter reviews the application materials to assess their suitability for the open position. The main document in these materials traditionally will be the applicant’s résumé. In this respect, prior studies into recruitment practices have highlighted several factors recruiters consider more salient in making their screening decisions. These factors include: (1) a targeted career objective; (2) relevant education and training; (3) relevant work experience; (4) interests, activities, and special skills; (5) references; (6) the format, visual appeal and spelling of an applicant’s materials, and (7) personal attributes, such as an applicant’s attractiveness, intelligence, conscientiousness and perceived values and personality traits (see, e.g., Fritzsche and Brannick, 2002; Graves and Karren, 1992; Kristof-Brown, 2000; Moy, 2006; Tews, Stafford, and Zhu, 2009).

While acknowledging the rich context of recruitment practices, the focus of this study is on factors the authors considered were measurable and less arbitrary when compared with other factors included in related research, such as a résumé’s format. In the terms used by Wade and Kinicki (1997), we have therefore chosen to concentrate on objective qualifications (e.g., work experience, academic achievement), rather than subjective qualifications (e.g., interviewer’s personal assessments of applicant characteristics gathered during the interview session).

2.1 Work Experience

Work experience is the first factor included in this study as a predictor of an applicant’s attractiveness as a potential IS employee. Traditionally, human capital predictors (such as amount of work experience or knowledge) have been used to predict career success (Ng et al., 2005). Specifically, the type of relevant work experience a person possesses contributes to an employee’s occupational expertise (van der Heijde and van der Heijden, 2005), and therefore, his/her attractiveness as a potential employee. Occupational expertise has been linked in the literature to perceptions of employee

competency: for example, van der Heijde and van der Heijden (2005) view occupational expertise as an important variable for guaranteeing positive career outcomes and an attractive salary. Accordingly, it is not surprising that in a study of recruiters' hiring recommendations, Tsai et al. (2011) found that an applicant's work experience increased hiring recommendations due to more favorable perceptions of person-job and person-organization fit.

In general, there appears to be a positive relationship between work experience and employee attractiveness, *ceteris paribus*. This relationship, however, may not hold in all conditions: for example, older unemployed persons may not have the same opportunities as younger ones, despite their significant level of work experience (Kadefors, 2010). Finally, it is worthy to note that in some contexts recruiters might be less concerned about prior work experience for entry-level positions, especially if new employees undergo intensive initiation training, such as attending a skills boot camp.

2.2 Academic Performance

Many organizations use education as an indicator of a person's skill levels or productivity (Benson, Finegold and Mohrman, 2004). In a study to validate such intuition, Howard (1986) confirmed that high academic performance is a valid predictor of managerial job performance. While Ng and Feldman's (2009) warn there has been little research directly examining the relationship between educational level and job performance, we suspect that many recruiters are likely to rely on an applicant's level of academic performance as a measure of that person's skill level or potential productivity. It is also worth noting that Wade and Kinicki (1997) found that managers gave work experience considerably more weight than academic qualifications in interview decisions.

2.3 Institution Reputation

The next factor included in our research model is the reputation of the institution (institution reputation) the graduate had attended. We propose that graduates from a high-reputation institution would be more attractive to recruiters compared with graduates from an institution with a less favorable reputation. An institution's reputation has a direct correlation with how well it is regarded within the wider community. A university's reputation is likely to be associated with the prestige associated with attending that institution, how well it is known within the wider community, and typically, the length of time it has been offering degree programs (i.e., older and more-established Universities tend to have had more opportunity to become well known and establish track records in both research and education).

It is common wisdom that gaining entry into a prestigious university is attractive. In this respect, Ono (2008) asserts that a positive correlation between university selectivity and the labor market has been observed in many societies. For example, Ono (2008) describes the prestige ranking of universities within Japan as bordering on a national obsession. However, the empirical question whether graduating from a prestigious institution actually increases one's probability of earning a higher income was recently

investigated by Sampson-Akpuru (2008), who surprisingly concluded that an Ivy League education is not associated with higher total compensation (at least, as evidenced by CEO remuneration). Such observations reflect frequent discussion within the general media as to whether Ivy League diplomas are actually worth the high cost associated with being educated at these institutions (see, e.g., Koba, 2011).

Moreover, research into choices in higher education has highlighted that such choices are influenced by social factors, such as conforming to expectations associated with membership of a particular class (Ball et al., 2002). While attending a more prestigious institution may, or may not, offer a student better educational outcomes, there may be benefits attending an institution with regards to confirming membership of a particular social class or community, which may lead to better networking opportunities within that community. While these types of social conventions may be observed between members of a particular social class, it is less clear whether such conventions will be considered important by recruiters, who may not see themselves as a member of these social classes. In this respect, it is therefore plausible that recruiters who themselves have not graduated from prestigious institutions, and therefore do not share a similar background with an applicant graduating from a prestigious institution, may be less mindful of the prestige associated with a graduate's institution and associated social conventions.

2.4 Education Mode

As detailed above, there has been little research in whether education mode (i.e., whether completing studies online, or via traditional mode through physical attendance at a university campus) affects perception of job applicants (with Kohlmeyer, Seese and Sincich (2011), and Metrejean and Noland (2011) being the noted exceptions). Accordingly, this study attempts to gauge current attitudes towards graduates with various education mode backgrounds within the context of IS employment. In addition, this study will shed light on whether recruiters consider education mode as important as other variables included in this study we have hypothesized to influence recruiters' assessments of applicant attractiveness.

2.5 Applicant Attractiveness

The dependent variable in our research model is the attractiveness of an applicant for employment. Given the context in which this study was conducted, we specifically refer to the attractiveness of an applicant for an IS entry position. As summarized by Wade and Kinicki (1997), the purpose of the interview is to select those individuals most likely to perform well on the job. In this respect, we equate applicant attractiveness as a proxy for predicted job performance.

The model for this study, shown in Figure 1 depicts a proposed model of the attractiveness of an IS job applicant (the dependent variable). Accordingly, the factors as defined within Table 1 were hypothesized to influence a recruiter's assessment of the attractiveness of IS job applicants.

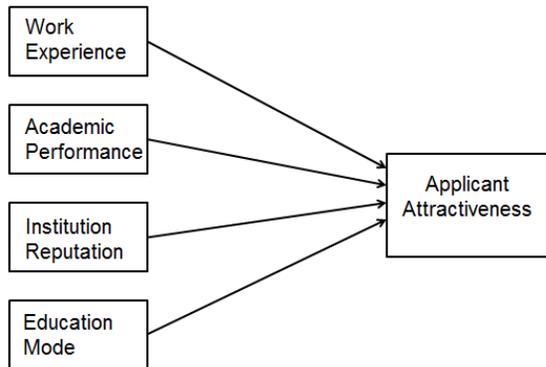


Figure 1. Factors Influencing an Applicant’s Attractiveness as a Potential IS Employee

Factor	Definition	Manipulation
Work Experience	Quality of a job applicant’s relevant work experience	low / high
Academic Performance	Academic performance during degree studies	low / high
Institution Reputation	Reputation of the degree granting institution from which the job applicant had obtained their degree	low / high
Education Mode	The degree of online studies the job applicant had undertaken in completing their degree requirements	traditional / online
Applicant Attractiveness	The degree of attractiveness of the applicant	dependent variable

Table 1. Definition of Factors Included In the Model

3. METHODOLOGY AND PROCEDURE

This study adopted a vignette experiment methodology. Vignettes have been featured in prior studies investigating employability judgments (see, e.g., Nguyen, 2006). “Vignettes are short descriptions of a person or a social situation which contain precise references to what are thought to be the most important factors in the decision-making or judgment-making processes of respondents” (Alexander and Becker, 1978, p.94). This study adopted a vignette experiment methodology, rather than using traditional survey items and other correlational designs, due to the need to present recruiters with enough information to

make an ecologically valid assessment of each applicant. For a research study to possess ecological validity, the methods, materials and setting of the study must approximate the real-life situation under investigation (Brewer, 2000). A vignette experiment methodology also follows a factorial design, thereby reinforcing internal validity (i.e., establishing cause-and-effect relationships).

The vignette profiles were designed to incorporate much of the information commonly gleaned by recruiters from reading a typical job applicant’s résumé. Typically, cues considered as salient to recruiters within résumés include: a targeted career objective; relevant education and training; relevant work experience; interests, activities and special skills; references; and format, visual appeal and spelling (Fritzsche and Brannick, 2002). However, to increase experimental control, information such as career goals, personal interests, extracurricular activities, special skills, references, and information on an applicant’s appearance was omitted from the profiles, as such information was esoteric and peripheral to the main focus of this study. Other studies have excluded these types of résumé materials for similar reasons (see, e.g. Nguyen, 2006).

Given that the number of factors manipulated within this study was four, the total number of factor combinations (versions of vignettes) within a fully crossed experimental vignette design would be 16 (2x2x2x2). However, to accommodate constraints as to the large numbers of IS recruiters that would be needed for a fully-crossed experimental design, we restricted the vignette treatment conditions considered in this study to the combination of factors detailed in Table 2.

Treatment condition	Between-subject Experimental Factors		
	Academic performance	Institution reputation	Work experience
1	Low	Low	Low
2	Low	High	Low
3	High	Low	High
4	High	High	High

Table 2. Between-Subject Vignette Treatments Featured In the Study

Each recruiter participating in the study evaluated two vignettes. In vignette research it is common for participants to be asked to respond to multiple vignettes (i.e., vignette sets) (Atzmüller and Steiner, 2010). Each vignette represents a distinct treatment condition (see Table 2). Although, in general, treatment conditions were randomly allocated to recruiters, we ensured that ‘education mode’ was different across the two vignettes – i.e., one vignette characterized the applicant as having completed all his studies online (Education Mode: online condition), while the other vignette characterized the applicant as having completed all his studies in a traditional education setting (Education Mode: traditional condition). The order of education mode was also randomized (i.e., half of the recruiters saw an online education mode vignette first, while the other half saw a traditional education mode vignette first).

The pool of recruiters invited to participate in this study constituted registered alumni of the college department in

which the researchers were on faculty. Members of this pool were sent an email inviting them to participate in this study. Any participant in the pool who indicated they had no experience in recruiting IS professionals was automatically excluded from further consideration. After taking into consideration this constraint, the total number of participants within the final recruiter pool (recruiters who took part in the study and fully completed the survey) was 82. To accept the invitation to participate in the study, recruiters could ‘click through’ to a website where they were presented with an ‘introduction’ webpage. This webpage instructed the recruiters to assume their company had advertised a position for a Junior Business Systems Analyst, and this employee would work with IT specialists and business end-users to develop specifications for new information systems. The recruiters were instructed to consider each applicant’s profile independently. After reading the introduction webpage, the recruiters clicked through to the webpage containing the first vignette (first applicant’s profile) and the associated survey questions. After answering each question for the first vignette, recruiters then clicked through to the second vignette (second applicant’s profile) webpage, which had an identical format and survey question bank as the first vignette webpage. After answering the questions in the second survey question bank, recruiters clicked through to the final webpage. On this webpage, the recruiters ranked the experimental factors from least importance to most importance in terms of influencing their perception of applicant attractiveness. At this time, the recruiters were also asked to estimate the number of times they had been involved in recruitment decisions for IS professionals, as well as for other professions.

After reading a vignette, the recruiter responded to two questions: [applicant’s name] should be offered a first-round interview for the open position (measure of applicant attractiveness); and, [applicant’s name] is qualified for the open position (redundant question version). To confirm experimental manipulations of the factors of academic performance and work experience were successful, the recruiters were asked whether the applicant had received a quality education, and possessed adequate work experience. A final question asked the recruiters whether the amount and type of information presented in the vignette was sufficient for the task we required them to complete. All responses to questions were recorded on a 5-point Likert scale: Strongly Disagree (score of 1)..Neutral Agreement (score of 3)..Strongly Agree (score of 5).

As stipulated above, recruiters read and responded to two vignettes. An example of a vignette instance used in this study is shown in Figure 2. A complete list of vignette components is provided in Appendix 1.

John recently earned a degree with a major in Business Information Systems from an institution that has been established for about ten years. While student enrollment is slowly growing, this institution has not yet established a reputation within the highly competitive higher education market, and therefore is not well known among recruiters.

John was on campus almost every week-day during semester to attend class or to complete assignments, and regularly

interacted with his instructors and fellow classmates in person. During his studies, John did not enroll in any online courses, preferring traditional classes where attendance was mandatory. All of John’s course materials were well designed and organized.

John always took a full-time workload, and completed his studies in the recommended time period. John was an excellent student, finishing within the top 10% of his graduating class.

John began his college studies two years after completing high school. During those two years, John worked full-time for a small software development company, where he was involved in customer training. John continued to work at this company part-time while completing his studies, and was recently promoted to a supervisory position.

Figure 2. Full Vignette Example

4. RESULTS AND DISCUSSION

An ANOVA confirmed applicants who had positive states across the three factors were rated more attractive than applicants who had negative states across the three factors ($n=164$; $p<0.001$) (see Figure 3). An analysis of the redundant measure of applicant attractiveness produced similar results.

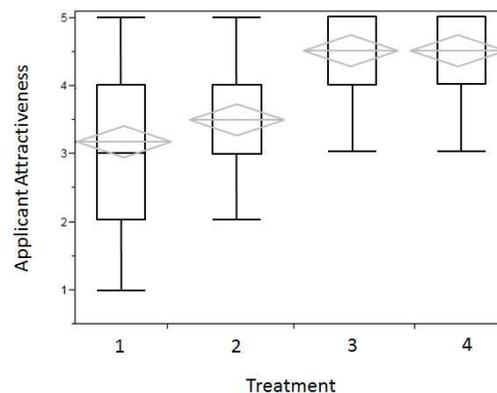


Figure 3. Box Plot of Applicant Attractiveness Responses Across Between-Subject Treatment Conditions (See Table 2 for Treatment Condition Definitions)

It should be noted that, overall, recruiters appeared reluctant to provide strongly negative assessments on any of the treatment conditions, with the mean response for treatment condition 1 – the least attractive condition – being close to neutral.

An ANOVA failed to confirm that the factor institution reputation affected perception of applicant attractiveness, with no significant difference between treatment condition 3 (in which institution reputation was low) and treatment condition 4 (in which institution reputation was high).

Another interesting observation is the clear differential in responses of applicant attractiveness between pooled treatment conditions 1 & 2 (pool 1) and conditions 3 & 4 (pool 2) with the factors academic performance and work experience being low in pool 1, and high in pool 2. The other

factor that has a different state across the pools is institution reputation, but as noted above, this factor did not appear to correlate to applicant attractiveness responses. An ANOVA between the pools confirmed the pools are significantly different in terms of applicant attractiveness scores ($n=164$; $p<0.001$). Overall, these results support the view that recruiters found academic performance and work experience to be salient factors in judgments of applicant attractiveness, while institution reputation appeared to be less salient.

To add weight to our preliminary results of the saliency of the factors academic performance and work experience in the judgments of applicant attractiveness, we compared these results with the rankings of the experimental factors provided by the recruiters. A mosaic plot of ranks is shown in Figure 4. The ranking distributions were confirmed to be significantly different though a chi square (X^2) test (39.60 ; $p<0.001$).

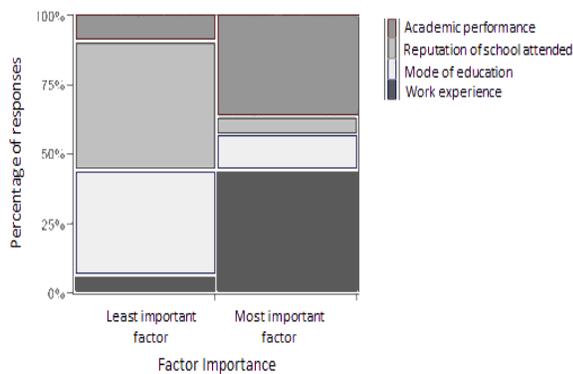


Figure 4. Mosaic Plot of Factor Ranks of Least and Most Important Factors in Applicant Attractiveness

The results reported in Figure 4 support the conclusion achieved from the experimental manipulations reported above. Within the ‘least-importance’ distribution, the factors of academic performance and work experience are the least dominant factors, while in the ‘most-importance’ distribution they were the most dominant factors. The mosaic plot of responses in Figure 4 therefore adds support to the findings from the ANOVA that academic performance and work experience are salient factors in recruiter’s judgments of applicant attractiveness.

Another important question in this study is whether recruiters’ judgments of applicant attractiveness correlate with an applicant’s education mode: having completed one’s education online or having completed one’s education in a traditional way. As stated earlier, each recruiter responded to two vignettes, with each vignette having a different education mode state (please refer to the Appendix for the operationalization of education mode).

An ANOVA failed to confirm a significant difference in applicant attractiveness responses across the education mode conditions ($n=164$, $p>0.165$). Box plots for the responses are shown in Figure 5. Clearly, there is little evidence to suggest that whether an applicant had completed their studies in either a traditional or online education mode affected judgments of applicant attractiveness

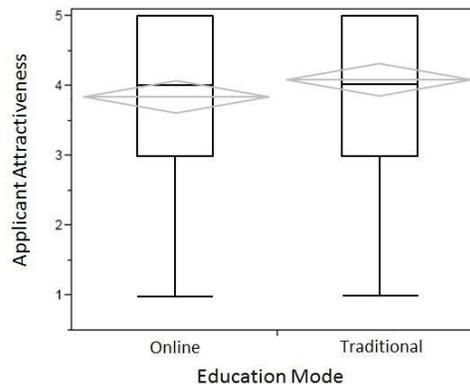


Figure 5. Box Plot of Applicant Attractiveness Responses Across Education Mode Conditions

5. CONCLUSIONS AND IMPLICATIONS

Despite the continuing debate as to the effectiveness of various approaches to teaching and learning, online education appears to be the future of higher education as more online courses and degrees are being offered around the globe every semester. This trend suggests the acceptance gap between traditional education and online education is narrowing, and the positive perception of online education will continue to evolve over time as more members of society embrace it. Additionally, over time, empirical data on a greater number of attributes, such as career advancement, salary, title, and rank will be able to be collected, thereby providing a greater number of dimensions on which to compare online-educated graduates with their traditional-educated counterparts. However, it is important to know how online educated graduates are regarded in the present job market and how recruiters perceive online-educated graduates.

Therefore, the motivation of this study was an interest to gauge contemporary attitudes towards completing degree studies via different educational modes. Specifically, we were interested to investigate whether completing a degree in a ‘traditional’ way provides an advantage to graduates in as being more attractive to potential recruiters. Our investigation, however, does not support the view that completing studies in a non-traditional way (i.e., through online education) is a disadvantage to job seekers within the IS field. While this finding may appear counter-intuitive, given existing challenges to online education quality noted earlier, other studies have presented similar findings. For example, Metrejean and Noland (2011) recently reported results of a survey of CPA (accounting) firm recruiters in which surveyed recruiters did not perceive a difference in a candidate who receives an online MACC (Masters of Accounting degree) and a candidate who receives a MACC from a traditional classroom-based accounting program.

In contrast, our results suggest that other factors – namely, relevant work experience and academic performance – are more salient to recruiters in forming their judgments of applicant attractiveness. In addition, this study did not find evidence that the other factor manipulated in our study – namely, the degree granting institution’s reputation – was

salient to recruiters in forming their judgments of applicant attractiveness.

The full implications of our findings will only be known when the debate as to the quality of online instruction versus the quality of traditional modes of course delivery has been resolved. For example, if consensus arises that traditional modes of course delivery are superior in certain contexts, it would be understandable that recruiters may sometimes have a preference for graduates with a traditional education. As this view lies in contrast to our finding that education mode is not necessarily a salient factor in judgments of applicant attractiveness, it may underlie the need for further research on this issue.

6. LIMITATIONS AND FUTURE WORK

This research like any other research has some limitations. First, this study gathers information about recruiters' present attitudes, and such attitudes may change over time. Second, since the participants of this study were IS recruiters, care should be exercised extrapolating any findings to other fields. Third, the recruiters who participated in this study were from a group of alumni of a single university in the southeastern United States. Therefore, attitudes recorded in this study were possibly impacted by the specific culture, prestige, and curriculum of this region. Further, this University has recently started to offer IS courses online and offers no online IS degree as of yet. Fourth, the dependent variable in this study – applicant attractiveness – should be regarded as only a proxy measure of 'true' applicant attractiveness, which may be impacted by information not considered in this study, such as impressions of applicants gained from in-person interviews. In addition, we did not attempt to incorporate all factors that have been previously identified as being salient to recruiters in their judgments of applicant attractiveness, such as having a targeted career objective (Fritzsche and Brannick, 2002), a graduate's balance between business and technical skills (Pratt, Hauser and Ross, 2010), and an applicant's personality and interpersonal skills (Wade and Kinicki, 1997). Fifth, while vignettes arguably provide a richer, more controlled and realistic research setting than survey questionnaires, they still fall short of complete reality, and may be viewed by respondents as too abstract (Alexander and Becker, 1978). Sixth, the vignettes within this study clearly identified each applicant's mode of education. Within the literature, however, we found no evidence of the practice of job applicants routinely volunteering details of the mode of their education to employers, either within their résumés or during discussions with potential employers (although, we assume, if specifically asked, job applicants would be willing to provide appropriate details in a truthful manner). Nor did we find evidence of the practice that degree-granting institutions make a distinction in published transcripts between courses or degrees that were completed online compared with traditional degrees. Accordingly, if a recruiter did not consider education mode to be an important factor, they may not request this information. On the other hand, it is reasonable to suggest that a recruiter who is more sensitive to education mode would be more likely to request this information. As a résumé is unlikely to contain such

information, the recruiter may receive this information via a different channel, such as through a special request or a discussion point during an interview. In this regard, it is important to recognize that the applicant profiles used in this study, while containing some information traditionally associated with a résumé, such as work experience, are not intended to be true proxies of résumés. Finally, this study suffered from a constraint on the number of recruiters who participated in the study. In this respect, our ability to analyze interaction effects between experimental factors was impacted. However, understanding interaction effects between experimental factors was not a prime objective of this study, and we strengthened our analysis by cross-referencing vignette responses to the factor rankings that were also provided by the recruiters who participated in this study.

It is also important to note that the IS recruiters who participated in our study all possessed IS-related qualifications. As the IS field stresses new and innovative uses of information technology, our participants may have been more comfortable with the notion of enrolling in courses in which information technology plays a pivotal role. Likewise, our participants may have been confident that IS students enrolled in online programs would be capable online learners, given their fluency in the use of information technology. Accordingly, future work should extend this study to investigate attitudes towards online education held by recruiters involved in recruiting employees within fields other than Information Systems, in which attitudes towards information technology-enabled modes of education may differ.

Just as attitudes may vary in different fields, they may also vary over time and cultures. Therefore, a replication of this study is needed to include other cultures and fields. Moreover, a re-run would be interesting at a future point in time to gauge whether attitudes towards the factors included within this study have changed over time (i.e., a longitudinal study). Finally, a more in-depth study could investigate whether the background/experience of recruiters affects attitudes towards the factors included within this study. For example, if a positive experience with online education has led a recruiter to view more positively job applicants with online studies.

7. ACKNOWLEDGEMENTS

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8. REFERENCES

- Allen, I. and Seaman, J. (2011), "Going the Distance: Online Education in the United States, 2011." The Sloan Consortium.
- Alexander, C.S. and Becker, H. (1978), "The Use of Vignettes in Survey Research." *The Public Opinion Quarterly*, Vol. 42, No. 1, pp. 93-104.
- Atzmüller, C. and Steiner, P. (2010), "Experimental Vignette Studies in Survey Research." *European Journal of Research Methods for the Behavioral and Social Sciences*, Vol. 6, No. 3, pp. 128-138.

- Ball, S., Davies, J., David, M. and Reay, D. (2002), "Classification and Judgement: Social Class and the Cognitive Structures of Choice of Higher Education." British Journal of Sociology of Education, Vol. 23, No. 1, pp. 51-72.
- Benson, G., Finegold, D., Mohrman, S. (2004), "You Paid for the Skills, Now Keep Them: Tuition Reimbursement and Voluntary Turnover." Academy of Management Journal, Vol. 47, No. 3, pp. 315-331.
- Bernard, R.M., Abrami, P, Lou, Y. and Borokhovski, E. (2004), "How Does Distance Education Compare With Classroom Instruction? A Meta-Analysis of the Empirical Literature." Review of Educational Research, Vol. 74, No. 3, pp. 379-439.
- Brewer, M. (2000), "Research Design and Issues of Validity." In Handbook of Research Methods (Reis H and Judd C, Eds.) In Social and Personality Psychology. Cambridge: Cambridge University Press.
- Fritzsche, A. and Brannick, M. (2002), "The Importance of Representative Design in Judgment Tasks: The Case of Resume Screening." Journal of Occupational and Organizational Psychology, Vol. 75, pp. 163-169.
- Graves, L. and Karren, R. (1992), "Interviewer Decision Processes and Effectiveness: An Experimental Policy Capturing Investigation." Personnel Psychology, Vol. 45, No. 2, pp. 313-340.
- Howard, A. (1986), "College Experiences and Managerial Performance." Journal of Applied Psychology, Vol. 71, No. 3, pp. 530-552.
- Huang, W., Green, J. and Day, J. (2008), "Outsourcing and the Decrease of IS Program Enrollment." Communications of the ACM, Vol. 51, No. 6, pp. 101-104.
- Kadefors, R. (2010), "Employability of Older People: A Scientific Review, Conclusions and Recommendations." University of Gothenburg Working Paper.
- Kohlmeyer, J. M., Seese, L. P., Sincich, T. (2011), "Online Versus Traditional Accounting Degrees: Perceptions of Public Accounting Professionals," in Anthony H. Catanach, Dorothy Feldmann (ed.) Advances in Accounting Education: Teaching and Curriculum Innovations (Advances in Accounting Education, Vol. 12), Emerald Group Publishing Limited, pp.139-165.
- Kmec, A. (2006), "White Hiring Agents' Organizational Practices and Out-Group Hiring." Social Science Research, Vol. 35, No. 3, pp. 668-701.
- Koba, M. (2011), "Are Ivy League Diplomas Still Worth the Price of Admission?" Education and You: A Special Report." Retrieved 3/22/2011 from http://www.cnbc.com/id/41603641/Ivy_League_Diplomas_Still_Worth_Price_of_Admission
- Kristof-Brown, A. (2000), "Perceived Applicant Fit: Distinguishing Between Recruiters' Perceptions of Person-Job And Person-Organization Fit." Personnel Psychology, Vol. 53, No. 3, pp. 643-671.
- Kruck, S. E. and Reif, Harry L. (2004), "Towards an Understanding Of Graduate Student Information Systems Related Disciplines And Online MIS Degree Programs." Journal of Informatics Education & Research, Vol. 6, No. 1, pp. 55-61.
- Lyness, S. and Heilman, M. (2006), "When Fit is Fundamental: Performance Evaluations and Promotions of Upper-Level Female and Male Managers." Journal of Applied Psychology, Vol. 91, No. 4, pp. 777-785.
- Marketdata Enterprises (2011), "Online Education: An Industry and Competitor Analysis." Available at <http://www.marketdataenterprises.com/>
- Metrejean, E. and Noland, T. (2011), "An Analysis of CPA Firm Recruiters' Perceptions of Online Masters of Accounting Degrees," Journal of Education for Business, Vol. 86, No. 1, pp. 25-30.
- Moy, J. W. (2006), "Are Employers Assessing the Right Traits In Hiring? Evidence from Hong Kong Companies." International Journal of Human Resource Management, Vol. 17, No. 4, pp. 734-754.
- Ng, T., Eby, L., Sorensen, K., and Feldman, D. (2005), "Predictors of Objective And Subjective Career Success: A Meta-Analysis." Personnel Psychology, Vol. 58, No. 2, pp. 367-408.
- Ng, T., and Feldman, D.C. (2009), "How Broadly Does Education Contribute to Job Performance?" Personnel Psychology, Vol. 62, No. 1, pp. 89-134.
- Nguyen, N. (2006), "Recruiters' Use of Friendship In Résumé Assessment: When Qualification Does Not Always Make The Cut." Applied HRM Research, Vol. 11, No. 1, pp. 1-14.
- Ono, H. (2008), "Training the Nation's Elites: National-Private Sector Differences in Japanese University Education." Research in Social Stratification and Mobility, Vol. 26, No. 4, pp. 341-356.
- Pratt, J. A., Hauser, K., and Ross, S.C. (2010), "IS Staffing During a Recession: Comparing Student and IS Recruiter Perceptions." Journal of Information Systems Education, Vol. 21, No. 1, Spring 2010, pp. 69-84.
- Şahin, S. (2006), "Overcoming the "No Significant Difference" Phenomenon in Distance Education by Internet." Retrieved 10/16/2010 from <http://www.aof.edu.tr/ioldl2006/>
- Sampson-Akpuru, M. (2008), "Does an Ivy League Education Amount To Higher CEO Pay?" Lethbridge Undergraduate Research Journal, Vol. 3, No. 1.
- Tilly, C. (1998), Durable Inequality. University of California Press, Berkeley, CA.
- Tsai, W.C., Chi, N.W., Huang, T.C., and Hsu, A.J. (2011), "The Effects of Applicant Resume Contents on Recruiters' Hiring Recommendations: The Mediating Roles of Recruiter Fit Perceptions." Applied Psychology-An International Review - Psychologie Appliquee-Revue Internationale, Vol. 60, No. 2, pp. 231-254.
- Tews, M. J., Stafford, K., and Zhu, J. (2009), "Beauty Revisited: The Impact of Attractiveness, Ability, and Personality in the Assessment of Employment Suitability." International Journal of Selection and Assessment, Vol. 17, No. 1, pp. 92-100.
- van der Heijde C M, and van der Heijden, B J M. (2005), "The Development and Psychometric Evaluation of a Multi-Dimensional Measurement Instrument of Employability – and the Impact of Aging." International Congress Series, Vol. 1280, pp. 142-147.
- Wade, K.J. and Kinicki, A. J. (1997), "Subjective Applicant Qualifications and Interpersonal Attraction as Mediators

within a Process Model of Interview Selection Decisions."
Journal of Vocational Behavior, Vol. 50, No. 1, pp. 23-40.

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APPENDIX 1

Complete List of Vignette Components

Condition	Vignette wording for work experience treatment
Low	John began his college studies two years after completing high school. During those two years, he worked four days per week as a waiter in a restaurant. However, he did not work while completing his studies.
High	John began his college studies two years after completing high school. During those two years, John worked full-time for a small software development company, where he was involved in customer training. John continued to work at this company part-time while completing his studies, and was recently promoted to a supervisory position.
Condition	Vignette wording for academic performance treatment
Low	John always took a full-time workload, and completed his studies in the recommended time period. John was an average student, only finishing within the top 60% of his graduating class.
High	John always took a full-time workload, and completed his studies in the recommended time period. John was an excellent student, finishing within the top 10% of his graduating class.
Condition	Vignette wording for granting institution reputation treatment
Low	John recently earned a degree with a major in Business Information Systems from an institution that has been established for about ten years. While student enrollment is slowly growing, this institution has not yet established a reputation within the highly competitive higher education market, and therefore is not well known among recruiters.
High	John recently earned a degree with a major in Business Information Systems from a prestigious institution that has been granting degrees for many years. This institution has a good reputation, and is well known among recruiters.
Condition	Vignette wording for education mode treatment
Traditional	John was on campus almost every week-day during semester to attend class or to complete assignments, and regularly interacted with his instructors and fellow classmates in person. During his studies, John did not enroll in any online courses, preferring traditional classes where attendance was mandatory. All of John's course materials were well designed and organized.
Online	John completed all his studies online, and was not required to attend any class in person. He was only required to visit campus to take some of his mid-term and final exams at the examination center, and to seek academic advisement. Consequently, John relied upon the Internet and other communication technologies to communicate with his instructors and fellow students. All of John's course materials were well designed and organized.



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