

JOBS ONLINE

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1. Introduction

Each wave of improvement in infrastructure technologies has reshaped markets for goods, services and labor. This was true with the spread of rail travel, telephones and computers. Now this seems to be happening with the growth of the Internet. Growing online sales figures are evidence that the Internet is reshaping markets for goods and services such as airline travel. Similarly, the growth of general online jobsites (also called e-recruiting services or job boards) suggests that a substantial transformation of labor markets is underway as well.

In his 2001 *Journal of Economic Perspectives* article, David Autor stated:

“The reasons that job boards have proliferated are clear. They offer more information, are easier to search, and are potentially more up to date than their textual counterpart, newspaper help wanted ads. In addition, job boards allow individuals to advertise their skills to employers as well as the reverse.”

The online job market has grown to mammoth proportions since Autor wrote those words. Already by late 2002, Richard Freeman reported on how nearly all large firms had embraced the Web way for their hiring:

“Each week millions of workers around the world search job boards or corporate sites for vacancies, and many apply for jobs on-line as well. In addition, millions of workers post their resumes or CVs at recruitment web sites in the hope of attracting job offers. For their part, nearly all large firms advertise jobs on their web sites and/or list jobs with internet recruitment firms. As a result of the shift of search and recruiting to the Web, Internet recruitment firms have been one of the successes of the dot.com world.... In the US, two of the dot.coms with sufficient resources to buy advertisements for the 2001 Super Bowl were Internet recruitment giants Hotjobs.com and Monster.com.”

On the employer side, electronic communications can also dramatically reduce employer costs of receiving, processing and replying to applications from jobseekers.

Further benefits are possible when e-recruiting involves the use of an online form connected to a database. This can enable electronic screening of the applicants at the same time they are answering the questions in the online application form. For example, an applicant can be asked if they have a vehicle to use on the job. If that is a job requirement, those who respond “no” can be automatically sent a rejection notice by e-mail.

Also, from the perspective of employers needing to hire workers for jobs with complex qualifications, assessing the skills of applicants who pass an initial screening has traditionally been a labor intensive part of the recruiting process. The potential cost savings from partially automating at least the initial stages of this process are huge, especially if the number of applicants is large.¹ Automating aspects of this phase of recruiting will enable employers to take fuller advantage of e-recruiting capabilities to search more widely for good candidates and to consider larger numbers at the initial stages of the selection process. When employers consider more applicants, they may find better matches for their job openings.²

What we can see for certain is that the Internet enables jobseekers and employers to advertise and shop for complex bundles of skills and experience without anyone having to travel or even pick up the phone until both sides feel they have found a potential match worth exploring. This is prima fascia evidence that the costs of some aspects of job search and recruiting have fallen dramatically.

The declared business of the e-recruiting industry is the deployment of human capital, from office clerk to CEO. If this is what the industry is doing, performance in this industry has important regional, national and international productivity and economic growth implications. Hiring decisions affect company operations and management for years to come, and job matches surely affect workers as well. And yet, the one aspect of the e-recruiting industry that has shown little growth is economic research on it.

2. A Brief Introduction to Internet Jobsites

Understanding the online job market well enough to plan fruitful research on this topic requires, for a start, an understanding of some basics about e-recruiting and the providers of these services.³ These services create online meeting places for jobseekers and for the employers and third party recruiters trying to fill job openings. E-recruiting can be and currently is provided by three different types of organizations: governments, commercial businesses, and nonprofit nongovernment organizations (NGOs). By now, the e-recruiting industry is commercially

¹ As Ichniowski and Shaw (2003) note: “Careful screening and selection of workers is required to identify those who have both high level job- and task-related skills and also ‘team skills.’” Even before the e-era, large firms were experimenting with conducting some aspects of this process using computer software systems.

² Indeed, if the average fill time for all open positions in the economy were reduced, say, by even one hour, this would result in an economically significant increase in national income and in government personal income tax revenue. Few employers hire sufficient temporary staff to fully make up for regular staff vacancies.

³ E-recruiting is part of an e-services landscape. See Varian’s <http://www.sims.berkeley.edu/resources/infoecon/>.

dominated and highly concentrated. In the United States, the Big 3 commercial e-recruiting companies are Monster Global, CareerBuilder and Yahoo!HotJobs. However, Craig's List and JobCentral have proven that job sites run by non profit organizations can grow large too in this industry.

There have long been centralized clearing-houses for particular types of entry-level jobs.⁴ What is new with the modern e-recruiting services is the creation of centralized clearing houses for jobs of almost all sorts, and the fact that there are no matchmakers for many of the interactions in these clearing houses; rather, these are really "introductions" services rather than match makers. Employers post job advertisements on e-recruiting web sites. In the case of the jobsites run by commercial e-recruiting companies, prices typically range from roughly \$100-\$600 for a regular single job ad.⁵

Virtually all jobsites are free for jobseekers. However, to use the full services that jobsites provide, jobseekers need to store their qualifications and put the information into convenient formats for applying to job ads. The industry refers to the profile a jobseeker stores with their contact, education and work experience information as a "resume." These resumes are an important revenue source for commercial e-recruiting companies. These companies charge employers thousands of dollars for conducting searches over their resume data banks.

Monster has an established and large feeder system for young people attending institutions of higher education. The Monster family took in JOBTRAK in 2000, promptly renaming it MonsterTRAK. At the time it was acquired by Monster, JOBTRAK had contracts with more than 1,000 universities and colleges and more than a half million U.S. students and alumni were registered JOBTRAK users. Those who start using a particular job site while in their student years often stay with that jobsite subsequently. Switching costs are one reason for this site loyalty. Those who have used a particular jobsite enough to create an online resume there know it would take time to create that again on some other jobsite and that they will need it to apply for jobs using any of the commercial jobsites.

Commercial e-recruiting companies advertise heavily to individuals. For example, the large ad Monster had in the subway station at Harvard University and the Super Bowl ads Freeman (2002) mentions are clearly aimed at jobseekers or soon-to-be jobseekers. Jobsites advertise their services to jobseekers because they need jobseekers in order to attract employers and also as a source of online advertising earnings.

Since the objective of jobsite users is usually to find employment matches, both workers and employers can benefit from greater size. Hence, the online recruiting industry has natural monopoly elements.

E-recruiting companies can also collect information on what users look at; e.g., they can monitor what sorts of jobs, in what localities, and what sorts of information and product ad links jobseekers click on. This activity information can potentially be combined with information in

⁴ These institutions are described, for example, in Roth (2002), Roth and Ockenfels (2002) and Katok and Roth (2004).

⁵ Monster.com job posting price information is available to registered employers (<http://hiring.monster.com/products/products.aspx>). CareerBuilder job posting prices can be seen at <http://careerbuilder.com/jobposter/products/>. The prices for Hot.Jobs.com job postings depend on the location of the openings (see <http://member.hotjobs.com/postjobs> and <http://www.hotjobs.com/hiring>). The pricing policies of these companies are complex. For the sorts of details involved, see <http://www.jobcircle.com/competition/>.

the resumes of users. The information that individuals put into their resumes is likely to be more reliable than the responses they give in answering marketing surveys.

All of the commercial jobsites are run by companies with other business lines that could potentially make profitable use of the sorts of consumer information that can be collected in the course of the normal operation of a jobsite; that is, jobsites can make money on the information without “selling” it to third parties (which most promise not to do). From almost the beginning, commercial interests saw that e-recruiting activities might be cultivated as a way of creating new online advertising real estate for all sorts of goods and services. For example, Monster was started by a personnel recruiting agency that included high end head hunting services, and that also was (and is) an advertising network for goods and services. The Monster Global company also includes Monster moving, which consists of a vast network of services, from moving van rentals to real estate and financing, for people on the move. The commercial e-recruiting industry is *not* just about recruiting on the business side.

Opportunities to develop ongoing customer relationships that the e-business world calls “stickiness” are exploited. Stickiness is of commercial value because it is usually easier to make another sale to a prior customer than it is to convince someone new to buy. Marketing research shows that prior contact helps to establish trust and loyalty. One way businesses go about trying to stay in touch with prior customers is to offer useful free services. This is why many sorts of e-commerce web sites are interested in having high traffic e-recruiting services as part of their website offerings. In return, the jobsites gain more jobseeker traffic. Most jobsites also try to carry some information resources that employed workers would be interested in. So long as workers who have found jobs continue to use a jobsite, they will sometimes notice job ads. Also, many of them will maintain their resume information on the jobsite.⁶

3. Questions and Research Strategies

Researchers interested in learning about e-recruiting and the effects of this on labor markets could potentially query different sorts of sources. These sources include the job seekers themselves, managers of the job site companies, and employers using the recruiting services of the e-recruiting companies.

What jobseekers know about is what they themselves have tried in looking for work. For example, those who have been part of the workforce know how they found their current or most recent work. They know too what that work is and the remuneration. Those looking for work while still working know too why they have chosen to look for work. These things that jobseekers know about their job search and work situations can be related to their characteristics such as education and age.

Thus we can learn whether those having access to a computer at home, or using a computer more for other things, are more likely to search for work online. We can examine differences by sex and age in how jobseekers are using the Internet to look for work. And we can examine the proportions of jobseekers of different sorts who know about and have used types of online job search believed, on the basis of independent information, to be more effective such as

⁶ One reason workers are likely to continue to maintain an online resume

search on employer web sites. These are the sorts of information that the 2007 Freeman Job Search Survey seeks to elicit and that are the focus of the analysis in the empirical portions of this paper.

To actually apply online for jobs advertised on most job sites, job seekers must typically register. The registration information collected by many of the commercial job sites is quite extensive: far more than is needed for job site operations of direct value to the jobseekers. However, the job seeker information requested by most commercial jobsites does not include follow-up reports about whether the jobseekers were contacted about or hired for job openings they learned about or applied to on the online job site. So job sites have no direct way of knowing what proportions of their users are contacted about, interviewed, or hired for positions they learned about using the job sites. The job site providers also have strong commercial incentives to inflate their claims about the successes of their users. Finding out more about the *real* search outcomes of the bulk of their users may not be in the commercial interests of these services.

The personnel departments for large companies are in a position to know, or to discover by studying their own records and experimentation, which recruiting methods work best for different types of workers and job specifics. However, once company recruiters think they have discovered these answers, they will optimize their own operations. A study of what conclusions have been reached by different large company personnel departments would probably be fruitful. This is a nascent area of personnel economics that calls for insider econometrics methods.⁷ It is, of course, far easier to survey job seekers than to get large companies to divulge their recruiting know how. However, it is more difficult to come up with questions that jobseekers are in a position to reliably answer.

Government departments providing income support or other benefits to those out of work do, of course, care about the job search outcomes of the sorts of people they provide their services to. Many jobseekers not in keen demand would like good advice too about how to best to go about finding work. Also, labor economists are interested in job search outcomes.

We would like to know if the Internet makes jobseekers aware of jobs that are good matches that they would never have found through other search channels and whether the Internet helps those who are out of work find work sooner. Kuhn and Skuterud (2004) were interested in how the speed of job finding is affected for “observationally equivalent unemployed persons” depending on whether or not they used Internet job search. There are obvious reasons for interest in whether and how online job search changes the speed of job finding, the geographic scope of job search, jobseeker knowledge about the job market or job searcher reservation wages.

Kuhn and Skuterud (2004, p. 23) report in their recent *American Economic Review* article that: “Internet job searchers do not become reemployed more quickly than observationally equivalent unemployed persons who do not look for work online.” They conclude that e-

⁷ See Ichniowski and Shaw (2003, 2004). Also, e-recruiting sites provide an opportunity for monitoring and for research into the changing nature of job offers. The ads that can be accessed and viewed usually include information about, and can be electronically sorted by, whether the job openings are for casual hourly or continuing work. Salient research questions could be addressed by studying how the contractual arrangements for different sorts of job openings relate to the extent that e-recruiting, and especially e-recruiting with automated candidate assessment screening, is being used for those job types.

recruiting services may be less important than the companies supplying these services claim in their advertising.⁸ However, their study looks at “difficult to employ” jobseekers who are in fact not the candidates that are in scarce supply and hence that employers would be willing to pay e-recruiting services to help them locate.

It seems useful to us to think about the jobseekers in any one local labor market commuting area as falling into four main categories:

- (1) Those with local qualifications and local opportunities. These are the jobseekers who are mainly qualified for jobs that local employers can easily fill locally at the accustomed wage rates.
- (2) Those with local qualifications but uncertain local opportunities. These are the jobseekers who are mainly qualified for jobs that local employers can easily fill locally, and where there is excess local labor supply so that employers are looking to cut the wages for these jobs or there are many applicants for each job of this sort that opens up.
- (3) Those with other area, but not local, qualifications who also have uncertain opportunities in those other areas. These are jobseekers who are mostly qualified for jobs in scarce supply or nonexistent locally and who are in excess supply even in the localities where there are more jobs of the sort they are qualified for.
- (4) Those with other area, but not local qualifications who have good prospects elsewhere are the fourth type. These are jobseekers who are mainly qualified for jobs in scarce or non-existent locally but who are in scarce supply elsewhere and have good prospects of finding work in those other localities if they apply.

Our expectation is that the growth of online recruiting and job search will affect the prospects differently of the above four types of workers. We would expect the growth of online recruiting and job search to speed the hiring process, lower search costs and improve the job matches for group 1 jobseekers. Those qualified for as local retail clerks are perhaps an example of group 1.

In contrast, we would expect group 2 job seekers to end up with more competition for the jobs they are qualified for with the group of online recruiting and search. The search time for these jobseekers might actually rise, or they may have to settle for lower wages. Hospitality industry workers in seasonal resort areas might be an example of this sort of workers. Child care workers who work in private homes might be another example.

We would expect workers with bundles of attributes for which there is excess employer demand will find their wages being bid up, as they become accessible to employers far and wide through e-recruiting systems.

Online surveys will provide very incomplete information for types of jobs and jobseekers where hiring is still often carried out offline. Moreover, for the sorts of jobs and jobseekers where hiring is now commonly initiated online, it is still the case that very large sample sizes would be needed to get sufficient numbers of responses in specialty areas. for jobs and for the relevant types of job seekers. The 2007 Freeman Job Search Survey has not (yet at least) attracted sufficient numbers of respondents for those sorts of research. However, with the 1,602

⁸ See also Kuhn (2000, 2003), and Kuhn and Skuterud (2000).

usable responses to the survey that were available at the point when the analyses for this paper was begun, we do feel that there are interesting -- albeit more limited -- questions about online job search that can be explored.

4. The 2007 Freeman Job Search Survey and Survey Respondents

The data for our study was collected by what we will refer to as an enticement based sampling approach. Richard Freeman put online an English language job search survey. The survey questions are shown in appendix A. The survey has 28 questions, referred to in the text and tables of this paper as Q1-Q28. They fall into five main groups:

- I Demographic and education information
Q18-Q21, Q24-Q27
- II Work experience and current/recent employment status
Q2, Q7, Q8, Q22, Q23, Q28
- III General job search experience
Q1, Q9-Q11, Q13, Q17
- IV Computer access and Internet usage
Q3-A5
- V Internet job search usage
Q6, Q12, A14-Q16

The survey instrument was advertised world wide using Google AdWords and also the international AdBrite service. The enticement offered to encourage those who saw the ads to complete the survey was a promise that those who did would be entered in a draw for \$1,000 US.

Who fills out an online survey offered to the world the way that the 2007 Freeman Job Search Survey was? The answer to this question provides a glimpse of who is online. The data used in this study were collected over the period of February 7 to April 15, 2007.

A total of 1,602 useable survey forms were filled out by respondents 16 to 64 years of age. We begin in sections 4.1-4.5 by examining the demographic attributes of these 1,602 survey takers. In contrast to many papers where the demographic distributional information for the dataset is just background information for the empirical analysis results of substantive interest, here, we feel that some of our demographic distribution results are of considerable interest since they challenge prevalent views about the characteristics of job searchers and Internet users.

In section 4.6 we consider sample selection issues and also the implications of the demographic distribution information for job search research including our analysis of our present data set.

We note upfront that all results in this paper should be treated as tentative pending verification as additional data are collected for the 2007 jobs search survey.

4.1 Age, Sex and Country Characteristics

The distribution of the respondents, by sex and age, is shown in row 1 of [table 1](#). Notice that the age intervals given in this table differ in width: 4 years for 16-19, 5 years for 20-24, 10 years for 25-24 and 35-44, and 20 years for 45-64. These are the intervals that were used for asking respondents about their ages. They were chosen on the basis of prior beliefs about the demographic profiles of Internet users and of jobseekers in general.

Table 1. Number of Respondents by Sex, Age and Country or Country Group^a

Age groups:	Men					Women				
	16-19	20-24	25-34	35-44	45-64	16-19	20-24	25-34	35-44	45-64
Column numbers	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. All countries	47	259	344	136	81	66	200	282	114	74
2. Canada & U.S.	0	11	12	12	23	6	21	27	35	35
3. N. & S. America^a	1	16	20	13	25	8	29	35	36	38
4. U.K.	3	8	8	3	4	8	13	3	1	2
5. All E.U.^a	9	21	36	18	15	15	29	34	19	7
6. Australia & N.Z.^a	9	15	19	7	8	27	28	35	19	16
7. Nigeria	6	27	53	17	2	0	9	31	3	0
8. All Africa^a	11	84	117	50	9	2	37	62	8	2
9. India	3	34	34	11	9	0	13	15	2	1
10. Malaysia	2	7	9	3	2	5	10	22	4	1
11. Philippines	2	13	20	8	3	4	30	39	12	7
12. All Asia^a	17	122	152	47	24	14	77	113	32	11

^a This table is based on the responses of all those who answered Q18, Q20 and Q21. The numbers in rows 3, 5, 6, 8 and 12 sum to the all countries totals in row 1.

In each of the designated age groups except the youngest, somewhat more men than women took the survey. The distributions by age are quite similar, however, for both sexes.

The Freeman survey was advertised online, so it was more likely to be found by those frequenting Internet sites, and it was advertised as a survey about job search methods. We thought that job seekers are predominantly under 25 years of age and that Internet users also tend to be younger. Thus relatively substantial numbers of respondents in the 25-35, 35-44 and 45-64 year old age groups compared to the 16-19 and 20-24 year old ones is a surprise to us. We had expected a concentration in the 20-24 year old group.

The country group figures in bold (rows 3, 5, 6, 8 and 12 are a breakdown of the all countries totals in row 1. Number counts are also shown for the countries with the larger numbers of respondents such as Nigeria and India. Separate counts are also shown for Canada and the United States together, and for the United Kingdom.

Another finding is that the age pattern of the respondents is strikingly different for Canada and the United States compared with the other countries. For the two North American countries, the age groups with the most respondents are the 45-64 year old one for men, and the 35-44 and 45-64 year old categories for women. For the other countries and country groups, the age categories with the most observations are 20-24 and 25-34. If borne out in subsequent studies, this is an empirical regularity that invites theoretical explanation.

In the rest of this report, the results are shown by age group and sex but are pooled over all countries. There are too few observations (so far) to undertake meaningful country group specific analyses. However, the results in table 1 on the age distributions of the respondents by country groups suggest that, once the quantity of data is sufficiently large, it will be interesting to look at whether there are meaningful country or region specific response patterns.

4.2 Employment Status in Week Prior to Taking Survey

In the survey questionnaire, Q2 asks respondents to indicate if they “worked as an employee” or if they were “self employed” last week. The responses are summarized in [table 2](#). The sample sizes (shown in row 6) are somewhat larger than for row 1 of table 1 (for all countries). This is because table 2 does not rely on Q18, which is the information about the country where a respondent was living when they took the survey. That country question involved making a selection from a long drop down menu. Some number of respondents skipped most of the questions involving drop down menus.

One oft stated employer fear about considering job candidates who come to them via the Internet is that the majority searching there are out of work because they are poorly suited for working as employees. On the other hand, other employers and recruiters maintain that the Internet is especially effective for connecting with those who are currently *working* and might be enticed to consider new job possibilities. Table 2, row 4 suggests that for men 20 years of age and older, and for women 25 and older, those who have work are the majority of those looking at job related information on the Internet.

Table 2. Percent Employed of Each Sex and Age Group of Respondents^a

	Men					Women				
	16-19 (1)	20-24 (2)	25-34 (3)	35-44 (4)	45-64 (5)	16-19 (6)	20-24 (7)	25-34 (8)	35-44 (9)	45-64 (10)
1. Employee, and not self employed	29.6	39.5	57.8	63.4	47.6	23.6	41.3	57.9	45.8	52.0
2. Self employed, and not an employee	9.3	10.7	9.0	13.1	18.3	8.3	4.4	7.6	11.9	8.0
3. Employee and also self employed	7.4	8.0	5.5	6.2	1.2	2.8	1.5	4.8	3.4	1.3
4. An employee and/or self employed	46.3	58.2	72.2	82.8	67.1	34.7	47.1	70.3	61.0	61.3
5. Not an employee or self employed	53.7	41.8	27.7	17.2	32.9	65.3	52.9	29.7	39.0	38.7
6. Number of observations	54	261	346	145	82	72	206	290	118	75

^a This table is based on the responses of all those who answered Q20, Q21 and Q2.

Of those who were working in the week prior to taking the survey, we see from row 1 that the largest share, for each age group, worked just as employees. We also see from row 5 that large proportions were not working in the previous week, especially in the 16-19 and 20-24 year old age groups.

4.3 Computer Access and Internet Usage

The questionnaire asked about whether the respondent used a computer at home (Q3), whether they had ever made a purchase over the Internet (Q4), and whether they had ever looked at or used Internet job sites (Q6). The results are shown in [table 3](#).

From row 1, we see that considerably higher percentages of female than male respondents use a computer at home. Also, the prevalence of using a computer at home rises in the upper two age groups. We were interested to find out about the proportions of respondents with computer access at home because it has been suggested that Internet access at home might facilitate using the Internet for job search. However, the age patterns in row 2 for online shopping, and in row 3 for the use of Internet job sites, do not mirror the row 1 pattern.

Table 3. Percent of Sex-Age Groups with Given Computer and Internet Use Attributes^a

	Men					Women				
	16-19 (1)	20-24 (2)	25-34 (3)	35-44 (4)	45-64 (5)	16-19 (6)	20-24 (7)	25-34 (8)	35-44 (9)	45-64 (10)
1. Uses a computer at home ^b	61.1 (54)	57.7 (265)	57.3 (349)	69.2 (143)	87.9 (83)	82.9 (70)	73.1 (208)	74.5 (286)	87.0 (115)	92.1 (76)
2. Have ever made a purchase over Internet ^c	42.0 (50)	48.3 (271)	47.9 (353)	44.1 (145)	51.9 (79)	41.1 (73)	50.2 (213)	45.5 (288)	58.1 (117)	69.3 (75)
3. Have ever looked at or used Internet job sites ^d	73.1 (52)	82.5 (268)	87.6 (356)	86.3 (146)	91.5 (82)	82.2 (73)	85.0 (214)	93.8 (290)	86.4 (118)	93.2 (74)

^a In parentheses we give the total number of respondents who answered all questions used in computing the above percentage.

^b Checked "home" on Q3, with or without checking other boxes.

^c Checked "sometimes" or "often" on Q4

^d Selected "yes" on Q6.

For row 2, note that the percentages of the respondents in each age-sex group who report ever having made a purchase over the Internet range from 42.0 to 51.9 percent for men, and from 41.1 to 69.3 percent for women.⁹ From row 3, we see that for all of the age-sex groups the percentages who have looked at or used an Internet job site are considerably higher than the percentages who have ever made a purchase over the Internet. The percentages of respondents who report that they looked at or used a job site range from 73.1 to 91.5 for men and from 82.2 to 93.2 for women.¹⁰

This finding supports the notion that job sites can have high value for drawing traffic to portal web sites.

4.4 Use of Job Sites and General Search Engines

The above results suggest it may be important to learn more about the interrelationships between the use of online job sites and the use of general search engines such as Google. The survey asked respondents if they had ever looked at or used Internet job sites and whether and how much they had used general search engines. The results are reported in [table 4](#).

⁹ The purchase could have been made using a computer anywhere; not just a home computer.

¹⁰ These results suggest an obvious future online survey experiment. A survey of Internet shopping behavior could be advertised, offering the same financial inducement as for the 2007 Freeman job search survey. The online shopping survey could also contain questions about the use of online job sites. It would be interesting to find out if, for such a survey, the age-sex group specific percentages of those who had ever made a purchase through the Internet were still lower than the percents of those who had ever looked at or used an online job site.

Table 4. Percent of Sex-Age Groups with Given Job Site and General Search Engine (SE) Use Attributes^a

Sex	Men					Women				
Age group	16-19	20-24	25-34	35-44	45-64	16-19	20-24	25-34	35-44	45-64
Column number:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Uses job sites and uses SE often^b	50.0	45.9	50.1	59.3	63.4	66.2	65.5	69.4	60.2	71.2
2. Uses job sites and uses SE sometimes ^c	17.3	34.2	29.6	22.8	24.4	14.1	19.4	22.2	26.3	19.2
3. Does not use job sites but uses SE often ^d	13.5	8.6	5.0	4.8	2.4	8.4	8.2	2.1	4.2	4.1
4. Does not use job sites but uses SE sometimes ^e	9.6	7.8	5.6	7.6	4.9	4.2	4.4	3.1	6.8	2.7
5. Never use SE ^f	5.6	3.4	9.0	4.8	3.7	6.9	2.4	2.8	2.5	1.3
	(54)	(261)	(346)	(145)	(82)	(72)	(206)	(290)	(118)	(75)
6. Number in sex-age group who answered questions Q4 and Q6	52	257	341	145	82	71	206	288	118	73

^a In parentheses we give the total number of respondents who answered all questions used in computing the above percentage.

^b Selected “yes” on Q6 and “often” on Q4.

^c Selected “yes” on Q6 and “sometimes” on Q4

^d Selected “no” on Q6 and “often” on Q4.

^e Selected “no” on Q6 and “sometimes” on Q4.

^f Selected “never” on Q4. (Number of those who answered Q4 shown in parentheses.)

The use of job sites might be expected to go together with more frequent use of general Internet search engines (SE) such as Google. Table 4 shows this to be true for those who took the survey.¹¹

¹¹ We see too that the proportions who reported using general search engines often while never using job sites ranges from 2.7 to 9.6 whereas the proportions who claimed they never used search engines ranges from 2.4 to 9.0.

4.5 Motivation for Seeking Work

Respondents were asked to indicate their “main motivation: when they last looked for work. More specifically, they were asked to choose one from the answers on the left hand side of [table 5](#).

Table 5. Percent of Sex-Age Groups with Each Stated Main Motivation for Seeking Work^a

	Men					Women				
	16-19 (1)	20-24 (2)	25-34 (3)	35-44 (4)	45-64 (5)	16-19 (6)	20-24 (7)	25-34 (8)	35-44 (9)	45-64 (10)
1. Wanted to find a first job	41.2	13.9	22.6	23.2	11.5	45.8	39.2	20.7	13.5	7.5
2. Needed work due to losing or quitting work before	9.8	13.9	13.3	14.8	32.0	12.5	16.5	18.9	36.9	40.0
3. Was working, but wanted new work	9.8	31.9	38.0	43.0	39.7	13.3	25.7	44.4	32.4	27.5
4. Needed evidence of job search for an income support program	7.8	8.4	8.7	9.1	1.3	5.6	6.3	7.3	4.5	16.2
5. Just curious	11.8	17.5	11.9	7.7	10.3	15.3	8.2	7.3	10.8	7.5
6. Not applicable; never looked for work	19.6	14.5	5.5	2.1	5.1	5.6	3.9	1.1	1.8	1.2
Number of respondents	51	166	345	142	78	72	206	275	111	80

^a From Q10.

The expected concentration of first time job search for those 16-19 is clearly evident in table 5. For the other age groups, we see from row 3 that substantial percentages of the respondents report searching while employed: over 25 percent for those aged 20 and older, with these figures being generally higher than for those who were searching for work because of losing or quitting on the work they used to have.

Those who use job sites (i.e., those who answered “yes” to the query about whether they had ever looked at or used Internet job sites) were asked to check all of the things listed on the left of [table 6](#) that they had done on Internet job sites.

Table 6. Percent of Sex-Age Groups Who Used a Job Site To Do the Stated Things^a

	Men					Women				
	16-19 (1)	20-24 (2)	25-34 (3)	35-44 (4)	45-64 (5)	16-19 (6)	20-24 (7)	25-34 (8)	35-44 (9)	45-64 (10)
1. Check job advertisements	42.3	44.0	47.5	47.3	52.4	41.1	50.0	54.1	46.6	54.0
2. Learn about employers	32.7	34.0	38.5	38.4	43.9	31.5	35.5	40.7	35.6	44.6
3. Learn about industry sectors	32.7	25.0	30.1	33.6	28.0	20.5	23.4	26.9	22.9	24.3
4. Get career tips	30.8	28.4	32.0	34.9	31.7	28.8	28.5	32.8	25.4	36.5
5. Get salary or wage information	34.6	22.0	28.4	32.9	31.7	26.0	24.8	29.7	23.7	36.5
6. Create an online resume	26.9	24.2	32.3	37.7	31.7	21.9	29.4	32.4	30.5	35.1
7. Upload or send an online resume	25.0	26.9	32.3	38.4	34.1	35.6	29.0	35.9	35.6	41.9
8. Enable employers to find their resume	19.2	20.5	27.0	35.6	31.7	19.2	22.9	30.7	25.4	32.4
9. Access employment news	23.1	22.4	28.1	37.0	32.9	19.2	24.3	26.5	21.2	28.4
10. Access research or reports	19.2	18.7	23.3	28.1	30.5	15.1	16.8	21.7	17.8	25.7
11. Percent of respondents who on Q6, checked they used a job site, but did not select any of the above for <i>how</i> they used a job site	23.1	30.6	32.6	29.4	36.6	23.3	28.0	33.4	36.4	36.5
12. Number of respondents	52	268	356	146	82	73	214	290	118	74

^a From Q10.

In table 6, we do not find any obvious sex patterns in the uses made of Internet job sites. Not surprisingly, the thing that users do most on job sites is to check job ads. Many also use job sites to create and to send their resumes. There are also some interesting age patterns, however. With increasing age, both male and female users seem increasingly inclined to use job sites as a source of information. Those 25 and older are especially likely to use job sites to learn about employers and to access research or reports. On the other hand, there is no evident age pattern for getting salary or wage information or career tips.

4.6 Selection Issues and Implications

We have deferred discussing the selection attributes of our data until after presenting distribution information about the respondent attributes because we believe this distributional information is helpful for thinking about sample selection issues for this study. Word about the survey was spread by running Google ads in all the nations where Google serves English language ads to websites that have signed up with Google to publish ads. The ad wording used was:

Take the 2007 Job Search Survey

Get job search tips, share what works,
and maybe win \$1000 US!

Richard Freeman has carried out a number of previous online surveys. Those other surveys of his achieved good take up by offering survey respondents the chance of being registered in draws for i-pods. However, i-pods might not be an effective inducement in some countries or for older age groups. Hence, for the 2007 Job Search Survey, respondents were offered the chance to be entered in a June 30, 2007 draw for \$1000 US. The hope was that this prize would prove of interest to all age groups, and to people in all nations.

However, as of April 15 when the data used in this paper became available, it seems that the take-up in the higher income nations including the United States, Canada, the United Kingdom and Japan is quite low. This is despite high volumes of Google and AdBrite advertising for the Freeman survey that was targeted directly to those countries.

The lower response rate to the ads shown in higher income countries is believed to be mostly an indication that, for these countries, the financial inducement of a chance to win a \$1000 US is a less effective motivation than it is in countries such as Nigeria and India. It may also be that Internet users have come to associate offers of cash prizes with Internet scams.

5. Job Search Behavior

Having begun by considering the properties of our sample of respondents, we now ask what the survey reveals about job search. The prevalence of search by various methods is examined in section 5.1. Then in 5.2, we hone in on the issue of the prevalence of search using general Internet job sites like Monster versus the employment part of employer web sites. As Richard Freeman (2002) observed, already in 2002, nearly all large firms were advertising their job openings on their web sites or listing jobs with internet recruitment firms, and many were doing both.

5.1 Alternative Methods of Job Search

It is often said and written that personal contacts are of greatest importance for finding employment. The respondents to the 2007 Job Search Survey mostly agree that personal contact and referrals are important (row) and networking and word of mouth are selected as important too by large percentages of the respondents. However, newspapers are selected by even larger percentages in all age groups except 45-64. Moreover, Internet recruitment sites are selected by even higher percentages in all of the age groups. More than three fourths of the jobseekers in each age group indicated that Internet recruitment sites are useful for job search. In comparison, career and graduate employment offices were selected as important by 48 to 51 percent.

Table 7. Percentage of Respondents by Age and Sex Who Found Each Method Useful

	16-19	20-24	25-34	35-44	45-64	16-64
1. Career fairs/exhibitions	48.9	44.2	46.3	46.3	52.6	46.4
2. Career office/graduate recruitment	51.1	49.1	48.5	49.4	49.5	49.1
3. Internet recruitment sites	76.1	77.0	80.1	85.8	82.5	79.9
4. National/local newspapers and/or trade magazines	73.9	74.2	76.1	80.9	77.3	76.2
5. Networking or word of mouth	60.2	51.2	55.6	61.1	72.2	56.9
6. Not relevant; never looked for work	9.1	7.7	6.4	5.6	1.0	6.4
7. Other	14.8	10.4	11.6	12.3	10.3	11.5
8. Personal contact/referrals	69.3	63.8	68.1	74.7	81.4	69.1
9. Recruitment consultants/headhunters	39.8	43.2	53.4	58.6	66.0	51.2
10. Number	88	326	423	162	97	1096

We are curious about whether those using job sites also check for work opportunities on employer web sites. The relevant survey results are summarized in table 8.

We were interested in learning the percentages of respondents in different groups who found their current or most recent work using the Internet. These are shown in row 1 of table 8 for age-sex groups.

Table 8. Methods Used for Finding Current or Most Recent Work^a

	Men						Women					
	16-19	20-24	25-34	35-44	45-64	All	16-19	20-24	25-34	35-44	45-64	All
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
% who used the Internet to find their current or most recent work ^b	47.1 (51)	56.1 (255)	41.8 (340)	35.0 (143)	28.2 (78)	43.9 (867)	35.8 (67)	43.9 (198)	39.3 (277)	31.0 (116)	22.7 (75)	37.2 (733)
For those who indicated the degree of usefulness of Internet job search and used the Internet: ^c												
% indicating different degrees of usefulness for Internet job search:												
% for very	72.7	73.6	71.8	80.0	77.3	73.9	45.8	72.9	79.6	80.6	86.7	75.0
% somewhat	9.1	20.7	21.1	16.0	22.7	19.7	33.3	22.3	16.7	11.1	13.3	19.0
% not very	13.6	2.9	2.8	2.0	0.0	3.2	12.5	3.5	2.8	8.3	0.0	4.5
% not at all	4.5	2.9	4.2	2.0	0.0	3.2	8.3	1.2	0.9	0.0	0.0	1.5
Number	22	140	142	50	22	376	24	85	108	36	15	268
For those who used the Internet and used job sites: ^d												
%s of jobseekers by the number of job sites they used:												
% Over 10	39.1	16.2	32.4	34.0	25.0	26.5	21.7	17.4	19.4	22.2	35.3	20.4
% for 2-10	43.5	57.8	45.3	54.0	60.0	51.9	56.5	52.3	62.0	66.7	41.2	57.8
% for 1	8.7	16.2	17.3	10.0	0.0	14.4	8.7	22.1	15.7	11.1	17.6	16.7
% for 0	4.3	7.0	4.3	0.0	10.0	5.0	0.0	4.6	2.8	0.0	5.9	3.0
Never looked for work	4.3	2.8	0.7	2.0	5.0	2.1	13.0	3.5	0.0	0.0	0.0	2.2
Number	23	142	139	50	20	374	23	86	108	36	17	270
For those who used the Internet:												
Percent who also used employer sites for job search ^e	78.3 (23)	75.9 (141)	84.2 (139)	73.5 (49)	81.8 (22)		78.3 (23)	80.2 (86)	83.3 (108)	83.3 (36)	82.3 (17)	

^a In parentheses we give the total number of respondents who answered all questions used in computing the above percentage.

^b Selected "yes" on Q14.

^c For those who selected "yes" on Q14 and also chose one of the answers for the importance of the Internet for job search.

^d Based on responses to Q15.

^e Selected "yes" on Q16.

There is a strong age pattern in these figures. For men, the percentage rises from 47 to 56 percent from age 16-19 to 20-24, and then falls to 42, 35 and 28 percent for those aged 25-34, 35-44 and 45-64, respectively. The figures for women display a similar age pattern, but are lower, rising from 36 to 44 percent from age 16-19 to 20-24, and then falling to 39, 31 and 23 percent for those 25-34, 35-44 and 45-64, respectively. However, among those who reported using the Internet in looking for their current or most recent jobs, the patterns of those selecting the various degrees of usefulness (in rows 2-6) strike us as remarkably similar for men versus women. We see, moreover, that 90 percent or more of those at least 20 years of age and who used the Internet to look for their current or most recent work felt the Internet was somewhat or very useful as a means of job search.

The table 8, row 1 figures can be compared with those in row 3 of table 3 for those who have ever looked at or use Internet job sites, with the table 3 figures being higher, of course.

Rows 7-12 in table 8 are for those who answered “yes” on Q14 to the question of whether they used the Internet for finding their current or most recent work and who also answer Q15 regarding the approximate number of online recruitment sites visited while looking for their current or most recent work. (The sample sizes shown in row 12 are similar to those in row 6 because most of the same respondents both selected one of the options for the importance of Internet search in the second part of Q14 and also answered Q15.)

Note in row 11 that a positive percent of respondents for all age groups of men, and for the younger two age groups of women selected “not relevant; never looked for work before” on Q15 even though the question pertained to search practices “while looking for your current or most recent work.” The 2007 Job Search Survey contained questions to try to detect respondents motivated by the prospect of winning \$1000 US to try to complete the survey without giving any thought to their answers. Surveys with multiple and seriously inconsistent answers were discarded. However, even after eliminating those ones, there were surveys with some answers that seemingly are inconsistent, and which we interpret as mostly owing to errors in reading or understanding directions on the part of respondents, despite trying to complete the survey properly.

5.2 The Use of Employer Web Sites versus General Job Sites

Finally, table 9 shows results for regressions using as the dependent variable a dummy variable set equal to 1 for those who selected “yes” on Q16 in answering: “Have you ever checked work opportunities on company or other employer web sites?” The explanatory variables are all dummy variables also. For the first one, the dummy is set equal to 1 for those who selected “employee” on Q2. For the second, the dummy equals 1 if the respondent selected “often” on Q5 about the frequency of their use of general search engines like Google. For the third, the dummy equals 1 if they answered “yes” for having completed high school or secondary school. For the fourth, the dummy equals 1 if they answered “yes” for having at least some university education. And the fifth variable is a sex dummy set equal to 1 for men.

Table 9. Regressions for Job Search Using Company Web Sites ^a

	16-64	16-19	20-24	25-34	35-44	45-64
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	.47 (8.92)	.33 (2.22)	.54 (5.02)	.50 (5.33)	.43 (2.77)	.53 (3.06)
Employee dummy (=1 if “employee” selected on Q2)	.01 (.22)	.02 (.20)	.02 (.50)	-.02 (.48)	-.03 (.49)	.00 (.00)
Frequent search engine user (=1 if “often” selected on Q5)	.15 (6.71)	.29 (2.94)	.15 (3.35)	.15 (4.51)	.15 (2.56)	.12 (1.52)
High school completion dummy (=1 if “yes” for Q24)	.05 (.99)	.16 (1.17)	-.00 (.04)	.01 (.07)	.11 (.67)	.09 (.51)
University education dummy (=1 if “yes” for Q25)	.16 (5.87)	.01 (.07)	.11 (2.08)	.23 (5.23)	.14 (1.80)	.11 (1.28)
Sex dummy (=1 if “male” for Q21)	-.00 (.12)	-.09 (1.01)	.01 (.36)	.01 (.28)	.01 (.24)	-.12 (1.63)
Number of observations	1555	116	447	593	246	145
R ²	.056	.093	.035	.082	.051	.056
F statistic	18.3	2.3	3.2	10.6	2.6	1.7

^a The dependent variable is a dummy set equal to 1 if the respondent selected “yes” on Q16. The regression data samples consisted of all observations in the given age-sex group where the respondent also answered Q2, Q5, Q24, Q25 and Q21.

The estimated equation is significant at conventional levels for all of the age groups for which results are shown in table 9, with the R squared values ranging from .051 to .093. Looking now at the estimated coefficients, we find the pattern of significance both consistent across age groups and interesting.

5.3 Advantages of Looking for Work on Employer Web Sites

When employers have a job opening, often this is first advertised to others in the company, in case one of them knows of a suitable candidate. If the opening remains, it will often be advertised for a while on the jobs part of the employer web site. For many companies, it is only when they cannot fill their openings by these other means that they will then advertise the position on the online jobsites. We believe that jobseeker success rates are likely to be better if they find a job opening while it is still just on an employer’s job page. The survey results reveal that many jobseekers are looking at company websites for employment opportunities.

6. Conclusions

E-recruiting has been growing, and research on the topic needs to grow as well. We argue in this paper that thinking carefully about the questions that can be answered by different sorts of parties interested in online recruiting may help. In the empirical portion of this study we utilize data from a very recent survey of jobseekers that Richard Freeman has been conducting. The findings confirm some of our prior notions about job search, but challenge others.

2007 Worldwide Job Search Survey

(February 15, 2007 version)

Learn what works for finding work!

Complete this survey, and you'll be entered into a \$1,000 US cash prize draw!

(some conditions apply click [here](#) for details)

This survey is being conducted by Dr. Richard Freeman, a professor at Harvard University and the London School of Economics. To learn more about Dr. Freeman, click [here](#).

IF YOU COMPLETE THE SURVEY, you will receive, for FREE, an e-book with tips about what works for finding work.

**** Your information will only be used for statistical analyses about job finding methods and outcomes. No personal information will be released. ****

1. In your experience, which of the following are useful methods of looking for work? (Check ALL methods you feel are useful. For each one of these, choose a term from the drop down menu to indicate HOW useful you found that method.)

- National/local newspapers and/or trade magazines
- Internet recruitment sites
- Personal contact/referrals
- Recruitment consultants/headhunters
- Networking or word of mouth
- Careers office/graduate recruitment
- Career fairs/exhibitions
- Other (please specify)
- Not relevant; never looked for a job

2. Check *all* of the following that describe your activity last week?

- worked as an employee
- self employed
- unemployed
- on strike
- attended school/studied
- kept house; caring for children or others

inactive due to illness, injury or disability

3. Which of the following places do you use the computer? Check *all* that apply.

work

home

school

library

other (specify)

4. Have you ever made a purchase over the Internet?

sometimes

often

never

5. Do you ever use search engines (such as Google) to look for information on the Internet?

sometimes

often

never

6. Have you ever looked at or used Internet job sites?

Yes

No

If yes, why? (Check ALL answers that apply. For each one of these, choose a term from the drop down menu to indicate HOW useful you found Internet job sites for the stated purpose.)

To check job advertisements

To find out about specific companies/potential employers

To obtain information about industry sectors

To access career tips/advice

To get salary or wage information

To create an online resume

To upload or send an online resume

To enable potential employers and recruiters to find your resume

<input type="checkbox"/> To access employment news <input type="text"/>
<input type="checkbox"/> To access research or reports <input type="text"/>
<input type="checkbox"/> For career planning <input type="text"/>
<p>7. Do you have work now?</p> <input type="checkbox"/> yes <input type="checkbox"/> no
<p>If yes, are you satisfied with your current job?</p> <p>In terms of pay <input type="checkbox"/> yes <input type="checkbox"/> no</p> <p>In terms of benefits <input type="checkbox"/> yes <input type="checkbox"/> no</p> <p>In terms of the type of work that you do <input type="checkbox"/> yes <input type="checkbox"/> no</p> <p>In terms of relations with supervisors <input type="checkbox"/> yes <input type="checkbox"/> no</p> <p>In terms of relations with co-workers <input type="checkbox"/> yes <input type="checkbox"/> no</p> <p>If yes, how much longer do you intend to stay at this job? (choose the answer that best describes your expectations)</p> <input type="checkbox"/> Less than another month? <input type="checkbox"/> 1-11 months <input type="checkbox"/> 1-5 years <input type="checkbox"/> 6-10 years <input type="checkbox"/> more than 10 years
<p>8. If you are not working now, when did you last work?</p> <input type="checkbox"/> never <input type="checkbox"/> within the last 12 months <input type="checkbox"/> prior to the last 12 months
<p>9. Are you looking for work now?</p> <input type="checkbox"/> yes <input type="checkbox"/> no
<p>If you are <i>not</i> looking now, do you plan to look for work in the coming 12 months?</p> <input type="checkbox"/> yes <input type="checkbox"/> no
<p>If you are <i>not</i> looking for work now, have you ever looked for work?</p> <input type="checkbox"/> yes

<input type="checkbox"/> no
10. When you last looked for work, what was your main motivation? <input type="checkbox"/> wanted to find a first job <input type="checkbox"/> needed work because of losing or quitting the work I had before then <input type="checkbox"/> was working, but wanted to find a new job <input type="checkbox"/> needed to show evidence of job search as a requirement for collecting income support benefits like unemployment insurance <input type="checkbox"/> just curious about the jobs available <input type="checkbox"/> not applicable; never looked for work before
11. How did you find the work you have now, or that you had most recently? <input type="checkbox"/> Through friends or other people I knew <input type="checkbox"/> Through a newspaper ad <input type="checkbox"/> Through an ad I saw on a bulletin board <input type="checkbox"/> On an Internet recruitment site <input type="checkbox"/> On a company web site <input type="checkbox"/> I was contacted directly by the employer <input type="checkbox"/> Union/professional organisations <input type="checkbox"/> Recruitment agency/headhunters <input type="checkbox"/> Through a school career or employment office <input type="checkbox"/> Other; please specify <input type="text"/> <input type="checkbox"/> Not relevant; never worked before
12. Have you ever filled out a job application on the Internet? <input type="checkbox"/> yes <input type="checkbox"/> no
13. How long did it take you to find your current or most recent work? <input type="checkbox"/> No time; they came to me <input type="checkbox"/> Less than 6 months <input type="checkbox"/> 6 months to a year <input type="checkbox"/> More than a year <input type="checkbox"/> Not relevant; I never worked so far

14. For finding your current or most recent work, did you use the Internet?

- yes
- no

If you used the Internet, how important was this as a means of job search?

- very
- somewhat
- not very
- not at all important

15. Approximately how many online recruitment sites did you visit while looking for your current or most recent work?

- 0
- 1
- 2-10
- more than 10
- not relevant; never looked for work before

16. Have you ever checked work opportunities on company or other employer web sites?

- yes
- no

If yes, was this useful?

- very
- somewhat
- not very
- not at all

17. While you were looking for your current or most recent work, which of the following best describes what you were doing?

- working at another job for the same employer
- working at another job, for a different employer
- doing contract work or working in my own business
- working in a family business
- ill or recovering from an accident

- unemployed
- studying
- homemaker; caring for others
- other; please specify
- not relevant; never worked

18. What country are you living in now?

Choose One...

19. Which of the following best describes where you live? (choose one of the following)

- big city (more than one million people)
- smaller city or town
- rural or other non-urban place of residence

20. How old are you?

- < 16 years of age
- 16-19 years of age
- 20-24 years of age
- 25-34 years of age
- 35-44 years of age
- 45-64 years of age
- over 64 years of age

21. Are you:

- Male
- Female

22. Which of the following best describes the industry of your current or most recent work?

- Not relevant; never worked
- Biotech/pharmacy
- Education
- Engineer/Applied sciences
- Finance
- Health care

- Hospitality/tourism
- Human resources
- Insurance
- IT or e-commerce
- Legal
- Manager/Administration
- Marketing
- Natural sciences
- Primary industry such as mining, oil or gas, forestry, farming or fishing
- Production management
- Public service
- Recreation/culture
- Retail
- Trade or Transportation
- Other (please specify)

23. For your current or most recent work, what type of organisation is/was this for?

- Public sector/government
- Private business
- Volunteer organization
- Myself, or a family business

24. Have you completed high school or secondary school?

- yes
- no

25. Have you attended some university or college?

- yes
- no

If yes, list any degree(s) you completed?

26. Do you have technical school or trade training or certification?

- yes
 no

If yes, what training or certification do you have?

27. Were you a student at any time over the last 12 months?

- yes
 no

If yes, were you a full time student?

- yes
 no

Were you studying by correspondence or in a distance learning program?

- yes
 no

If yes, when will you finish your program of study?

- already finished
 within the next 12 months
 more than 12 months from now

28. How much did you earn from work in the last full year (12 months)?

- Earnings for last year:
 Not relevant; did not work for pay or profit

29. If you could give some advice to others like you who are looking for work now, what would that be?

If you wish to be entered in the draw for the \$1000 US prize and to receive a job search e-book, enter your e-mail address:

(For details concerning the prize draw, click [here](#).)

If you have any questions or concerns about this survey, or suggestions to make, or if you wish to send a message to Professor Freeman, please enter your remarks here:

Thank you for taking the survey!

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