

Job search methods: Internet versus traditional

In 1998, 15 percent of unemployed jobseekers used the Internet to seek jobs, as did half of all jobseekers with online access from home; Internet search rates exceeded those of such traditional methods as the services of private employment agencies, contacting friends or relatives, and using the registers of unions or professional organizations

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In the current “e-commerce” boom, much attention has been paid to how the Internet is transforming product markets. At the same time, the Internet also is transforming labor markets, altering the way workers look for jobs, and the way firms recruit workers. More than 2,000 Internet job search sites now exist, yet little is known of their effects on labor markets.¹ What percentages of unemployed (and employed) Americans use the Internet to search for jobs?

This article examines the frequency and incidence of Internet job search among U.S. workers, by race, gender, and other demographic characteristics, the location of the job search (from home, from work, or from other access points), and the relation between Internet search and traditional job search methods. Internet job search data are from a special supplement to the December 1998 Current Population Survey (CPS), which asked respondents about computer and Internet use.² The traditional job search methods are from the monthly CPS, where they are used by the BLS to determine if a respondent is an active jobseeker.³ The nine traditional methods are:

- Contacted employer directly
- Contacted public employment agency

- Contacted private employment agency
- Contacted friends or relatives
- Contacted school employment center
- Sent résumés/filled applications
- Checked union/professional registers
- Placed or answered ads
- Used other active search methods

Note that there is a possibility of overlap between search for a job via the Internet and the traditional methods outlined in the CPS. For example, unemployed jobseekers who say they “contacted employers directly” may have done so through the Internet, perhaps submitting a résumé via e-mail (Internet search) or they may have actually mailed or personally delivered a copy of the résumé to potential employers (traditional search).

Labor force status and location

The Internet and Computer Use Supplement to the December 1998 CPS asked respondents if they or anyone in their household used the Internet for any of a variety of purposes, including job search. Respondents were also asked where they conducted their Internet job search—from home, work, or some other site. All of our discussion of these statistics pertains to the adult, civilian, noninstitutional popula-

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Table 1. Internet job search rates and computer/Internet access by labor force status, December 1998

Item	Total	Employed		Unemployed		Not in the labor force		
		At work	Absent	On layoff	Jobseeker	Retired	Disabled	Other
Internet use for job search								
Internet job search from:								
Home	4.0	5.2	5.4	2.9	11.0	0.3	1.1	2.6
Outside the home	1.8	2.3	2.1	1.9	4.6	.0	.4	1.4
Any source	5.5	7.1	7.0	4.8	15.0	.3	1.4	3.8
Computer/Internet access								
Persons with a computer in the household	46.9	54.6	52.6	30.5	37.5	22.3	20.3	49.1
Persons with Internet access from home ¹	29.4	34.7	33.9	16.5	22.3	12.2	10.5	31.9
Persons using the Internet (for any reason) from:								
Home	23.6	28.6	27.4	13.1	18.7	7.5	6.1	24.7
Work	12.0	18.8	12.4	.0	.0	.0	.0	.0
Other locations	4.5	4.1	4.9	8.6	11.4	1.0	2.1	9.6
Any location	34.3	42.6	39.2	21.7	30.1	8.5	8.2	34.3
Internet job search rates among those with access²								
Computer in household	10.1	11.2	12.2	9.5	31.2	1.3	6.1	6.5
Internet access from home	14.6	15.9	16.6	17.6	49.5	2.3	10.4	9.0
Internet use from home	18.0	19.1	20.4	22.2	59.1	3.7	17.7	11.3
Internet use at any location	16.1	16.7	17.9	22.0	49.9	3.5	17.3	11.2

¹ The respondent lives in a household in which someone uses the Internet from home.
² Refers to Internet job search from any location. The data are computed by dividing the "Internet use for job search" rate by the "computer/Internet access" rate.

tion. Thus, individuals aged 15 or younger were dropped from our sample, as were adults serving in the Armed Forces.

Perhaps unsurprisingly, Internet job search is more common among unemployed jobseekers (that is, unemployed workers who are not "on layoff") than in any other labor force status group. (See table 1.) In December 1998, about 15 percent of unemployed jobseekers used the Internet to look for a new job. This percentage exceeds the proportion of unemployed jobseekers who used six of the nine traditional methods listed in the basic CPS monthly survey.⁴ These six methods are: contacted private employment agencies, contacted friends/relatives, contacted school/university employment centers, checked union/professional registers, placed or answered ads, used other active search methods.

While Internet job search is most common among the unemployed, it also is substantial among the employed.⁵ In December 1998, about 7 percent of employed workers searched for new jobs using the Internet. While this may not appear to be a large proportion, it exceeds all published estimates of on-the-job search (via all methods combined) of which we are aware. In particular, Carl Rosenfeld, using a special supplement to the May 1976 CPS, reported that 4.2 percent of workers who had been employed for at least 4 weeks said they were currently searching for a job.⁶ Matthew Black, using data from the Panel Survey of Income Dynamics, reported in 1981

that 5 percent of employed men looked for work. In another study, C. A. Pissaridies and J. Wadsworth reported in 1994 that 5.3 percent of employed British men actively searched for work.⁷ Published statistics from the Canadian Labor Force Survey (which, up to 1995, regularly asked employed workers if they searched for another job in the last 4 weeks) show an average annual rate of 5.2 percent for the years from 1990 to 1995, with little year-to-year variation.⁸ As these statistics predate widespread use of the Internet for job search, they are consistent with the notion that the Internet has raised the fraction of employed workers who are looking for a new job in the economy.⁹

Internet job search is lower among persons out of the labor force compared with persons in the labor force—that is, persons who are employed or unemployed. However, if the retired or disabled are excluded from the calculations, 3.8 percent of nonparticipants regularly look for jobs on the Internet, a figure that compares favorably with the non-Internet search rates found among employed workers in the studies discussed above. Finally, regardless of labor force status, most Internet job search occurs from home. Of employed persons looking for work online, only 32 percent searched from a nonhome site. Even though unemployed jobseekers do not have the option of accessing the Internet from a workplace, 30 percent of this group used a nonhome site as well.

Further detail on Internet job search among unem-

ployed jobseekers is obtained by disaggregating that group according to their reason for being unemployed. (See table 2.) As shown, Internet job search is most frequent among job losers, of whom about 1 in 5 used the Internet to look for work in December 1998. Perhaps surprisingly, the lowest use rates are among persons entering the labor force. To the extent these new entrants are younger, one might expect them to have higher use rates (see, for example, table 6). The relatively low use rates among persons whose temporary job ended also is surprising, as one might expect workers on a series of temporary jobs to make greater investments in job search technologies than other workers. Again, regardless of the reason for unemployment, most Internet search occurs from home.

Given the preponderance of the home as the main location for conducting an online job search, one might conjecture that access to the Internet from home is a key determinant of whether an individual searches for jobs online. About 55 percent of employed persons had a computer in their home in December 1998, compared with 38 percent of unemployed jobseekers.¹⁰ (See table 1.) Home Internet access is less common, at 35 percent of those employed and at work, 22 percent of unemployed jobseekers. Given access from home, 82 percent of employed persons, and 84 percent of unemployed jobseekers actually use the Internet from home. At the same time, access from home is far from a prerequisite for Internet use, even for the unemployed and for nonparticipants in the labor force, who do not have the option of access from work. In fact, the proportion of unemployed jobseekers using the Internet—at 30 percent—substantially exceeds the proportion with Internet access from home—22 percent. The same is true, although much less dramatically, for persons not in the labor force who are not retired or disabled.

Table 1 also presents Internet job search rates (from any location) conditional on three alternative measures of computer or Internet access. Especially for unemployed jobseekers, these rates are much higher than the

Table 2. Jobseekers using the Internet for job search by labor force status, December 1998
[In percent]

Characteristic	Internet job search from:		
	Home	Outside home	Any location
Job loser	15.8	4.5	19.6
Temporary job ended	9.4	4.3	13.7
Job leaver	12.4	5.6	17.0
Re-entrant	8.3	4.5	12.5
New entrant	5.1	3.5	7.9

NOTE: The category "Any location" is important, because it is not just the sum of the other two rows, for there is overlap between them.

Table 3. Internet access points for unemployed jobseekers who used the Internet for job search, December 1998
[In percent]

Location of search	Total	With Internet access at home ¹	Without Internet access at home
Home	73.6	100.0	0.0
School:			
Kindergarten to grade 12 ...	3.3	1.1	9.5
Other grades	7.1	4.2	15.3
Public library	9.0	3.4	24.4
Community center	1.3	.0	5.0
Someone else's computer	15.1	4.6	44.6
Other	7.0	3.5	16.8

¹ The individual lives in a household in which someone uses the Internet from home.

unconditional rates. For example, almost half (49.5 percent) of unemployed jobseekers who had home Internet access used the Internet to look for work. Almost 60 percent of unemployed jobseekers who used the Internet at home looked for work online. This high conditional use rate explains the fact that even though the unemployed were less likely to have access to the Internet, they were more likely to search online for jobs than were other workers.

Jobseekers were asked their source of Internet access, 15 percent of whom reported using the Internet for job search. Of this group, 74 percent reported using the Internet from home. (See table 3.) Very few of those with home access used any other access site. But what of the unemployed who (by definition) cannot access the Internet from work, and do not have home access? According to the data, by far the most common access point for these individuals is "someone else's computer," at nearly 45 percent of searchers. Public libraries and a college or university are the next most common access sites. Schools at the kindergarten to grade 12 level and community centers play relatively minor roles, smaller in both cases than the residual, "other" category. Presumably, an individual who conducted online search from a computer terminal in a public employment agency would be categorized under "other." If so, these figures indicate that public employment agencies play a smaller role than informal social networks ("someone else's computer") or public libraries in providing physical access to the Internet for unemployed workers' job search.

Approximately 19 percent of workers who used the Internet at work also used the Internet to look for a new job—historically, a very high rate of on-the-job search. (See table 4.) Less than half of these (45.5 percent), however, conducted this online job search from outside their homes. While it cannot be precisely determined what

proportion of employed workers looked for jobs online from their work site, the final row of data in table 4 provides a lower bound to this number. Overall, 7.6 percent of employed workers searched online from a nonhome location, and did not use a nonwork location either. Put another way, the final column of table 4 indicates that at least 1 in 5 employed workers who looked for jobs online did so from a computer at their workplace.

The 'digital divide'

Is there a "digital divide" along racial, ethnic, or gender lines in Internet job search? The percentage distribution among racial and ethnic characteristics clearly indicates that divisions do exist. Only 7 percent of unemployed Hispanic jobseekers looked for jobs online in December 1998, compared with 9 percent of blacks and more than 16 percent of whites. (See table 5.) Unemployed black and Hispanic workers are taking advantage of the job search resources of the Internet to a much smaller degree than unemployed whites. These ethnic and racial gaps are less pronounced among employed persons, with online search rates at 4 percent for Hispanics, 6 percent for blacks, and 7 percent for whites. The gender divide is not nearly as stark as either the racial or ethnic ones. Internet job search among unemployed women equalled that of unemployed men: both were about 15 percent. Among employed female jobseekers, 6.5 percent were looking for work online in December 1998, compared with 7.6 percent of employed men.

Is the racial and ethnic divide in Internet job search driven primarily by differential access to technology, or by differential use of technology conditional on access? This issue is addressed by presenting disaggregated measures of access and conditional use. (See table 5.) By any measure and in all labor force categories, blacks and Hispanics have less access to computers and the Internet. Only 20 percent of unemployed black and Hispanic jobseekers have a computer in their household, compared

with 40 percent of unemployed white jobseekers. Internet access from home is even more unequally distributed, at 7.5 percent of unemployed Hispanic jobseekers, compared with 10.4 percent for blacks and 25.4 percent for whites. Similar, but less dramatic, gaps are evident among other labor force categories. Gender gaps in access are comparatively, and uniformly, very small.

Another finding to emerge from the data: conditional on most measures of access, and within most labor force categories, blacks and Hispanics are more likely than whites to use the Internet for job search. The difference is particularly dramatic for blacks, and among unemployed jobseekers. Conditional on Internet access from home, 64 percent of unemployed blacks use the Internet to look for work, compared with only 48 percent of whites. Conditional on using the internet (for any reason and from any location), slightly more than 51 percent of both black and Hispanic unemployed jobseekers use it to look for work, compared with 49.6 percent of whites. Among employed persons who use the Internet (from any location), 23 percent of blacks use it to look for work, compared with 19 percent of Hispanics and 16 percent of whites. Again, the gender gap in conditional use is small. There is, however, some indication that, conditional on access, employed men are more likely than employed women to use the Internet to look for a new job. These data suggest that the ethnic and racial gap in Internet job search among the unemployed is explained entirely by differences in access. Given equal access to the technology, both blacks and Hispanics are highly likely to use the Internet in their search for a new job.

Further details on the determinants of Internet job search are provided by the probit models reported in table 6. To preserve degrees of freedom, these regressions are performed for the sample of all employed and unemployed workers, although controls for labor force status are used. Persons not in the labor force are excluded from the sample. To illustrate the role played by access, three alternative specifications are reported: the specification

in the first two columns does not control for access, while the specifications reported in the remaining columns control for the presence of a computer in the household or for Internet access from home. As before, the dependent variable is whether the individual regularly conducted Internet job search from any location. For ease of interpretation, coefficients are presented as predicted changes in the probability of Internet search, rather than the more commonly-reported probit index coefficients.

Location of search	All employed workers ¹	Employed workers who:		
		Use the Internet at work	Have Internet access at home ²	Look for jobs online (from any location)
Used the Internet to search for jobs:				
From any location	7.1	19.1	16.0	100.0
From home	5.2	11.7	14.9	72.8
Away from home	2.3	9.0	2.1	32.2
Away from home, and did not report using only nonwork location	1.5	7.6	1.6	20.6

¹ Employed workers who are "at work" and "absent from work" combined.
² The individual lives in a household in which someone uses the Internet from home.

Table 5. Internet job search rates and computer/Internet access by labor force status and selected demographic characteristics, December 1998

[In percent]

Characteristic	Total	Employed		Unemployed		Not in the labor force		
		At work	Absent	On layoff	Jobseeker	Retired	Disabled	Other
Internet use for job search¹								
White	5.6	7.1	6.8	4.9	16.5	0.3	1.7	3.9
Black	4.8	6.3	6.8	5.4	9.2	.1	.7	2.8
Hispanic	3.2	4.0	3.7	.0	7.2	.0	.3	2.0
Men	6.5	7.6	8.7	3.9	15.2	.4	1.8	5.7
Women	4.7	6.5	5.6	6.6	14.7	.2	1.1	3.1
Computer and Internet access								
Computer in the home								
White	49.3	57.2	54.6	32.8	41.7	23.2	23.5	52.8
Black	26.3	32.7	32.2	9.9	20.0	10.2	9.4	22.9
Hispanic	28.2	32.4	36.9	13.8	20.2	17.4	15.4	23.9
Men	48.4	54.8	53.6	28.6	38.6	25.0	21.1	50.4
Women	45.4	54.4	51.6	34.2	36.3	20.4	19.5	48.6
Internet access from home ¹								
White	31.4	36.9	35.7	18.5	25.4	12.9	12.5	35.0
Black	12.7	16.3	15.2	2.0	10.4	3.9	3.2	10.4
Hispanic	13.9	16.5	19.8	4.2	7.6	6.8	6.9	11.3
Men	31.0	35.7	34.6	15.8	23.3	13.8	11.2	32.6
Women	28.0	33.6	33.2	17.8	21.1	11.1	9.7	31.6
Internet use from any location								
White	36.1	44.6	41.3	22.9	33.2	9.3	9.8	37.0
Black	20.7	27.6	22.6	16.6	18.1	1.7	2.7	17.2
Hispanic	18.0	21.6	27.0	7.8	14.0	1.8	3.3	17.1
Men	36.2	42.5	38.8	22.0	31.0	10.5	8.3	41.4
Women	32.6	42.8	39.6	21.1	28.9	7.1	8.0	31.5
Internet job search rates among those with access								
Computer in the home								
White	9.9	11.0	11.4	9.6	31.2	1.3	6.8	6.4
Black	12.5	13.6	18.1	(²)	33.3	.8	1.2	6.5
Hispanic	8.4	9.6	10.1	(²)	20.5	.0	1.9	4.8
Men	11.8	12.4	15.2	9.6	30.9	1.7	7.7	9.8
Women	8.5	9.9	9.4	9.4	31.5	.9	4.4	5.2
Internet access from home ¹								
White	14.1	15.5	16.1	17.0	47.9	2.4	11.2	8.6
Black	20.7	21.4	(²)	(²)	64.0	2.0	(²)	11.0
Hispanic	15.5	16.7	(²)	(²)	(²)	.0	(²)	10.7
Men	16.8	17.5	20.6	17.4	48.5	3.0	12.2	13.3
Women	12.2	14.1	12.8	(²)	50.9	1.6	8.5	7.2
Internet use from any location								
White	15.4	16.0	16.6	21.2	49.6	3.5	17.1	10.6
Black	23.0	22.8	30.3	(²)	51.1	(²)	(²)	16.3
Hispanic	18.0	18.7	13.8	(²)	51.5	(²)	(²)	11.9
Men	17.9	18.0	22.3	17.6	49.1	4.1	21.0	13.9
Women	14.4	15.1	14.1	(²)	50.8	2.9	13.6	9.8

¹ The individual lives in a household in which someone uses the Internet from home.

² Data not shown where the base is less than 75,000.

Table 6. Probit estimates of the probability of Internet job search among labor force participants

Variable ¹	Access controls					
	None		Computer in household		Internet access at home ²	
	Coefficient (dF/dX)	t-statistic	Coefficient (dF/dX)	t-statistic	Coefficient (dF/dX)	t-statistic
Primary school	-0.052	-9.39	-0.041	-7.57	-0.036	-7.04
Did not complete high school	-.052	-16.61	-.041	-14.27	-.036	-13.32
Completed high school ...	-.050	-19.56	-.036	-15.44	-.030	-13.61
Did not complete college	-.021	-8.44	-.015	-6.92	-.012	-5.94
Associate degree	-.013	-4.14	-.008	-2.81	-.004	-1.66
Married	-.012	-5.51	-.019	-9.83	-.019	-10.37
Male .....	.017	7.98	.013	7.12	.010	5.86
Black	-.004	-1.16	.009	2.68	.013	4.32
Hispanic	-.016	-4.54	-.006	-1.85	-.002	-.68
Northeast	-.005	-1.88	-.006	-2.52	-.006	-2.99
Midwest	-.004	-1.75	-.005	-2.11	-.003	-1.57
West .....	.014	5.02	.008	3.24	.006	2.71
Unemployed—looking for work .....	.117	16.04	.120	17.27	.113	17.50
Unemployed—on layoff ...	.021	1.42	.030	2.01	.029	2.09
Age in years						
16–25 .....	.214	8.76	.163	7.71	.143	7.08
26–35 .....	.193	8.84	.159	8.23	.142	7.64
36–45 .....	.141	7.26	.106	6.32	.093	5.81
46–55 .....	.120	6.05	.089	5.24	.076	4.73
56–65 .....	.069	3.58	.051	3.09	.041	2.67
Computer in home .....	...	...	.063	30.02	...	...
Internet access in home ..	...	...	...	...	.101	43.31
Number of observations ..	62,246	...	62,246	...	62,246	...

¹ Omitted categories are "university degree," "not married," "females," "non-black," "non-Hispanic," "South," and "employed" for the various sets of dummy variables respectively. The regression also included sixteen dummy variables for the respondent's industry and thirteen for his/her occupation. For ease of interpretation, coefficients are presented as predicted changes in the probabilities of Internet search, rather than the more commonly reported probit index coefficients.

² The individual lives in a household in which someone uses the Internet from home.

The data (columns 1 and 2) show that Internet job search is about 5 percentage points lower among workers with high school education or less, than among college graduates. Online job search is less common among married people, and is more common among men and young people. Regionally, it is most common in the West. As controls for access are added to the data, the effects of education, age, and gender on use remain qualitatively the same, but somewhat smaller in magnitude: some of the difference in access is related to these three factors. When observable characteristics (but not access) are held constant, blacks are not significantly less likely than other racial groups to use the Internet for job search, but Hispanics are. Adding access controls eliminates the "digital job search divide" for Hispanics, and (as suggested

in table 5) reverses it for blacks. Given access to the Internet, and controlling for ethnic differences in labor force status, blacks are more likely, and Hispanics are no less likely, to use the Internet for a job search than whites.

Internet versus traditional search methods

Motivated (at least in part) by a desire to understand the process by which unemployed workers become employed, the Current Population Survey has been collecting information about methods used to search for jobs since 1967. Clearly, the Internet, with its search capabilities and low-cost communications, has the potential to dramatically change the methods workers use to search for work. Some traditional methods, such as contacting friends and relatives, conceivably could be partly displaced by the Internet. Other traditional methods, such as sending résumés, could be complementary with the Internet, and could increase in use as the Internet expands.

The relation between Internet and traditional job search methods is investigated in two ways. First, for December 1998 only (the date of Internet job search question), we ask which of the traditional job search methods were overrepresented, and which were underrepresented, among persons

conducting an online job search. Second, we examine trends that emerged in the use of traditional search methods for 1994 through 1999 for any "internet effect," using the December CPS files of each year. In both cases, our analysis is restricted to unemployed, active jobseekers only. This is because the CPS traditional search method questions pertain only to this group. The data begin with 1994, because earlier surveys used a different list of search methods.

The proportion of Internet and non-Internet jobseekers using each of the nine traditional methods listed in the basic monthly CPS in December 1998 is shown in table 7. (Note that to be classified as an unemployed jobseeker, an individual must report using at least one of these methods). While most of the differences between those who

searched online and those who did not are small, Internet searchers are more likely to use seven of the nine traditional search methods than are job searchers who do not search online. The two underrepresented methods among Internet searchers are “contacted firms directly” and “contacted friends or relatives,” with a particularly dramatic difference in the former method. Among the methods that are substantially overrepresented among Internet searchers are “sent résumés,” “placed or answered ads,” and “used other active search methods.”

One interpretation of the above results is that the Internet is complementary with most traditional search strategies. (It may even be the vehicle by which some searches are conducted, for example, sending out résumés and answering ads). Apparently, this complementarity extends even to public employment agencies, which are used by 25 percent of Internet searchers versus only 19 percent of jobseekers who do not use the Internet. Another possibility, however, is that jobseekers who use the Internet as a search method are a selected sample of persons who choose to look for work more intensely than other jobseekers. Indeed, the average number of traditional search methods reported by Internet users is 2.15, compared to 1.69 for non-Internet users.

If the patterns of relative method use in the 1998 CPS supplement reflect true complementarities or substitutabilities with Internet search, then those traditional methods which are overrepresented among Internet users should exhibit increasing use during a period of rapid Internet expansion, while other methods should show a decline in usage. To explore this issue, table 8 reports trends in the use of traditional search methods by unemployed jobseekers between 1994 and 1999. For reference, the table also presents data on trends in Internet access and labor market conditions. Clearly, this was a period of rapidly expanding Internet access, with overall Internet access almost quadrupling from 14 percent of adults in 1995 to 54 percent in 1999. As noted, however, Internet job search rates among unemployed jobseekers lagged far behind this trend, attaining only 15 percent by the end of 1998. As the unemployment statistics indicate, 1994–99 was also a period of continuous economic expansion. This makes it difficult to disentangle secular from cyclical effects, and the results must be viewed with this caveat in mind.

The table shows increases in the use of only two traditional search methods over the 1994–99 period: “sent résumés/filled applications” and “used other active search methods.” Both methods were substantially overrepresented among Internet searchers in 1998, so some of the increased usage could be attributable to the growth of the Internet. This seems more likely for the “other active” category, which increased relatively constantly throughout the period. For “sent résumés,” however, most

of the increase occurred between 1994 and 1995, which is less suggestive of an Internet effect.

The remaining seven search methods declined in use over the period 1994–99.¹¹ Among these, two (contacted union/professional registers and school/university employment centers) are less popular methods, used by less than 3 percent of jobseekers in all years. Private employment agencies are also a lesser utilized method of job search, and a closer examination of the time trends for this method provides very little evidence of a secular decline. Of the four remaining methods for which usage declined, two—“direct employer contact” and “friends/relatives”—are consistent with the cross-sectional use patterns in the 1998 supplement. However, the decline in direct employer contact is very small, and could also be easily explained by the expanding economy of the late 1990s.¹² The other two—“placed/answered ads” and “public employment agencies”—declined despite being overrepresented among Internet searchers.

Clearly, further research with careful controls for macroeconomic conditions is required to fully understand recent changes in the mix of search methods over time. Even absent such research, however, it is very unlikely that the effects of the Internet on 1994–99 trends in traditional search methods were very large. One reason is simply that the cross-sectional patterns of methods used are not dramatically different between Internet users and nonusers. Another is that Internet search had only attained 15 percent of jobseekers by the end of 1998. Thus, most of the change is yet to occur.

It also seems unlikely that the decline in the use of public employment agencies observed in table 8 is driven by private, Internet competition. First, the observed decline in public agency use is confined to the last year of our sample. Second, recall that public agency use was actually overrepresented among Internet searchers in our 1998 cross-section data. Finally, one researcher documented a secular decline in the use of public employment agencies well before the late 1990s.¹³ An Internet-

Table 7. Use of traditional search methods by Internet job searchers and non-Internet job searchers

Traditional search method	Internet job search		
	Total	No	Yes
Contacted employer directly	64.5	65.0	62.0
Contacted public employment agency	20.4	19.5	25.2
Contacted private employment agency	6.6	6.0	10.2
Contacted friends or relatives	13.5	13.8	11.9
Contacted school / university employment center	2.3	2.0	3.5
Sent out résumés / filled out applications	48.3	45.5	64.1
Checked union / professional registers	1.5	1.2	3.1
Placed or answered ads	14.5	12.7	24.5
Used other active search methods	4.4	3.4	10.1

Table 8. Trends in the use of traditional search methods, 1994–99

[In percent]

Traditional search method ¹	1994	1995	1996	1997	1998	1999
Contacted employer directly	67.4	65.1	64.7	67.3	64.5	65.1
Contacted public employment agency	20.4	20.1	18.9	19.1	20.4	15.9
Contacted private employment agency	7.2	7.1	7.5	6.6	6.6	7.0
Contacted friends or relatives	15.7	18.0	16.6	14.6	13.5	13.4
Contacted school employment center	2.3	1.9	2.3	2.7	2.3	1.6
Sent out résumés / filled out applications	40.2	46.9	48.3	46.6	48.3	47.6
Checked union / professional registers	2.7	2.4	2.5	1.7	1.5	1.9
Placed or answered ads	16.7	17.7	17.3	16.3	14.5	12.5
Used other active search methods	3.5	2.9	3.9	4.6	4.4	5.7
Internet diffusion measures						
Percent of adults online ² .....	...	14	23	36	42	54
Percent of unemployed jobseekers searching for jobs online ³ .....	...	...	...	...	15	...
Civilian unemployment rate ⁴	5.1	5.2	5.0	4.4	4.0	3.7

¹ Results are from the December CPS of each year.

² Data from 1995 to 1998 are from surveys conducted by the Pew Research Center for the People and the Press. See <http://www.people-press.org/tech98que.htm> (visited Oct. 5, 2000). Survey months are June, July, November and December respectively. 1999 data are for April and are from Bruce Bimber, "Information and Political Engagement in America: The Search for Effects of Information Technology at the Individual Level," unpublished paper, Department of Political Science, University of California, Santa Barbara, Feb. 11, 2000. See also <http://www.polsci.ucsb.edu/faculty/bimber/research/diffusion.html> (visited Oct 5, 2000).

³ Data are from table 1.

⁴ BLS unemployment statistics for December of each year. See <http://stats.bls.gov/top20.html> (visited Oct. 21, 2000).

“someone else’s computer,” followed by a public library.

Because most Internet job search takes place in the home, overall use of this search method is highly conditioned by Internet access at home. For example, total Internet job search rates rise to 31 percent of unemployed jobseekers if attention is restricted to computer owners, and to almost 60 percent if looking only at unemployed jobseekers who use the internet at home. Among employed persons, Internet job search also rises with access: just under one-fifth (19 percent) of employees with access to the Internet at work use the Internet to search for a new job. At least 7 percent of them do so from a computer in their workplace.

There is, indeed, a racial and ethnic divide in Internet job search: among unemployed jobseekers, 16 percent of whites, 9 percent of blacks, and 7 percent of Hispanics used the Internet to

induced demise in public employment agencies may yet occur, but does not appear to have been a major factor up to December 1999.

Online search a realistic option

The Internet is used by both the employed and unemployed to look for jobs. In December 1998, 13 percent of unemployed Americans, and 7 percent of employed Americans looked for a new job via the Internet. This proportion rises to 15 percent if the data are restricted to active jobseekers, that is, if unemployed persons who are not actively looking for work are excluded. Employed workers’ Internet job search rate exceeds all estimates of employed job search (via all methods combined) of which we are aware, all of which were derived from periods before Internet search was a realistic option for the vast majority of the population.

Most Internet job search is conducted from home. For both the employed and unemployed, almost three-quarters of Internet jobsearchers conducted at least some of this search from a computer in their home. About 30 percent searched from a computer outside their home, and a small fraction (3 to 5 percent) searched from both locations. For unemployed jobseekers without Internet access at home, the most common access point was

look for a new job. Statistically, this gap is completely explained by differential access to technology: when data are restricted to computer owners, black jobseekers are more likely than white jobseekers to search online; when data are restricted to persons with Internet access at home, 64 percent of black jobseekers regularly look for work on the Internet, compared with 48 percent of whites. In short, there is absolutely no indication that given access to the technology, blacks or Hispanics are less inclined than whites to use the Internet for job search.

Rather than abandoning other methods of job search, unemployed jobseekers who search for jobs online are more likely than other jobseekers to use most traditional methods of job search as well. It is possible that online searchers are simply a selected sample of persons who search more intensely than others; in contrast, Internet search may genuinely be complementary with these other methods. The only search methods that are underrepresented among Internet searchers are “direct employer contact” and “friends and relatives.”

Between 1994 and 1999, unemployed jobseekers expanded their use of only two job search methods—“sent résumés” and “other active”—and decreased their use of all other methods. While some of these changes may be partly connected to increased Internet search, it appears

unlikely that such an effect has been very large. One reason is simply that the cross-sectional patterns of method use noted above are not very different between Internet users and nonusers; another is that Internet search had only attained 15 percent of unemployed jobseekers by December 1998. Finally, in some cases the time trends run in an opposite direction to what is

suggested by cross-sectional patterns: use of public employment agencies declined during the 1994–99 period despite being overrepresented among Internet jobseekers in December 1998. Certainly, it is premature to conclude that the expansion of the Internet has caused a decline in the use of public employment agencies. □

Notes

¹ For a list of the sites, see <http://www.internetpost.com/Internetpost/AlphaList.html> (visited July 19, 2000).

² The questions on Internet job search were part of a series of longer questions about general Internet use. The December 1998 CPS Computer and Internet Use Supplement questionnaire is available online at <http://www.bls.census.gov/cps/computer/1998/smethdocz.htm> (visited Oct. 5, 2000).

³ To be classified as an “active” jobseeker, the individual must report using at least one of the nine traditional search methods (see bulleted list on page 3).

⁴ See table 6, column 3. The small differences between Internet search (15.0 percent) and “placed or answered ads” (14.5 percent), and between Internet search and “friends and relatives” are not, however, statistically significant (t-statistics for a test of zero difference are 0.44 and 1.23 respectively). The four remaining differences are highly significant.

⁵ See Joseph R. Meisenheimer and Randy Ilg, “Looking for a better job: job-search activity of the employed,” *Monthly Labor Review*, September 2000, pp. 3–14.

⁶ Carl Rosenfeld, “The extent of job search by employed workers,” *Monthly Labor Review*, March 1977, pp. 58–62. See also “Looking for a job while employed,” Bureau of Labor Statistics Report 97-14, November 1977.

⁷ Matthew Black, “An Empirical Test of the Theory of On-the-Job Search,” *Journal of Human Resources*, Winter 1981, pp. 129–40; C. A. Pissaridies and J. Wadsworth, “On-the-job search: some empirical evidence from Britain,” *European Economic Review*,

February 1994, pp. 385–401.

⁸ The actual numbers for 1990–95 are 4.96, 4.99, 5.06, 5.42, 5.57, and 5.46 respectively (see Statistics Canada, *The Labour Force*, 1990–1995). The figure for December 1995, which is most directly comparable with our December 1998 CPS data, is 4.84. Examination of long-term trends in this series shows a secular increase, from 2.24 percent in 1977, most of which however occurs before 1989. Further information may be found by researching various issues of Statistics Canada, *The Labour Force*, 1977–1995, catalogue no. 71–001.

⁹ Clearly, more recent U.S. data on job search by employed workers would constitute more convincing evidence on this point. We are not aware of any such data.

¹⁰ When discussing statistics for the employed in what follows, we refer (unless otherwise indicated) to the employed and “at work.” In almost all cases, the employed but “temporarily absent” are very similar to the employed.

¹¹ Contrary to what one might expect from a tightening labor market, this does not reflect a decrease in the number of methods used over the period in question. The average number of methods used, by year, were 1.76, 1.82, 1.82, 1.79, 1.75, and 1.71 from 1994 to 1999. Instead, large increases in the use of the two earlier methods seem to be counterbalanced by small decreases in all the rest.

¹² Michelle Ports documents this cyclical pattern in chart 3 of “Trends in job search methods, 1970–92,” *Monthly Labor Review*, October 1993, pp. 63–67.

¹³ *Ibid*, chart 2.