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ABSTRACT

A study examined the impact of recruitment policies on the flow of job applicants and quality of new workers. The process of determining a recruitment and selection strategy appeared to be one of considering the trade-offs between engaging in extensive search (high number of applicants per offer) or intensive search (great amount of time spent per applicant) while minimizing the indirect costs of hiring. The number of job-seeker contacts was more responsive to variables describing the probability and number of vacancies than measures of attractiveness of the job. Most firms had a sufficiently autonomous flow of job seekers to avoid undertaking new recruitment efforts each time they had a vacancy. It appeared that since competition forces all firms to pay wages roughly equal to the market's assessment of a worker's generalized productivity, a firm can profit from hiring a worker only if (1) it has information about the worker not available to other employers that implies the worker is better than the market seems to think or (2) the worker has a comparative advantage in working at that firm. (Appendixes to this report include the second-wave report of the National Survey of Employer Hiring and Training Practices and the Employer Demand survey instrument.) (MN)

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RECRUITING WORKERS: HOW RECRUITMENT POLICIES AFFECT THE FLOW OF APPLICANTS AND QUALITY OF NEW WORKERS

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FOREWORD

Very little is known about the magnitude and character of employer recruitment and hiring policies and how these policies influence the quality of the employer/worker matches that result. To address these and other issues, the National Center for Research in Vocational Education commissioned the Gallup Organization to conduct telephone interviews with over 3,500 employers. This paper is one of a series of papers analyzing these data. Future work will refine and elaborate on the models presented in this paper and explore the impact of other employer and employee characteristics on employer recruitment and search.

We wish to express gratitude to the National Commission for Employment Policy for sponsoring this study and to Everett Crawford, who served as project officer, for his guidance and support. We wish also to express our thanks to the National Institute of Education for funding the data collection effort that provided the database for this study.

This research would not have been possible without the cooperation and assistance of 3,500 employers who so graciously responded to our telephone interview. We greatly appreciate the time and the insights that these very busy men and women contributed to the study.

The project is also indebted to the many employers who assisted in the design of the interview instrument. In this regard, special thanks are due to Jim Medoff, Harvard University; Frank Stafford, Chairman of the Department of Economics, University of Michigan; Clifford Roe, Supervisor of Salaried Union Relations and EEO Administrator (retired), Buffalo Divisions, Westinghouse Electric Corporation, and William J. Dennis, Research Director, National Federation of Independent Business. Wilson S. Johnson, President of the National Federation of Independent Business, was very supportive of the study and graciously provided a letter of introduction that we sent to all the employers selected for an interview.

Thanks are extended to the staff at the Gallup Organization who supervised the telephone survey: Mitchell Cohen, Nancy Nygreen, Peggy Ashton, and Corinne Kyle. Reviewers of an earlier draft of this report, John McCall, Lawrence Kahn, John Gardner, and Linda Lotto, made many helpful suggestions. Terrence Davey did the programming and database preparation; the manuscript was edited by Janet Kiplinger and Sharon Fain of the National Center's Editorial staff, and it was typed by Vera Mueller and Cathy Jones. A nontechnical summary version of this paper with the title, "Recruiting Workers: Summary of Findings and Policy Implications," is available.

Robert E. Taylor
Executive Director
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EXECUTIVE SUMMARY

Employers invest resources in the recruitment and selection process because they expect the investment to enable them to hire higher-quality workers. Choosing the optimal recruitment and selection strategy involves weighing the benefits of each strategy against its cost. Thus, a theory of the choice of recruitment and selection strategies must be based on a knowledge of how the benefits and costs vary from firm to firm. The task of obtaining this knowledge is divided into three parts:

- An examination of the costs of recruiting and selecting new employees
- An examination of the effects of the firm's overall recruitment strategy on the flow of job-seeker contacts and applications received
- An examination of the impact of the firm's overall recruitment strategy on the success of the employer/worker match

The sequence of examination is to determine (1) how firms choose their recruitment and selection strategies, (2) how their choices influence the demand side of the market, and (3) how successful is the outcome of the process. After gaining an understanding of the behaviors of employers through theoretical investigation and empirical confirmation, implications for employment and training policymakers can be derived.

Costs of Recruitment and Selection

The process of determining a recruitment and selection strategy is one of considering the trade-offs between engaging in extensive search (high number of applicants per offer) or intensive search (high amount of time spent per applicant), while minimizing the indirect costs of hiring, such as foregone productivity due to a vacancy going unfilled. Empirical findings from an analysis of the project's 1982 employer survey of about thirty-five hundred employers are as follows:

- Larger firms, due to economies of scale in interviewing and screening applicants, engage in more extensive search but less intensive search. Total hours spent to fill a position are higher for larger firms.
- Increases in flow of applicants, by reducing indirect hiring costs, result in more extensive search, with some substitution of extensive for intensive search.

- Employers choose less intensive and extensive search to fill part-time and temporary or seasonal positions, as the expected gain to additional search is lower for employment matches of shorter tenure.
- Employers offering more training search more, both extensively and intensively, to ensure an expected return on the training that compensates for the investment costs incurred.
- Employers hiring persons who will acquire training useful to other employers will engage in more extensive (though not intensive) search to find individuals less likely to leave if the number of competing employers is large.
- Employers hiring more than one employee at a time typically search less extensively and intensively, have a greater proportion of their job offers turned down and, consequently, seem to be forced to lower their hiring standards. This finding is consistent with the hypothesis that adjustment costs rise with the speed of adjustment.
- Employers with a greater percentage of their work force unionized surprisingly spend no more hours searching, although they do see more applicants per interview.
- Employers with advance notice of a vacancy search more extensively, because they can avoid the indirect costs of having a position without a person working in it.

Factors affecting intensive search, as measured by the likelihood that an individual is reference-checked, were also examined. Among the findings are the following:

- Although larger firms spend fewer hours per applicant, they are more likely to check applicants' references.
- There is a trade-off between the proportion of applicants whose references are checked (a measure of intensive search) and the number of applicants seen per employment offer (a measure of extensive search).

Factors affecting the likelihood that an interviewee is a prior applicant are also considered, and differences in the source of a new hire were investigated. Findings include the following:

- Employers who retain records of applicants and call in more prior applicants per interview have on hours spent per applicant.
- Larger firms are more likely to call in prior applicants for an interview.
- Informal methods, such as referrals by friends, relatives, or walk-ins, are associated with those positions being filled in a shorter time after seeing few applicants.

- Use of public and private employment agencies to obtain a new hire is more likely for larger firms.

Flow of Applicants

The study used a theoretical characterization of the job search process proposed by Weitzman (1979) to analyze the effects of recruitment strategy choice on the flow of applicants to a firm. This flow is an important variable for firms, because it measures the demand for employment at the firm. The high proportion of explained variance obtained in the empirical work and the tendency of the empirical findings to support the predictions of the theory strongly support the view that job search is systematic rather than random.

In general, the number of job-seeker contacts was found to be more responsive to variables describing the probability and number of vacancies (e.g., establishment size, vacancies, new hire rate, proportion of part-time jobs, proportion of applicants under age twenty-five) than measures of the attractiveness of the job (e.g., wage, incentive payments, firm size, general training, and job security). Measurement error may have been a more serious problem for the job attractiveness variables, however, than for the variables characterizing the probability of a vacancy. One cannot view these results as a strong refutation of Weitzman's prediction that a firm's place in the search order will be more sensitive to the attractiveness of its jobs than to the probability of a job offer. At the time of the survey, the average unemployment rate in the labor markets containing interviewed employers was 10.5 percent. The observed behavior may have been unique to a high-unemployment environment.

Most firms have a sufficiently autonomous flow of job seekers and a backlog of past applications that they do not need to undertake new recruitment efforts each time they have a vacancy. As a result, many vacancies are filled without any announcement of their existence outside the firm. Of the firms with vacancies, only 35 percent had advertised the job in the newspapers, 25 percent had requested referrals from the state employment service, and 51 percent had announced it to their current employees. The total flow of job-seeker contacts responds to the current recruitment efforts of the employer,

but only to a modest extent. Announcing a vacancy to current employees increases telephone contacts by 20 percent, visits by 12 percent, and applications by 24 percent. Asking for referrals from a state employment service increases phone calls by 50 percent, but visits rise only 10 percent and applications hardly change at all. Placing an ad in the newspapers increases calls and visits by 52-53 percent and the number of applications filed by 71 percent. Encouraging people who call about job openings to visit the firm does increase the number of visits received, but only by about 30 percent. The flow of job-seeker contacts responds to the existence and number of vacancies and to efforts to publicize them, but the elasticity of response is such that filling large numbers of vacancies all at the same time requires either a major recruitment effort or some lowering of hiring standards.

Success of the New Hire

A theoretical model has been developed of how the recruitment source influences the productivity and profitability--the worker output minus training costs and wages paid--of a new hire. The theory implies that since competition forces all firms to pay wages roughly equal to the market's assessment of a worker's generalized productivity, a firm can profit from hiring a worker only if (1) it has information about the worker not available to other employers that implies the worker is better than the market seems to think, or if (2) the worker has a comparative advantage in working at that firm. The following specific hypotheses were derived from this general proposition:

- Employer referrals and new hires that are friends or relatives of a current employee require less training, are more productive, and generate more profit for the firm than walk-ins.
- Employment service and school referrals require more training, are less productive, and are generally less profitable new hires than walk-ins.
- Because of the high fees charged by private employment agencies, employers will only hire referrals from these agencies when the new hire is expected to be more productive, require less training, and/or can be paid lower wages than other job applicants.
- Union referrals are paid more, are more productive, but are less profitable to the firm.

The hypotheses regarding the effects of private employment agencies were decisively rejected in all models. The remaining hypotheses specified the signs of thirty-eight regression coefficients in each of two specifications. In the regressions using a preferred model specification, only three coefficients had the wrong sign and ten of the thirty-eight coefficients were significant at the 10 percent level or better. In the regressions using a less desirable specification, only five coefficients had the wrong sign and six of the coefficients were significant at the 10 percent level or better. If controls for credentials are dropped from the model, only four coefficients have the wrong sign and sixteen of the thirty-eight coefficients are statistically significant at the 12 percent level or better. Except for predictions about the effects of private employment agencies, these results strongly support the theory and the hypotheses developed from it.

Policy Implications

The search costs involved in the labor market exchange form the underlying basis for policy intervention in the process. Economic efficiency can be gained from public or private intermediaries if search costs are decreased (providing that the net gain to the demander and/or supplier exceeds the costs of the policy intervention). The specific areas of public policy that may be addressed by this research are (1) the referral process of the employment services, (2) job search counseling, and (3) the design of jobs or wage subsidy policies.

A major empirical result of this study is the documentation and justification of employers' reliance on informal mechanisms in their search for employees. Referrals from other employers and referrals from friends or acquaintances result in more productive workers. Thus, the employment services must overcome an additional hurdle--an employer preference for informal recruitment channels that has been justified by increased hirees' productivity. Through informal channels, employers gain additional information about applicants beyond what can be observed in application and interview processes, because the screening process has partly been performed by a "trusted" third party.

This preference acts to limit the market penetration of any program for finding employment for the disadvantaged that depends upon an impersonal labor market intermediary, such as the employment services or a Comprehensive Employment Training Act (CETA) subcontractor. The results indicate that the limitation can best be overcome by gaining employers' support and confidence through more careful screening of referrals to make sure that the individuals referred are well suited for the job. Thorough and honest assessments of each job seeker's job readiness and skills inventory must be performed and, where necessary, individuals should be referred to the appropriate training resource.

Job search counseling is one of the mechanisms by which public agencies attempt to help unskilled workers find jobs, aside from direct referrals. But it has been documented that only certain kinds of counseling can help clients get jobs that allow them to get off the rolls of government income maintenance programs. An important outcome of this study has been to document the significant discrepancy between the modes of job search used by workers and employers. The data show that job seekers place far too much reliance on newspaper ads and the local employment services, and not enough reliance on friends, acquaintances, and relatives. Not all job seekers have good contacts, so they need to be advised that direct contact with employers (walk-ins) is the next preferred referral source by employers.

Findings on search modes by industry, occupation, size of firm, and extensive or intensive natures of the search should aid counselors in encouraging job seekers to intensify and redirect their job search efforts toward the modes of search that best correspond to the recruitment strategies of the employers they are targeting, or to the recruitment strategies that are used by employers with "good" jobs.

Finally, policymakers have used various subsidy approaches to improve the employability of unskilled workers. The research has documented an employer preference for informal recruitment methods and a reluctance to deal with government agencies. Since participation in Targeted Jobs Tax Credit (TJTC) and CETA's on-the-job training (OJT) generally has required firms to give up some of the privacy and informality in hiring that they prefer, there appears to be a definite barrier to widespread employer use of these subsidy programs.

The problem can be minimized by (1) simplifying eligibility rules so that employers can identify who is eligible on their own, (2) making applications for certification easy, and (3) guaranteeing confidentiality of the files. The only ways to eliminate the problem, however, may be to use a characteristic of the job, such as its wage rate, to define a firm's eligibility, and to substitute self-certification with an audit for prior government certification.

Public policymakers are not the only potential beneficiaries of this research. An understanding of the impact of recruitment strategies on the flow of applicants to a firm and on the productivity of a new hire may provide useful information for employers for improving their strategies. Similarly, job seekers can benefit from an understanding of employer search behavior. By modifying their own search techniques to match employers' behaviors, job seekers can save significant time and cost in finding a better job.

As always, data limitations require that some caveats be brought to the analysis. Nevertheless, the policy implications reported here rest on empirical confirmation of theory that is well grounded in the literature.

I. INTRODUCTION

1.1 Conceptual Overview

Classical economic theory divides participants in labor markets into two categories, employers and potential employees. Employers, the demanders of labor services, engage in the production of goods and place a value on attaining the rights to labor services, a value derived from the increment in output the employer can achieve through the use of such services. Employees, the current owners of labor services, place a value on retaining the rights to their labor services. The labor market in this classical theory is the place where employers and current owners of labor services exchange these rights. Exchange rests on the postulate that individuals act in their own self-interest. This implies that employers who purchase the rights to labor services value such services more than the current owners, the suppliers. The gains to exchange, divided between employers and current owners, provide both with the incentive for exchange.

A central feature of classical economic theory is the characterization of a labor market as a place where employers and current owners of labor services contract to exchange at zero cost. Yet, resources are committed in arranging and transacting market exchanges. As Coase (1960) stated:

> In order to carry out a market transaction it is necessary to discover who it is that one wishes to deal with, to inform people that one wishes to deal, and on what terms, to conduct negotiations leading up to a bargain, to draw up the contract, to undertake the inspection needed to make sure that the terms of the contract are being observed, and so on. (p. 14)

Observations of vacancies or unemployed individuals and the existence of such institutions as state employment services and private employment agencies are ample testimony to Coase's view that resources are used to arrange labor market exchanges. The process by which labor contracts are formed is important not only because it involves the investment of resources but also because it determines the quality of the match, or mismatch, between workers and employers.

An underlying reason for the costliness of transactions is that there exists "imperfect information." For labor markets, the following conditions may hold:

- The demander for and supplier of a particular type of labor service do not know the location of individuals with which an exchange of labor services is possible.
- If a demander for and supplier of the same type of labor services meet, the price at which an exchange may occur is negotiated with each individual, uncertain of alternative agreements with other individuals that could be arranged.
- If an exchange is agreed upon, each individual is initially uncertain of what, in fact, has been exchanged.

Given these conditions, individual participants in the labor market choose to engage in search (gather information) to discover potential gains to exchange.

The system whereby employers and potential employees seek each other is represented in figure 1. Employers use specific recruitment strategies (A) to seek out job applicants, whereas workers use job search methods (E) to look for potential employers. Those firms and workers that use corresponding strategies meet each other and a selection decision (B) is made. The employers learn whether their selections were good only later, when they have gained considerable experience with the employees (C). The employers' choices of their recruitment strategies (A) and selection standards are based upon their perceptions of the effectiveness of these strategies (D), perceptions that have been developed by observing (dotted arrows) the success of these strategies in the past. Job seekers select their job search methods on the basis of their perceptions (F) of the connections between E, B and C.

The remainder of this chapter provides a partial review of the existing literature concerning the search strategies of both job seekers and employers. The review serves to highlight the fact that, while an extensive literature exists on the search behavior of job seekers, little attention has been given to employers' search behaviors--specifically, the choice of the recruitment and selection strategies. Yet, as figure 1 indicates, a matching of jobs and workers involves the interaction of workers' job search activities and employers' hiring activities. To understand this interaction more fully, evidence concerning the neglected side of the worker-employer match (i.e., new

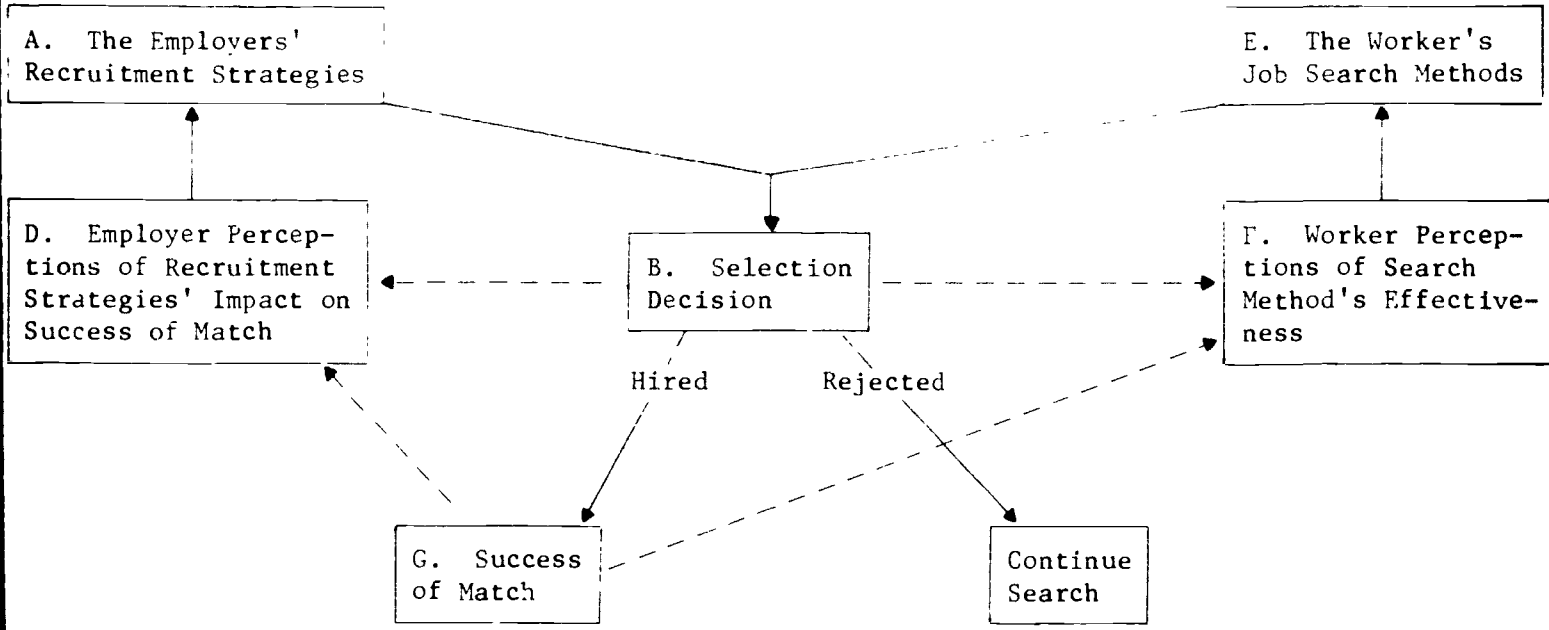

Figure 1. The search behavior of employers and workers

evidence on employers' hiring activities) is needed. How do employers search? Why do different employers choose different ways of filling a vacancy? What are the reasons for differences across firms in the amounts of resources devoted to filling a vacancy or finding employment? The aim of this report is to investigate such questions.

1.2 Literature Review

Some time ago, Stigler (1961) noted the importance of "the search for information," an area that had up to that point been neglected in economics. In a companion piece focused on the labor market, Stigler (1962) emphasized this search for information as involving not only a worker job search, but also employer search, a search that "involves more than the identification of potential workers: They must be 'processed' to a degree set by the personnel practices, and there are training costs (including low productivity) for a time" (p. 102). Subsequent to Stigler's seminal works, McCall (1970) has introduced the notion of an optimal search strategy. For the job seeker, this involves a reservation wage criterion: A job seeker, sampling from the distribution of wage offers, will accept an employment offer only if it is above the reservation wage and will continue searching if the offer is below the reservation wage.

An extensive literature has developed from the works of Stigler and McCall. A part of this literature retains McCall's characterization of the optimal search strategy of the unemployed worker as limited to a choice of a reservation wage or a sequence of reservation wages. In this context, modifications of Stigler's and McCall's work include Salop (1973), who introduced the idea of systematic search, which arises when an individual has prior information on the nature and likelihood of an employment offer from different employers. Kohn and Shavell (1974) considered the implications of risk aversion on the search strategies of job seekers. Rothschild (1974) has examined the optimal search strategies that arise when job seekers do not know the probability distributions of employment offers from which they are searching. Fishe's (1982) research is an example of an empirical test of hypotheses derived from this optimal job search strategy literature.

A second group of papers has modified McCall's work on optimal search to permit the choice of unemployed individuals to choose an intensity of search as well as a reservation wage. Lippman and McCall (1976), Mortensen (1977), Barron and Mellow (1979), Yoon (1981) and Keeley and Robbins (1982) are examples of research in which the individual's choice of search time each period is considered. Evidence on the effect of search strategy--reservation wage and intensity of search--on the subsequent labor force strategy of the unemployed job seeker is provided in Barron and Mellow (1981).

A number of other modifications of McCall's original study of the optimal search strategy of job seekers also exist. Optimal job search of employed workers has been considered by Barron and McCafferty (1977), Black (1980), and Kahn and Low (1982). An optimal search strategy that may involve periods of both unemployed search and search while employed has been examined by Burdett (1978). Borjas and Goldberg (1978) and Johnson (1978) consider search behavior when not all information concerning the employment offer is available to the job seeker at the time the decision to accept or reject the offer is made.

Along different lines, a concern with the partial analysis approach taken by many of the papers in the job search area has led a number of authors (e.g., MacMinn 1980, Reinganum 1979) to derive an endogenous nontrivial equilibrium wage offer distribution consistent with optimal job search strategy.

This review of the search literature, although incomplete, indicates that most research on labor market search by and large has focussed on characterizing workers' search behavior. Aside from papers by Oi (1962) and Stigler (1962), only the book by Rees and Shultz (1970) stands out as an investigation of employer search behavior.[1] Thus, the next chapter introduces a theoretical framework for employer search. Subsequent chapters examine the actual recruitment and selection strategies chosen by employers.

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1. Recent exceptions include Barron and Mellow (1982) and Barron, Bishop, and Dunkelberg (1982).

II. EMPLOYERS' CHOICE OF RECRUITMENT AND SELECTION STRATEGIES: A THEORETICAL FRAMEWORK

2.1 Introduction

> The hiring of an employee is a transaction analogous in size to the purchase of a car or even a house by a consumer and justifies substantial costs of search. (Rees 1966, p. 561)

Recruitment and selection strategies and their associated costs vary substantially across employers and positions and influence the extent to which labor is viewed as a fixed factor of production.[2] The purpose of this chapter is to introduce a theoretical framework for considering how hiring activities differ across employers and positions.

Let V denote the true present value of labor services offered by a new employee. To the employer, V is a random variable whose distribution can be changed by the acquisition of information. This acquisition of information is accomplished in the hiring process, and it can be divided into several steps.[3]

Consider an employer who seeks to fill a position. The employer has each job seeker fill out an application form, which the employer screens to obtain the set of information on each applicant, as denoted by vector I_s. The set

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2. Oi (1962), in a seminal paper, develops the implications of fixity of the labor input. Analogous to Tobin's (1969) "q" in capital investment decisions, Oi's "l" measures the degree of fixity of the labor input by the difference between an employee's value of marginal product and the wage. The discounted difference reflects, in part, hiring costs.

3. In the following discussion, we rule out employment contracts that specify wage payments contingent on the discovered value of labor services. Consequently, there is a gain to the employer from gathering information prior to hiring about the true value of labor services offered by a particular applicant and across applicants. Contingent compensation schemes require that each party know the realized value to the other party of the exchange. But, as Hashimoto and Yu (1980), Hashimoto (1981), and Williamson, Wachter, and Harris (1975) have stressed, accurate information on the gains received by the other party is often costly to obtain. In part, this is due to the incentive each party has to misrepresent the gain (i.e., "opportunistic" behavior; see Williamson, Wachter, and Harris (1975). As a consequence, we do not focus on contingent schemes as part of the compensation structure. Further, we assume that the wage is fixed during the hiring process. This second assumption rules out the employer offering each applicant an employment contract with appropriate differences in compensation to reflect differences in expected value of labor services provided.

of information obtained is summarized by a screening index of qualifications, $Q_s(I_s)$. Let $E(V|Q_s(I_s)\geq q_s)$ define the expected value of labor services offered by individuals with a screening index of qualifications at least as great as q_s. Application forms provide useful information in predicting the expected present value of labor services offered, in that $E(V|Q_s(I_s)\geq q_s)$ is increasing in q_s^*. Only individuals with a screening qualification index exceeding the reservation screening index, q_s, are offered an interview.[4]

During the interview, the set of information denoted by vector I_i is obtained. This set of information is summarized by an interview index of qualifications, $Q_i(I_i)$. For individuals who are interviewed (screening qualifications exceed q_s^*), let $E(V|Q_i(I_i)\geq q_i)$ denote the expected value of labor services offered by individuals with an interview index of qualifications at least as great as q_i. The information produced by an interview is useful in predicting the expected present value of labor services offered, in that $E(V|Q_i(I_i)\geq q_i)$ is increasing in q_i. Only individuals with an interview index of qualifications at least as great as q_i^*, the reservation interview index, are offered employment.

As Rees (1970) points out, the screening and interview steps of the hiring process involve information-gathering activities of an employer, which can be separated into search at the extensive margin and at the intensive margin. As Rees states, "A buyer can search at the extensive margin by getting a quotation from one more seller. He can search at the intensive margin by getting additional information concerning an offer already received" (p. 560). In the context of employer search, extensive search will be classified by the number of applicants an employer screens prior to an employment offer (APERO).

Extensive search may be decomposed into the number of applicants per applicant interviewed (APERINT) times the number of applicants interviewed per employment offer (INTPERO). That is--

(1)	number of applicants per employment offer, APERO	=	number of applicants per interview, APERINT	.	number interviewed per employment offer, INTPERO

4. This sequence of screening applicants prior to interviewing implies that the cost to an employer of an interview is high relative to the cost of screening an applicant using an application form.

Associated with extensive search are indirect or opportunity costs when a position remains vacant.

Search at the intensive margin is measured by the direct expenditures an employer makes, per applicant, in terms of personnel hours devoted to recruiting, screening, and interviewing an applicant. Let HRSPERA denote this measure of intensive search. The product of the measures of extensive and intensive search, APERO and HRSPERA, respectively, and the number of offers made per individual hired (OFFPERH) provides a measure of total direct hiring costs per new hire (HRSPERH).

The objective of the employer is to maximize the expected present value of labor services of the person hired E(V), subject to the direct and indirect hiring costs implied by the various information-gathering activities. The next four sections of this chapter discuss various measures of intensive and extensive search that determine direct hiring costs and their relationship to each other. Also considered are measures of indirect hiring costs. The chapter that then follows examines how different characteristics of the employer or the position influence the choice of hiring activities and the associated costs through their effects on the marginal gains or costs to information-gathering activities.

2.2 Employer Extensive Search

In the screening and interviewing steps of the hiring process, an employer gathers information on the value of labor services offered at both an extensive and an intensive margin. At the extensive margin, a higher reservation screening index of qualifications, q_s^*, increases the expected number of applicants screened prior to an interview, APERINT. It also increases the total expected number of individuals screened if the expected number of applicants interviewed prior to an offer of employment, INTPERO, is held constant.[5] Similarly, a higher reservation interview index of qualifications, q_i^*, raises the information gathered at the extensive margin in that

5. This statement presumes the reservation interview index of qualifications, q_i^*, is appropriately changed (increased), since with more extensive screening it is more likely that an individual interviewed will have qualifications that equal or exceed a given reservation interview index of qualifications.

it increases the expected number of applicants interviewed prior to an employment offer, INTPERO, and thus increases the total expected number of applicants per employment offer, APERO = APERINT · INTPERO.[6] Naturally, more extensive screening or interviewing of applicants increases the expected value of labor services supplied by the individual who is offered employment, E(V).

An employer survey sponsored by the National Institute of Education and the National Center for Research in Vocational Education was conducted between February and June, 1982 that provides a basis for analyzing employer search and hiring costs.[7] Each employer surveyed was asked about the screening and interviewing activity associated with the last employee hired prior to August 1981.[8] The 2,264 employers who provided answers to a series of questions concerning this last person hired make up the sample of employers whose hiring

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6. It is assumed that in the screening and interviewing process, decision rules made prior to search with respect to information sets and reservation qualification indices are not altered during the hiring process.

7. The survey represents the second wave of a two-wave longitudinal survey of employers from selected geographic areas across the country. The first wave, not utilized in this study, was funded by the U.S. Department of Labor to collect data on the area-wide labor market effects of its Employment Opportunity Pilot Project (EOPP). The survey encompassed ten EOPP pilot sites and eighteen comparison sites selected for their similarity to the pilot sites. The survey design specified a strategy of oversampling firms with a relatively high proportion of low-wage workers. The second wave made an attempt to interview all of the respondents to the first-wave survey. About 70 percent of the original respondents completed surveys for the second wave. The data collected by this second-wave survey on the circumstances surrounding a recently hired worker are more extensive than those available in the first wave, or in any other data set known to the authors.

8. In the bulk of the sample the respondent was the owner/manager of the establishment. In large organizations, the primary respondent was the person in charge of hiring, generally the personnel officer. When the primary respondent was unable to answer a question, he or she was asked if someone else in the organization would have the information and that part of the interview was completed with this other official. The other respondents that resulted from this process were: controllers, wage and salary administrators, and line supervisors (for questions about a particular recent hire). The questionnaire used is included as appendix B.

activity is to be examined.[9] These employers answered questions on the number of individuals who applied for the position; the number interviewed; the hours spent recruiting, screening, and interviewing applicants for the position, and the number of offers made. From answers to such questions, measures of extensive search, intensive search, and hiring costs can be computed.[10] Table 1 presents measures of extensive search categorized by employers' industrial classifications and the occupational classification of positions filled. The number of people who applied for a position, per person offered employment, is presented in the first column. The second and third columns of the table contain the two components of the number of applicants per employment offer: the number interviewed divided by the number of employment offers and the ratio of the number of applicants and the number interviewed.

To see whether or not there is, on average, a trade-off between an employer's choice of the number of applicants interviewed and the number of applicants per interview, consider the relationship between APERO and APERINT. Since APERO $\equiv$ INTPERO $\cdot$ APERINT, if an employer's choice of the number of applicants per applicant interviewed (APERINT) and the number of applicants interviewed per offer (INTPERO) are not correlated, then an estimation of the equation--

$$(2) \quad \ln(\text{APERO}) = a + b \ln(\text{APERINT}) + u$$

will yield an estimated coefficient, $\hat{b}$, not significantly different from 1. On the other hand, if there is a trade-off between INTPERO and APERINT (e.g., $\text{INTPERO} = c(\text{APERINT})^d$ with $d < 0$), then the estimation of equation (2) will yield a coefficient $\hat{b} = 1 + \hat{d}$ less than 1. Equation (3) reports the regression results, as follows:

$$(3) \quad \ln(\text{APERO}) = \underset{(40.35)}{.96} + \underset{(30.18)}{.91} \ln(\text{APERINT}) \qquad R^2 = .29, \; N = 2264$$

9. A total of 447 employers responded that they had hired a new employee but did not have available complete information on the hiring process, and so were excluded from the sample.

10. Note that the sample is representative of the hiring activity of a group of employers, not the hiring activity associated with the employment of a group of job seekers during a specified time frame. The sample likely underrepresents larger employers if the employment of a group of job seekers over a specified period of time were to be considered.

TABLE 1

EXTENSIVE SEARCH

	Applicants per Offer, Interviews per Offer and Applicant per Interview by Industry				
	Applicants per Offer	Interviews per Offer	Applicants per Interview	Number of Employers	Number of Employees per Employer
Industry					
Mining and Agriculture	5.64	2.56	2.07	42	131
Construction	5.06	3.99	1.76	154	38
Manufacturing	13.18	3.97	8.75	275	167
Transportation and Utilities	10.55	4.41	2.67	96	94
Wholesale	8.79	6.19	1.57	221	45
Retail	8.12	4.37	2.36	712	41
Fin., Ins., and Real Estate	8.04	4.45	1.86	165	69
Services	8.31	4.50	2.17	599	46
All	8.69	4.48	2.93	2264	64
Occupation					
Professional or Technical	7.03	4.28	1.58	183	64
Managerial	7.83	4.05	2.24	85	74
Clerical	10.22	5.81	1.98	539	66
Sales	9.64	5.19	2.18	308	39
Service	8.54	3.86	2.99	427	57
Blue Collar	7.77	3.66	4.35	722	75
All	8.69	4.48	2.93	2264	64

The numbers in parentheses are t-statistics. Equation (3) does not suggest a sizable trade-off between the number of applicants per interview and the number of interviews per offer. A 10 percent increase in the number of applicants per interview reduces the number of interviews per offer by less than 1 percent.

2.3 Employer Intensive Search

At the intensive margin, the employer can alter the set of information, I_s, obtained on each applicant from application forms and/or the set of information, I_i, obtained from interviewing an individual. Holding constant the expected number of individuals screened per interview, APERINT, and the expected number of applicants interviewed per employment offer, INTPERO, increases in any component of the information set gathered at either the application-form or interviewing stage raises the expected present value of labor services supplied by the individual who is hired, E(V), by improving the accuracy of the prediction of the value of labor services provided by any given applicant.

With respect to the intensive margins, let the vectors p_s and p_i denote the prices of information obtained via an application form or an interview, respectively. Then $p_s \cdot I_s$ represents the recruiting and screening expenditures incurred by the employer to obtain and review one application form, and $p_i I_i$ is the expenditure incurred by the employer in interviewing one applicant. A measure of intensive search that combines both $p_s \cdot I_s$ and $p_i \cdot I_i$ is HRSPERA, the average number of person-hours spent by company personnel recruiting, screening, and interviewing an applicant for a position. That is--

$$(4) \quad HRSPERA = (p_s \cdot I_s + p_i \cdot I_i \cdot (1/APERINT))$$

where (1/APERINT) denotes the likelihood that an applicant is interviewed. HRSPERA is obtained by simply dividing the total hours reported spent by company personnel recruiting screening, and interviewing applicants by the number of applicants for the position.

According to equation (4), HRSPERA not only reflects intensive search choices but also involves APERINT, a component of extensive search that

reflects the number of applicants per interview. The choice to interview another applicant (a reduction in the applicants per interview, APERINT) can increase intensive search, as measured by the time spent per applicant, HRSPERA, if $p_i I_i > 0$ and if employers who are more likely to interview an applicant do not choose sufficiently lower intensive search expenditures, $p_s \cdot I_s$ and/or $p_i \cdot I_i$.

To see whether or not there is, on average, a direct link across employers in the choice of the likelihood of an interview, (1/APERINT), and hiring costs per applicant, HRSPERA, the relationship between the two was estimated. It is assumed that the screening cost per applicant, $p_s I_s$, is small and independent of APERINT, and that $p_i I_i$ is related to the likelihood that an applicant is interviewed, in that $p_i I_i = \theta \cdot (1/APERINT)^{\Psi}$. Thus, taking the logarithm of equation (4), the equation to be estimated takes the following form:

(5) $\ln(HRSPERA) = \theta + \Psi(1 \cdot (1/APERINT)) + u$

The regression results are as follows:

(6) $\ln(HRSPERA) = \underset{}{.32} + \underset{(14.00)}{.74} \underset{(25.28)}{\ln(1/APERINT)}$ $\quad R^2 = .22$, $N = 2268$

The numbers in parentheses are t-statistics. Equation (6) suggests that, for a given number of applicants, employers who choose to interview a greater proportion incur greater total costs per applicant. Specifically, a 10 percent increase in the likelihood of an interview (interviews per applicant = 1/APERINT) increases the total hours spent per applicant by 7.4 percent. However, the less than one coefficient on ln(1/APERINT) indicates that, although the total direct hiring cost per applicant rises with an increase in the likelihood of an interview, intensive search in the form of hours spent per interview, $p_i I_i$, falls.

Intensive and extensive search measures, HRSPERA, APERINT, and INTPERO, are defined in such a way that they are separate components of the total hours spent to fill a position, HRSPERH. That is--

(7) HRSPERH $\equiv$ HRSPERA $\cdot$ APERINT $\cdot$ INTPERO $\cdot$ OFFPERH

where OFFPERH denotes the ratio of the number of offers to the number hired.

Table 2 indicates the differences across industries and occupations in total hiring costs, HRSPERH, hours spent per applicant, HRSPERA, and the number of offers per hire, OFFPERH. Also reported in table 2 is the number of reference checks with a previous employer that the searching employer made per person hired. This can be viewed as a complementary measure of intensive search.

2.4 Extensive versus Intensive Search

In earlier sections of this chapter, measures of extensive and intensive search were introduced. It is useful to see whether or not there is, on average, a trade-off between extensive and intensive search, specifically by considering the correlation between intensive search (as measured by the hours spent per applicant, HRSPERA), and the two components of extensive search (the number of applicants seen per interview, APERINT, and the number interviewed per employment offer, INTPERO). If intensive and extensive search choices are independent, then an estimation of the logarithm of equation (7), excluding ln(HRSPERA) and ln(OFFPERH), should yield estimates of the coefficients on ln(INTPERO) and ln(APERINT) not significantly different from 1. On the other hand, if there is a logarithmic relationship between HRSPERA and APERINT, as suggested by equation (6), and similarly a logarithmic relationship between HRSPERA and INTPERO, then the coefficients of ln(APERINT) and of ln(INTPERO) should be less than 1. The regression results are as follows:

$$(8)\quad \ln(\text{HRSPERH}) = \underset{(15.68)}{.40} + \underset{(8.15)}{.89}\ \ln(\text{INTPERO}) + \underset{(42.52)}{.24}\ \ln(\text{APERINT})$$

$$R^2 = .45$$
$$N = 2264$$

where the numbers in parentheses are t-statistics.

Equation (8) indicates a substantial inverse relationship between intensive and extensive search. Specifically, a 10 percent increase in the number of applicants seen per applicant interviewed implies a decrease of 7.6 percent in the hours spent per applicant; also, a 10 percent increase in the number of applicants interviewed per employment offer reduces the hours spent per applicant by 1.1 percent.

TABLE 2

INTENSIVE SEARCH

	Search Hours, Reference Checks, and Acceptance Rates by Industry			
	Hiring Costs In Hours	Hours Spent per Applicant	Number of Reference Checks	Number of Offers
Industry				
Mining and Agriculture	6.98	1.48	3.41	1.06
Construction	8.23	2.69	2.00	1.06
Manufacturing	11.64	2.03	3.37	1.10
Transportation and Utilities	12.42	2.51	4.85	1.16
Wholesale	12.81	2.58	3.33	1.08
Retail	7.25	1.53	2.35	1.06
Fin., Ins., and Real Estate	11.10	2.61	2.80	1.07
Services	10.97	2.29	3.51	1.11
All	9.87	2.09	3.01	1.08
Occupation				
Professional or Technical	15.71	3.34	2.81	1.19
Managerial	16.99	3.43	2.80	1.08
Clerical	12.90	2.10	3.40	1.09
Sales	10.60	2.05	2.77	1.08
Service	6.30	1.48	3.41	1.09
Blue Collar	7.08	1.99	2.67	1.05
All	9.87	2.09	3.01	1.08

2.5 Measures of Indirect Hiring Costs

In addition to direct hiring costs just discussed, there are also indirect or opportunity costs associated with a position not being filled during the hiring process. Let v denote this constant cost per period. Then the opportunity costs of hiring are v · D, where D, the duration of a vacancy, is the product of the time between applicants, T, and the number of applicants per applicant hired, APERH = APERINT · INTPERO · OFFPERH. Total hiring cost includes these indirect costs.

The employers' answers to various questions in the survey convey some information concerning the nature of indirect hiring costs across employers. If an employer has advance notice of the existence of an opening (ADVOP = 1), the hiring activity during the time prior to the actual opening existing will likely involve reduced indirect costs. On the other hand, for those with advance notice, the number of days before a new employee is needed that the employer begins looking for one, NDSNEED, will be inversely related to indirect hiring costs. (Those employers with no advance notice have NDSNEED equal to zero.) Multiple openings for a position (MULTOP = 1) will likely increase indirect costs. In fact, the actual number of openings, NOPEN, is one measure of these indirect costs.

Table 3 indicates the magnitude of these various indirect hiring cost measures, ADVOP, NDSNEED, MULTOP, and NOPEN, by employers' industrial classifications and by the occupation of the positions filled. Table 3 also indicates the average number of days between the time the employer started looking for someone to fill the opening and the time the new employee started to work (DAYSBET). Seventeen percent of employers did not have to look or had zero days between the time they started to look and the time the individual started to work.

TABLE 3

INDIRECT HIRING COSTS

	Advanced Notice, Days of Advance Notice, Multiple Openings, Number of Openings, and Days before Start Work				
	Advance Notice of Opening	Days of Advance Notice	Multiple Openings	Number of Openings	Days Looking for New Hire
Industry					
Mining and Agriculture	.57	7.65	.14	2.6	8.5
Construction	.53	10.85	.15	1.68	16.5
Manufacturing	.49	7.90	.19	1.82	14.1
Transportation and Utilities	.49	12.29	.15	1.64	26.8
Wholesale	.53	12.59	.08	1.12	18.9
Retail	.53	9.08	.13	1.28	12.8
Fin., Ins., and Real Estate	.62	12.05	.09	1.15	23.6
Services	.55	12.43	.11	1.28	16.9
All	.53	10.61	.13	1.38	16.2
Occupation					
Professional or Technical	.68	19.85	.10	1.39	30.0
Managerial	.56	19.43	.08	1.14	40.7
Clerical	.63	12.88	.06	1.12	17.6
Sales	.56	12.45	.10	1.23	16.7
Service	.47	6.64	.18	1.42	7.9
Blue Collar	.45	7.09	.17	1.66	13.4
All	.53	10.61	.13	1.38	16.2

III. EMPLOYERS' CHOICE OF RECRUITMENT AND SELECTION STRATEGIES: EMPIRICAL EVIDENCE CONCERNING LAST PERSON HIRED

3.1 Introduction

Direct hiring costs per position filled, HRSPERH, average 9.87 hours across employers. Yet, as table 2 suggests, direct hiring costs vary significantly across employers. Section 3.2 of this chapter examines the factors that affect the direct costs of hiring. To do so, direct hiring costs are decomposed into their components, HRSPERA (intensive search), APERO = INTPERO · APERINT (extensive search), and OFFPERH. This is done in order to examine the exact way search changes in response to differences in (1) the nature of the position to be filled, (2) the characteristics of the labor market, or (3) the characteristics of the employer. Among the findings are the following:

- Larger firms, due to economies in interviewing and screening applicants, engage in more extensive search (applicants per offer) but less intensive search (hours spent per applicant). Total hours spent to fill a position are higher for larger firms.
- Increases in flow of applicants, by reducing indirect hiring costs, result in more extensive search, with some substitution of extensive for intensive search.
- Employers choose less intensive and extensive search to fill part-time and temporary or seasonal positions, as the expected gain to additional search is lower for employment matches of shorter tenure.
- Employers hiring individuals who will acquire training useful to many other local employers will engage in more extensive, though not intensive search in order to find individuals less likely to leave.
- Employers offering more training search more, both extensively and intensively, to ensure an expected return on the training that compensates for the investment costs incurred.
- Employers with a greater percentage of their work force unionized surprisingly spend no more hours searching, although they do see more applicants per interview.
- Employers with advance notice of a vacancy search more extensively, reflecting lower indirect costs of postponing hiring.

- Employers hiring more than one employee at a time typically search less extensively and intensively, have a greater proportion of their job offers turned down, and, consequently, seem to be forced to lower their hiring standards. This finding is consistent with the hypothesis that adjustment costs rise with the speed of adjustment.

Section 3.3 of this chapter examines factors affecting intensive search, as measured by the likelihood an individual's references are checked. Among the findings are the following:

- Although larger firms spend fewer hours per applicant, they are more likely to check applicants' references.
- There is a trade-off between the proportion of applicants referenced-checked (a measure of intensive search) and the number of applicants seen per employment offer (a measure of extensive search).

Section 3.4 examines the determinants of employers calling back for interviews those individuals who had previously applied for work. The relevant findings include the following:

- Employers who retain records of applicants and call in more prior applicants per interview save on hours spent per applicant.
- Larger firms are more likely to call in prior applicants for an interview.

The investigation of the job search method used by the new hire that resulted in employment produced the following findings:

- Informal methods, such as referrals by friends, relatives, or walk-ins, are associated with those positions being filled in shorter time after seeing fewer applicants.
- Larger firms are more likely to use public and private employment agencies to obtain a new hire.

3.2 Direct Hiring Costs

Direct hiring costs, in terms of the number of hours company personnel spent recruiting, screening, and interviewing applicants for the position, are the product of the number of hours spent per applicant, the number of applicants per applicant interviewed, the number of applicants interviewed per employment offer, and the number of employment offers per individual hired. That is, HRSPERH = HRSPERA · APERINT · INTPERO · OFFPERH. Consider

factors $X_1,\ldots,X_m$ and $Y_1,\ldots,Y_g$, which, in influencing an employer's choice of intensive and extensive search (HRSPERA and APERO = APERINT · INTPERO, respectively), affect direct hiring costs. To compare the relative effects of changes in the various components of intensive and extensive search on direct hiring costs, the following equations are specified:

$$(1)\quad HRSPERA = \alpha^n S_1^{\beta_1^n} \cdot X_2^{\beta_2^n} \cdots X_m^{\beta_m^n} \cdot e^{\gamma_1^n Y_1 + \cdots + \gamma_g^n Y_g}$$

$$(2)\quad APERINT = \alpha^a X_1^{\beta_1^a} \cdot X_2^{\beta_2^a} \cdots X_m^{\beta_m^a} \cdot e^{\gamma_1^a Y_1 + \cdots + \gamma_g^a Y_g}$$

$$(3)\quad INTPERO = \alpha^i X_1^{\beta_1^i} \cdot X_2^{\beta_2^i} \cdots X_m^{\beta_m^i} \cdot e^{\gamma_1^i Y_1 + \cdots + \gamma_g^i Y_g}$$

Let the number of offers per person hired, OFFPERH, be expressed by--

$$(4)\quad OFFPERH = \alpha^o X_1^{\beta_1^o} \cdot X_2^{\beta_2^o} \cdots X_m^{\beta_m^o} \cdot e^{\gamma_1^o Y_1 + \cdots + \gamma_g^o Y_g}$$

Then total hours spent per applicant hired, HRSPERH, takes the form

$$(5)\quad HRSPERH = [\alpha^n \cdot \alpha^a \cdot \alpha^i \cdot \alpha^o X_1^{(\beta_1^n+\beta_1^a+\beta_1^i+\beta_1^o)} \cdots X_m^{(\beta_m^n+\beta_m^a+\beta_m^i+\beta_m^o)}] \cdot [e^{(\gamma_1^n+\gamma_1^a+\gamma_1^i+\gamma_1^o)Y_1 + \cdots + (\gamma_g^n+\gamma_g^a+\gamma_g^i+\gamma_g^o)Y_g}]$$

Table 4 provides a description of the variables involved in the estimation of equations (1) through (5). Regressions (1) through (5) in table 5

TABLE 4

DESCRIPTION OF VARIABLES

Variable Name	Description	Mean[a] (Standard Deviation)
HRSPERH	Number of person-hours spent by company personnel recruiting, screening, and interviewing applicants to hire one individual for the position (total number hours/number hired).[b]	9.87 (17.16)
APERH	Number of people who applied for the position per person hired (number of applicants/number hired).	9.22 (23.17)
RCKPERH	Number of applicants per person hired who were referenced-checked with a previous employed (number referenced-checked/number hired).	3.01 (12.26)
INTPERH	Number of applicants who were interviewed for the position per person hired (number interviewed/number hired).	4.85 (8.55)
CALLPERH	Number of those interviewed who had applied prior to this job opening and were called in for an interview when the vacancy arose per person hired (number called in/number hired).	.96 (2.62)
OFFPERH	Number of applicants who were offered a job per person hired (number of offers/number hired).	1.08 (.42)
HRSPERA	Number of person-hours spent recruiting, screening, and interviewing per applicant for the position (HRSPERH/APERH).	2.40 (4.14)
APERINT	Number of applicants per applicant interviewed for the position (APERH/INTPERH).	2.89 (26.58)
INTPERO	Number of applicants interviewed for the position per offer (INTPERH/OFFPERH).	4.48 (6185)
JUL81EMP	Number of full- and part-time employees at the establishment during the week of July 1, 1981.	63.58 (235.65)
OTHEST	Equals one if company has divisions or subsidiaries located in other areas.	.26
FREQSEE	Number of people who came looking for work in the past ten days divided by current employment.[c]	.37 (1.01)
FREQPHO	Number of telephone calls received from people looking for work in the past ten days divided by current employment.[d]	.64 (3.02)
UNION	Percentage of current nonsupervisory workers that are covered by collective bargaining.	9.55 (26.72)
TRAINT	Measure of the total cost typically incurred training individual hired for the position during first three months.[e]	135.80 (151.19)
MKSIZE	Employment in the sites that were sampled. For urban area, it is the metropolitan employment. For rural area, it is the group of count that were sampled.	137,850 (134,284)
GENTRM	Equals one if almost all of the skills learned by new employees in the position are useful outside the company and sixteen or more other companies in the local labor market have jobs requiring these skills.	.44
GENTRF	Equals one if almost all of the skills learned by new employees in the position are useful outside the company but less than sixteen other companies in the local labor market have jobs requiring these skills.	.28

TABLE 4
Continued

Variable Name	Description	Mean[a] (Standard Deviation)
PARTT	Equals one if usual hours worked per week at the position is less than thirty.	.14
TEMPSEA	Equals one if position was supposed to be temporary or seasonal when individual was hired.	.15
COSTM	Current cost of the most expensive machine that the people in the position work on or with.[f]	24,261.70 (52,751.58)
MULTOP	Equals one if there was more than one opening for the position during the period when the individual was hired.	.13
ADVOP	Equals one if there was any advance notice of the existence of the vacancy that was filled.	.53
DIFFIR	Equals one if a great deal of documentation or paperwork is required to fire an employee.	.11
DIFFIRS	Equals one if some but not a great deal of documentation or paperwork is required to fire an employee.	.20
NOPROB	Equals one if job has no probationary period during which the new employee can be let go without too much trouble if he or she is not performing up to standard.	.29
DUPROBPD	If there is a probationary period, the duration of the probationary period (in weeks).[j]	6.55 (7.97
OPROF	Equals one if the occupational classification of the position is professional or technical.	.08
OMANG	Equals one if the occupational classification of the position is managerial.	.04
OCLER	Equals one if the occupational classification of the position is clerical.	.24
OSALES	Equals one if the occupational classification of the position is sales.	.14
OSERV	Equals one if the occupational classification of the position is service.[h]	.19
QUITRAT	Number of employees who quit during 1981 divided by JUL81EMP.[g]	.27 (.63)
HRWAGE	The average hourly wage rate paid to workers in the position who have had two years of experience in this job, including any commissions, bonuses, or incentive pay.[i]	5.79 (3.07)
WAGECH	Difference between HRWAGE and the starting hourly wage.	2.91 (18.64)
PROMAB	Equals one if basis for promotion in this position is mainly ability (as opposed to solely seniority, mainly seniority, or some of both).	.46
LAOFFAB	Equals one if basis for selecting which employees are laid off is mainly productivity (as opposed to solely seniority, mainly seniority, or some of both).	.47
PROPREF	Proportion of the applicants who were referenced-checked with a previous employer (ROXPERH/APERH).[k]	.42 (.42)

TABLE 4
Continued

Variable Name	Description	Mean[a] (Standard Deviation)
PROPCALL	Proportion of those interviewed who had applied prior to the vacancy and were called in for an interview when the vacancy arose (CALLPERH/INTPERH).[1]	.23 (.38)
FRIEND	Equals one if last hired individual was a friend of a currer employee.	.31
RELAT	Equals one if the last hired individual was a relative of a current employee.	.10
NEWSAD	Equals one if the last hired individual was a respondent to a newspaper ad.	.12
ESREF	Equals one if the last hired individual was a referral from the employment service.	.03
PRIREF	Equals one if the last hired individual was a referral from a private employment agency.	.03
GOVREF	Equals one if the last hired individual was a referral from CETA, WIN/ welfare, or a community-based organization such as Urban League.	.01
EMPREF	Equals one if the last hired individual was a referral from another employer.	.05
SCHREF	Equals one if the last hired individual was a referral from a school.	.04
UNIREF	Equals one if the last hired individual was a referral from a union.	.01
OTHREF	Equals one if the last hired individual was a referral from a source other than those cited above.	.07
WALKIN	Equals one if the last hired individual was a walk-in.	.24
REF	Equals one if the last hired individual was a referral (but not a friend or relative of a current employee).	.21

[a]Means are for the 2,264 employers in the sample that (1) had one or more employees during the week of July 1, 1981 and (2) provided information on the hiring process associated with the last position filled prior to August 1981, concerning HRSPERH, number of applicants, number interviewed, number of offers, and number hired. Zero answers for HRSPERH were assigned the value of one-half, as were zero answers with respect to the number interviewed. If the number of applicants was less than the number interviewed, the number of applicants was set equal to the number interviewed.

[b]Concerns last position filled prior to August 1981. Approximately 10 percent of employers hired more than person.

[c]Zero answers to number seeking work were assigned the value of .1. "Don't know" and "Not available" answers were assigned the value of 1.1.

[d]Zero answers were assigned the value of .1, while "Don't know" and "Not available" answers were assigned the value of 1.1.

[e]Is a weighted average of the total hours during the first three months that the average new employee in the position spends in training activities in which he or she is watching other people do the job rather than doing it himself (weight = .8) plus the total hours during the first three months typically spent on formal training (weight = 2.3) plus the total hours during the first three months that management and line supervisors typically spend away from other activities giving informal individualized training or extra supervision (weight = 1.5) plus the total hours during the first three months that co-workers who are not supervisors typically spend away from their normal

TABLE 4
Continued

work giving informal individualized training or extra supervision (weight = 1). "Don't know" and "Not available" answers were assigned values of 1.1. If the sum was zero, TRAINT was assigned the value of .5. An upper bound of 520 hours was also set.

[f]For those answering less than $2,000 or greater than $200,000, the values of $1,000 and $250,000 were assigned. "Don't know" and "Not available" answers were assigned the value of $10,000. Otherwise, it represents the geometric mean of the interval chosen, where the intervals to choose from were $2-10,000, $10,000-50,000, and $50,000-200,000.

[g]If zero individuals quit, the value of .1 was assigned. "Don't know" and "Not available" answers were assigned the value of 1.1.

[h]The excluded group are blue-collar workers.

[i]For "Don't know" or "Not available" answers, the hourly wage figure is either (1) hourly wage of the individual hired, including commissions and incentive pay; (2) an imputed hourly wage for the current employee based on monthly salary and hours per week usually worked; or (3) the mean wage for those who reported an hourly wage (606.1).

[j]Note that, for those positions with a probationary period, the mean is 9.27 weeks. "Don't know" and "Not available" answers with respect to the length of the probationary period were assigned a value of 8.

[k]If the ratio was greater than one, it was set equal to one. "Don't know" and "Not available" answers were assigned a value equal to the mean of those who responded.

[l]If the ratio was greater than one, it was set equal to one. "Don't know" and "Not available" answers were assigned a value equal to the mean of those who responded.

present estimations of the logarithm of equations (1) through (5), respectively. In table 5, the independent variables ($X_1,\ldots,X_m$ and $Y_1,\ldots,Y_g$) are limited to those that a priori not only are not likely to be endogenous to the hiring activities of the employer, but also can be interpreted as influencing either the gains or costs of the various recruiting and selection strategies chosen. Tables 6 through 8 provide estimates of equations (1) through (5) with successively larger sets of explanatory variables. Table 6, the second specification, adds measures of indirect hiring costs: whether or not the employer had advance notice of the vacancy (ADVOP) and whether or not the employer had more than one opening for the position at the time the individual was hired (MULTOP).

Table 7, the third specification, adds four new variables that measure how difficult it is to fire an individual hired to fill the position. DIFFIR indicates that a great deal of documentation or paperwork is required to fire an employee, whereas DIFFIRS indicates that some but not a great deal of documentation or paperwork is required to fire an employee. NOPROB denotes a position for which there is no probationary period during which the new employee can be let go without too much trouble, if he or she is not performing up to standard, whereas LN(DUPROBPD) is the logarithm of the duration (in weeks) of the probationary period, if there is one.

Table 8, the fourth specification, adds five new variables indicating different occupational classifications of the position filled. OPROF indicates the position is professional or technical, while OMANG indicates a managerial position. OCLER, OSALES, or OSERV indicates that the position filled is a clerical, sales, or service occupation, respectively.

Discussed next are the effects of the variables introduced as potential determinants of direct hiring cost and its components. Unless otherwise noted, these effects will be with respect to the third specification of the model (table 7). The third specification is chosen over the fourth specification because occupational effects are not predicted by the theory.

In a recent article on the relationship between employer size and wages, Mellow (1982) suggests that at both the establishment and the firm level, an

TABLE 5

ESTIMATES OF DETERMINANTS OF HIRING COST AND ITS COMPONENTS: FIRST SPECIFICATION

Explanatory Variable[b]	Mean	Dependent Variable[a]				
		Hiring Costs in Hours (log) 1	Hours Spent per Applicant (log) 2	Applicants per Interview (log) 3	Interviews per Offer (log) 4	No. of Offers (log) 5
Size of Employer (log)	2.77	.13 (6.50)	-.04 (2.27)	.09 (8.09)	.07 (2.07)	.007 (2.07)
Multiestablishment Employer	.26	.33 (5.24)	.04 (.67)	.02 (.61)	.28 (5.57)	-.006 (.58)
Rate of Visits (log)	-2.36	.02 (1.08)	-.04 (2.85)	.03 (3.40)	.03 (2.22)	-.005 (.18)
Rate of Phone Calls (log)	-2.16	.03 (2.23)	-.006 (.05)	.02 (2.44)	.01 (.90)	.003 (1.01)
Percent Unionized	9.55	-.001 (1.47)	-.002 (1.88)	.003 (4.55)	-.002 (2.66)	-.0003 (1.46)
On-the-Job Training (log)	4.00	.20 (13.50)	.09 (6.78)	.005 (.63)	.10 (8.61)	.004 (1.38)
Size of Labor Market (log)	11.14	.06 (2.81)	.08 (4.27)	-.04 (3.86)	.02 (1.00)	.007 (1.99)
Gen. Training Many Companies	.44	.26 (4.20)	.03 (.50)	.008 (.22)	.22 (4.52)	.02 (1.82)
Gen. Training Few Companies	.28	.07 (3.34)	.14 (3.69)	-.04 (3.22)	-.04 (2.66)	.02 (1.53)
Temporary or Seasonal Job	.15	-.52 (7.11)	-.20 (2.96)	.02 (.46)	-.34 (5.83)	-.008 (.59)
Cost of Machines (log)	8.61	.04 (2.57)	.04 (2.56)	.007 (.82)	-.002 (.31)	-.0009
Constant		-.74 (2.77)	-1.44 (5.94)	.57 (3.75)	.19 (.90)	-.06 (1.30)
R2 (adjusted)		.21	.06	.06	.13	.01
Std. Error		1.21	1.09	.69	.95	.21

[a]The mean of the logarithm of hiring costs in hours (LN(HRSPERH)) is 1.39. The mean of the logarithm of hours spent per applicant (LN(HRSPERA)) is .067. The mean of the logarithm of applicants per interview (LN(APERINT)) is .35. The mean of the logarithm of interviews per offer (LN(INTPERO)) is .91. The mean of the logarithm of the number of offers (LN(OFFPERH)) is .05. The absolute value of the t-statistics appear in parentheses. For sample size of 2,264 employers.

[b]Variables are defined in table 4.

TABLE 6

ESTIMATES OF DETERMINANTS OF HIRING COST AND ITS COMPONENTS: SECOND SPECIFICATION

Explanatory Variable[b]	Mean	Dependent Variable[a]: Hiring Costs In Hours (log) 1	Hours Spent per Applicant (log) 2	Applicants per Interview (log) 3	Interviews per Offer (log) 4	No. of Offers (log) 5
Size of Employer (log)	2.77	.14 (6.95)	-.03 (1.76)	.09 (7.66)	.08 (5.01)	.005 (1.28)
Multiestablish-ment Employer	.26	.31 (4.97)	.04 (.63)	.02 (.47)	.27 (5.35)	-.006 (.57)
Rate of Visits (log)	-2.36	.02 (1.39)	-.04 (2.79)	.03 (3.50)	.03 (2.49)	-.008 (.26)
Rate of Phone Calls (log)	-2.16	.04 (2.39)	.001 (.08)	.02 (2.36)	.01 (1.04)	.002 (.80)
Percent Unionized	9.55	-.002 (1.62)	-.002 (1.91)	.003 (4.50)	-.002 (2.79)	-.003 (1.44)
On-the-Job Training (log)	4.00	.20 (13.11)	.09 (6.72)	.004 (.41)	.1 (8.25)	.004 (1.37)
Size of Labor Market (log)	11.14	.06 (3.12)	.08 (4.33)	-.04 (3.76)	.02 (1.25)	.007 (1.94)
Gen. Training Many Companies	.44	.24 (3.93)	.03 (.53)	-.02 (.43)	.21 (4.30)	.02 (1.72)
Gen. Training Few Companies	.28	.07 (1.01)	.14 (2.23)	-.05 (1.19)	-.04 (.73)	.02 (1.36)
Part-time	.14	-.28 (3.70)	-.25 (3.63)	.13 (1.79)	-.18 (2.93)	.02 (1.37)
Temporary or Seasonal Job	.15	-.48 (6.44)	-.18 (2.72)	.02 (.57)	-.31 (5.24)	-.01 (.87)
Cost of Machines (log)	8.62	.04 (2.55)	.04 (2.55)	.007 (.81)	-.003 (.24)	-.001 (.29)
More than One Opening	.13	-.13 (.72)	-.16 (2.18)	.08 (1.79)	-.11 (1.77)	.05 (3.73)
Advance Notice of Opening	.53	.31 (6.07)	.02 (.46)	.09 (2.96)	.20 (4.97)	.002 (.18)
Constant		-.92 (3.44)	-1.46 (5.99)	.53 (3.44)	.07 (.34)	-.06 (1.26)
R^2 (adjusted)		.22	.06	.07	.14	.01
Std. Error		1.20	1.09	.68	.95	.21

[a]The mean of the logarithm of hiring costs in hours (LN(HRSPERH)) is .39. The mean of the logarithm of hours spent per applicant (LN(HRSPERA)) is .067. The mean of the logarithm of applicants per interview (LN(APERINT)) is .?.. The mean of the logarithm of interviews per offer (LN(INTPERO)) is .91. The mean of the logarithm of the number of offers (LN(OFFPERH)) is .05. The absolute value of the t-statistics appear in parentheses. For sample size of 2,264 employers.

[b]Variables are defined in table 4.

TABLE 7

ESTIMATES OF DETERMINANTS OF HIRING COST AND ITS COMPONENTS: THIRD SPECIFICATION

Explanatory Variable[b]	Mean	Dependent Variable[a]: Hiring Costs In Hours (log) 1	Hours Spent per Applicant (log) 2	Applicants per Interview (log) 3	Interviews per Offer (log) 4	No. of Offers (log) 5
Size of Employer (log)	2.77	.07 (3.12)	-.06 (3.16)	.08 (6.72)	.04 (2.58)	.002 (.40)
Multiestablish-ment Employer	.26	.23 (3.62)	.01 (.02)	.001 (.25)	.23 (4.58)	-.01 (.88)
Rate of Visits (log)	-2.36	.02 (1.23)	-.04 (2.58)	.03 (3.40)	.03 (2.16)	-.001 (.44)
Rate of Phone Calls (log)	-2.16	.03 (2.24)	.001 (.11)	.02 (2.25)	.01 (.89)	.002 (.73)
Percent Unionized	9.55	-.002 (2.35)	-.002 (2.07)	.002 (4.05)	-.002 (3.10)	-.003 (1.82)
On-the-Job Training (log)	4.00	.17 (11.02)	.08 (6.64)	.004 (.42)	.08 (6.72)	.003 (1.17)
Size of Labor Market (log)	11.14	.06 (3.05)	.07 (4.18)	-.04 (3.74)	.02 (1.29)	.007 (1.91)
Gen. Training Many Companies	.44	.25 (4.07)	.02 (.43)	-.01 (.36)	.22 (4.47)	.02 (1.79)
Gen. Training Few Companies	.28	.05 (.81)	.13 (2.10)	-.05 (1.17)	-.05 (.87	.02 (1.40)
Part-time	.14	-.25 (3.34)	-.22 (3.24)	.13 (2.87)	-.17 (2.84)	.02 (1.36)
Temporary or Seasonal Job	.15	-.45 (6.21)	-.17 (2.48)	.02 (.56)	-.30 (5.13)	-.01 (.86)
Cost of Machines (log)	8.62	.04 (2.22)	.04 (2.47)	.007 (.73)	-.006 (.51)	-.001 (.34)
More than One Opening	.13	-.14 (1.88)	-.15 (2.05)	.07 (1.67)	-.12 (2.01)	.05 (3.64)
Advance Notice of Opening	.53	.29 (5.83)	.02 (.32)	.09 (3.01)	.19 (4.69)	.002 (.21)
Very Difficult to Fire	.11	.50 (5.45)	.18 (2.11)	.13 (2.36)	.16 (2.19)	.03 (2.16)
Somewhat Difficult to Fire	.20	.36 (5.35)	.18 (2.91)	.01 (.33)	.14 (2.66)	.02 (1.96)
No Probationary Period	.29	-.07 (.77)	.29 (3.41)	-.06 (1.08)	-.29 (3.90)	-.02 (1.10)
Length of Probationary Period (log)	1.37	.14 (3.53)	.16 (4.37)	-.03 (1.26)	.02 (.50)	-.007 (.97)
Constant		-.79 (2.92)	-1.62 (6.49)	.59 (3.72)	.29 (1.34)	-.04 (.85)
R^2 (adjusted)		.25	.07	.07	.16	.01
Std. Error		1.17	1.08	.68	.93	.21

[a]The mean of the logarithm of hiring costs in hours (LN(HRSPERH)) is 1.39. The mean of the logarithm of hours spent per applicant (LN(HRSPERA)) is .067. The mean of the logarithm of applicants per interview (LN(APERINT)) is .35. The mean of the logarithm of interviews per offer (LN(INTPERO)) is .91. The mean of the logarithm of the number of offers (LN(OFFPERH)) is .05. The absolute value of the t-statistics appear in parentheses. For sample size of 2,264 employers.

[b]Variables are defined in table 4.

TABLE 8

ESTIMATES OF DETERMINANTS OF HIRING COST AND ITS COMPONENTS: FOURTH SPECIFICATION

Explanatory Variable[b]	Mean	Dependent Variable[a]: Hiring Costs in Hours (log) 1	Hours Spent per Applicant (log) 2	Applicants per Interview (log) 3	Interviews per Offer (log) 4	No. of Offers (log) 5
Size of Employer (log)	2.77	.07 (3.44)	-.06 (2.84)	.08 (6.64)	.04 (2.58)	.002 (.44)
Multiestablishment Employer	.26	.20 (3.20)	-.01 (.20)	.007 (.21)	.21 (4.30)	-.01 (1.03)
Rate of Visits (log)	-2.36	.03 (1.80)	-.03 (2.10)	.03 (3.17)	.03 (2.39)	-.001 (.18)
Rate of Phone Calls (log)	-2.16	.03 (1.85)	.004 (.26)	.02 (2.31)	.009 (.77)	.001 (.56)
Percent Unionized	9.55	-.002 (1.67)	-.002 (1.87)	.002 (4.04)	-.002 (2.56)	-.003 (0.50)
On-the-Job Training (log)	4.00	.15 (9.74)	.07 (5.06)	.004 (.45)	.07 (5.77)	.002 (.75)
Size of Labor Market (log)	11.14	.05 (2.80)	.06 (3.64)	-.04 (3.56)	.02 (1.54)	.006 (1.61)
Gen. Training Many Companies	.44	.18 (3.08)	-.004 (.07)	-.01 (.28)	.18 (3.80)	.02 (1.47)
Gen. Training Few Companies	.28	.05 (.78)	.11 (1.77)	-.04 (1.14)	-.03 (.50)	(1.19)
Part-time	.14	-.20 (3.41)	-.20 (2.62)	.12 (2.61)	-.19 (3.18)	.02 (1.39)
Temporary or Seasonal Job	.1'	-.42 (5.86)	-.14 (2.14)	.02 (.54)	-.29 (5.08)	.01 (1.08)
Cost of Machines (log)	8.62	.05 (3.39)	.03 (2.23)	.008 (.83)	.01 (1.00)	.003 (.11)
More than One Opening	.13	-.05 (.61)	-.10 (1.45)	.07 (1.55)	-.07 (1.11)	.05 (3.93)
Advance Notice of Opening	.53	.23 (4.56)	-.02 (.47)	.09 (3.12)	.16 (3.99)	-.003 (.30)
Very Diff. to Fire	.11	.49 (5.35)	.19 (2.29)	.12 (2.27)	.13 (1.82)	.04 (2.24)
Somewhat Difficult to Fire	.20	.35 (5.35)	.18 (3.01)	.01 (.28)	.13 (2.54)	.02 (1.87)
No Probationary Period	.29	-.17 (1.81)	.22 (2.62)	-.05 (.91)	-.32 (4.33)	-.02 (1.36)
Length of Probationary Period (log)	1.37	.09 (2.32)	.13 (3.43)	-.02 (1.00)	-.002 (.07)	-.009 (1.26)

TABLE 8
Continued

Explanatory Variable[b]	Mean	Dependent Variable[a]				
		Hiring Costs In Hours (log) 1	Hours Spent per Applicant (log) 2	Applicants per Interview (log) 3	Interviews per Offer (log) 4	No. of Offers (log) 5
Occ.: Manag.	.04	.63 (4.69)	.58 (4.62)	.05 (.68)	-.03 (.29)	.03 (1.18)
Occ.: Prof. or Tech.	.08	.50 (5.10)	.45 (4.92)	-.05 (.86)	.03 (.37)	.07 (4.07)
Occ.: Clerical	.24	.54 (7.60)	.17 (2.51)	-.03 (.59)	.38 (6.59)	.02 (1.83)
Occ.: Sales	.14	.31 (3.76)	-.005 (.07)	.06 (1.11)	.24 (3.65)	.02 (1.30)
Occ.: Service Worker	.19	.06 (.74)	-.06 (.89)	.03 (.55)	.08 (1.32)	.01 (1.07)
Constant		-.93 (3.34)	-1.47 (5.66)	.53 (3.22)	.49 (.22)	-.05 (1.02)
R^2 (adjusted)		.28	.09	.07	.18	.02
Std. Error		1.15	1.07	.68	.92	.21

[a]The mean of LN(HRSPERH) is 1.39. The mean of LN(HRSPERA) is .067. The mean of LN(APERINT) is .35. The mean of LN(INTPERO) is .91. The mean of LN(OFFPERH) is .05. The absolute value of the t-statistics appear in parentheses. For sample size of 2,264 employers.

[b]Variables are defined in table 4.

increase in size "results in increased difficulties in monitoring worker performance" (p. 495). Greater monitoring costs at larger establishments or for firms with more than one plant imply an increase in dispersion in the net expected present value of labor services offered by a new employee. That any mistake in hiring is likely to impose greater costs at larger firms leads larger firms to exercise more care in selecting new employees. Thus, it is hypothesized that extensive search, intensive search cost, and thus direct hiring cost will be greater at larger firms. Ambiguity does exist with respect to the predicted effect of firm size on the number of applicants seen per interview, since it is negatively related to intensive search but positively related to extensive search. These hypotheses were tested by examining the effect of two indicators of size: ln(SIZE), which denotes the logarithm of the number of employees at the establishment as of July 1981, and OTHESTAB, a dummy variable equal to one if the company has other divisions or subsidiaries located out of the area.

The evidence indicates that employers of larger establishments do, in fact, engage in more extensive search, a doubling in the establishment size increases both the number interviewed per offer by 3 percent and the number of applicants per interview by approximately 6 percent. This increases the number of applicants per offer by approximately 9 percent. However, the hours spent per applicant unexpectedly fall by 4 percent. The net effect on the direct cost of hiring is that it increases approximately 5 percent with a doubling in the size of the employer. Consistent with greater monitoring costs, companies having other establishments outside the area have 29 percent higher direct costs, reflecting greater extensive search, specifically an increase in the number of applicants interviewed per offer. Unexpectedly, intensive search in terms of the number of hours spent per applicant is unchanged.

The above findings, although generally consistent with the theory, have two peculiarities: (1) the large positive effect of establisnment size on the number of applicants per interview, and (2) the negative effect of establishment size on intensive search cost. This suggests a second complementary

rationale to explain why larger establishments have workers of greater quality. Specifically, assume that larger establishments are more likely to have individuals who specialize in the screening of applicants. Due to specialization, the price vector for information obtained from each applicant, p_s, is lower.[11] According to equation (2), a lower p_s reduces the marginal cost of information obtained on each applicant, I_s. One thus expects I_s to increase, and this increased information obtained at the application stage to substitute for information gathered via an interview. This leads to the prediction that larger establishments will gather less information by interviews and have a lower probability that an applicant is interviewed (i.e., an increase in the expected number of applicants seen per applicant interviewed). The net effect on intensive search cost, HRSPERA, is unclear, although a reduction is now not unexpected.[12]

Mortensen (1970) has argued that one response of an employer to an increase in output demand is to lower the minimum skill requirements in hiring. One would predict changes in labor market conditions to have similar effects on employer search. At the time of the survey, each employer was asked, "During the past ten days how many telephone calls did you and your personnel office receive from people seeking work?" and "During the past ten days, about how may people came to your company looking for work?" Dividing each of these by the current number of employees and taking the logarithm generates two measures, ln(FREQPHO) and ln(FREQSEE), of the flow of individuals seeking work at the firm at the time of the survey. If differences across employers in ln(FREQPHO) and ln(FREQSEE) tend to remain constant over time, then these

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11. This approach to the effect of firm size is suggested in Barron and Mellow (1982).

12. The increase in the expected number of applicants seen per applicant interviewed will increase extensive search; however, unless HRSPERA falls dramatically, this argument suggests a fall in the number interviewed.

variables indicate the flow of applicants to the employer at the time a new employee was hired.[13]

An increase in the flow of applicants to an employer reduces T, the average time between applicants. According to equation (3), a reduction in T lowers the increment in the indirect cost of hiring to an increase in extensive search in terms of the expected number of applicants per employment offer. Thus, we hypothesize the components of extensive search to be directly related to the number of job-seeker calls and visits, as employers raise their "minimum skill requirements' in response to an increased flow of applicants. On the other hand, intensive search costs are expected to fall with increases in job-seeker contacts, as extensive search is substituted for intensive search. The net effect on the direct cost of hiring is ambiguous, although the sum of direct and indirect hiring costs must fall.

The evidence indicates that extensive search does increase with an increase in calls and visits. However, an increase in the rate of telephone calls increases the number of applicants per interview but not the number of interviews per employment offer. On the other hand, an increase in the rate of visits by job seekers increases not only the number of applicants per interview but also the number interviewed per employment offer. Thus, as one might expect, employers' extensive search choices are more responsive to changes in the number of individuals who visit the employer seeking work than

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13. The variables we would prefer to include in the regression are the autonomous flow of job-seeker contacts at the time of the hiring event. By autonomous we mean uninfluenced by the firm's recruitment policies. In fact, however, the time period for which the flow of job-seeker contacts is measured is between six and twenty-four months after the hiring event being studied and these flows respond both to the long-term recruitment policies (e.g., whether applications are stockpiled, choice of advertising mode when there is a vacancy) of the firm, and the employer's current circumstances and behavior (e.g., number of vacancies, recent advertising efforts, whether phone callers are being encouraged to visit) (see chapter 4). If these flows had been measured at the time the hiring decision was made, there would have been an endogeneity problem that would have positively biased their coefficients (i.e., employers that wanted to engage in a very extensive search may invest in greater advertising to generate a larger flow of job seekers). Since, however, the time periods are so different, the negative bias produced by random measurement error is likely to be much more significant than the positive bias introduced by endogeneity. Dropping FREQPHO and FREQSEE from the regressions does not significantly alter our other findings.

to changes in the number who telephone the employer seeking work. This is also true with respect to the substitution of extensive search for intensive search. A greater flow of applicants visiting the employer reduces the average time spent with each applicant, whereas a greater rate of telephone calls does not significantly alter the investment in intensive search.

The expected tenure and intensity of an employment relationship clearly affects the marginal gain to additional information on potential employees. Thus, it seems likely that positions that are temporary or seasonal in nature and positions that are part-time would be ones for which employers would choose less extensive and intensive search. As expected, hours spent per person hired are 36 percent lower if the position is a temporary one, reflecting a 16 percent drop in intensive search (hours spent per applicant) and a 26 percent drop in extensive search (the number of applicants seen per offer). The fall in extensive search essentially reflects a drop in the number of applicants per interview. Similarly, hours spent per person hired are 22 percent lower if the position is part-time. However, this is due mainly to a drop in the hours spent per applicant. The number of applicants per offer is essentially unchanged, as a fall in the number of applicants interviewed per offer is offset by an increase in the number of applicants per applicant interviewed.

Next, consider the effects of training. Assume that an increase in training does not equally raise the productivity of all potential employees, but rather increases subsequent to per-period productivity in proportion to the initial value of labor services offered. Then, the dispersion in the distribution of present values of labor services offered by individuals applying for a particular position is greater when training is greater. Since the wage paid does not perfectly reflect the actual increases in productivity (even when the training is all general), increased training thus implies a larger gain to additional information gathered by intensive and extensive search.[14] As a consequence, one expects increased intensive and extensive

14. The presumption is that at least part of this increase in productivity due to training is being received by the employer. This suggests that the training measure be directly related to specific training, and that employers share in the costs and gains to such training.

search for positions that involve greater amounts of training. This hypothesis was tested by entering a variable titled TRAINT, the logarithm of the sum of different types of informal and formal on-the-job training usually associated with the position during the first three months of employment. As expected, an increase in training does increase extensive and intensive search; hours spent per applicant rise approximately 1 percent and applicants per employment offer rise approximately 1 percent, given a 10 percent increase in training.

As with training, larger physical capital inputs utilized by a worker may directly affect the dispersion in the value of labor services offered. This hypothesis was tested by examining how search investments were affected by the logarithm of "the cost of the most expensive machine people in this position work on or with." As expected, the greater the expense of the machine individuals work on or with, the greater the time employers devote to recruiting, screening, and interviewing applicants. Interestingly, the 4 percent increase in direct hiring costs associated with 100 percent increase in the costs of the machines worked on or with occurs due to an increase in intensive search (i.e., in hours spent per applicant). The number of applicants seen is not significantly affected.

Employers were asked whether the "skills learned in this job are useful outside of this company" and the number of other local companies that have jobs requiring these skills. If almost all or most of the skills learned were reported to be general and more than fifteen local companies used these skills, a dummy variable titled GENTRM was set equal to 1. If skills were general but fewer than sixteen firms used them, a dummy variable GENTRF was set equal to 1. The effect of these variables on direct hiring costs cannot be predicted a priori. On the one hand, the fact that training is general should result in shorter tenure on average and a greater tendency for realized wages to reflect realized productivity. This should reduce the dispersion of the present value of realized net productivity of job applicants and, therefore, the payoff to search. On the other hand, higher turnover may result in high payoffs to search as the firm tries to determine which applicant is least likely to quit. Also, if many other employers can use a particular skill there are also many other employers who provide training in that skill. The

firm hiring for such a job might be expected to look for someone who is already trained and who is reported to be above average in productivity. This could be expected to cause an increase in search.

Our results indicate that the impacts of general training that increase search are stronger than those that reduce search. The combination of general training and many alternative employers has the effect of increasing the number of interviews per offer (a component of extensive search) without increasing the number of applicants per interview or the number of hours per applicant.

Similarly, the size of the local labor market, as measured by total employment, should influence employers' hiring activities as they seek to minimize the likelihood of a new employee quitting. This is, in fact, the case, as a doubling in market size increases total hiring costs by 4 percent. Interestingly, unlike the case with GENTRM, the increase reflects an increase in the number of hours spent per applicant that more than offsets a reduction in extensive search.

Brown and Medoff (1978) have suggested that employers may respond to the higher employee compensation package imposed by a union by hiring higher-quality workers. They express reservations concerning this view, but suggest that the issue "should be studied in greater detail, [in part by utilizing] data sets which provide additional measures of labor quality" (p. 375). The variable UNION denotes the reported proportion of workers covered by collective bargaining agreements. An increase in the proportion covered is likely to reflect an increased probability that the position filled is a unionized position. Following Brown and Medoff, we hypothesize that the variable UNION should be directly related to extensive search, intensive search, and direct hiring cost, as employers seek higher-quality workers for unionized positions.

Surprisingly, the evidence indicates that direct hiring costs are lower for unionized jobs, due to reductions in the hours spent per applicant, the number interviewed per offer, and the number of offers per hire. Offsetting this to some degree is a higher number of applicants seen per applicant interviewed.[15] Several potential explanations of this are: (1) search activity

15. Note that the effect of UNION is not significantly changed if industry and occupation variables are included nor if a variable interacting the construction industry with the union variable is included.

by the union has been neglected, (2) self-selection by applicants is based on the fact that unionized employers are known to seek out higher-quality individuals, and (3) the higher compensation of unionized positions alters the behavior of workers (for instance, reduces the likelihood of quitting) in such a way that it reduces the gain to additional search that derives from discovering individuals possessing preferred characteristics (for instance, greater employment stability).

If the employer has advance notice of a vacancy, this presumably reduces the indirect costs per period of extensive search, v, since for a portion of the search time there does not exist a cost of seeing an additional applicant arising from the existence of an unfilled vacancy. On the other hand, if the employer has multiple openings (MULTOP = 1), the principle of diminishing returns suggests there will be greater marginal cost to intensive as well as extensive search.

As expected, advance notice of a vacancy raises direct hiring costs (although the implied sum of direct plus indirect hiring costs is lower), specifically by raising extensive search--both the number of applicants seen per interview and the number interviewed per offer. Unexpectedly, the existence of multiple openings does not significantly reduce extensive search. However, the existence of multiple openings does reduce the hours spent per applicant. That less is invested in search prior to an employment offer when the employer has multiple openings is evidence consistent with the hypothesis that higher adjustment costs are associated with a more rapid increase in employment (see, for example, Mortensen 1973). This follows since the reduced care taken to locate an acceptable new employee by a firm with multiple openings imposes costs on the firm in terms of a lower expected contribution to output from the additional worker.

Lippman and McCall (1976), in examining the implications of the existence of belated information on the optimal search strategy, argue that in environments in which belated information exists (in our case, where information is obtained by the employer on the productivity of the new employee after the hiring decision is made), if turnover is not permitted then the "searcher . . . is more careful in his [sic] irrevocable decision making" (p. 142). Thus, independent of any difficulties in observing a worker's

contribution, if employers find it difficult to react to a mistake--that is, to fire an individual whose discovered productivity does not exceed the compensation package--then mistakes will be more costly. As a result, such employers are hypothesized as engaging in more extensive search and intensive search prior to hiring, and thus incur greater direct hiring costs.

The predictions of the effects of firing difficulties on employer search and hiring costs are confirmed by the evidence. Employers who state that a great deal of documentation or paperwork is required to fire an employee (DIFFIR = 1) have a 65 percent higher direct cost of hiring, reflecting a 20 percent increase in hours spent per applicant and a 34 percent increase in applicants per employment offer. Employers who state that some but not a great deal of documentation or paperwork is required to fire an employee (DIFFIRS = 1) incur 43 percent greater direct hiring costs, reflecting a 20 percent increase in hours spent per applicant and a 16 percent increase in the number of applicants per employment offer.

Two other measures of the difficulty of firing a new employee are NOPROB and DUPROBPD. Interestingly, the lack of a probationary period (NOPROB = 1) does not alter direct hiring costs, as the rise in the hours spent per applicant is offset by the fall in the number of applicants per employment offer. Increases in the length of the probationary period (DUPROBPD) mean higher direct hiring costs, as employers spend more hours with each applicant.

According to table 8, employers' choices of recruitment and selection strategies vary across occupations. White-collar positions are associated with significantly greater direct hiring costs. Managerial and professional or technical positions have greater hiring costs, due primarily to a larger number of hours spent per applicant (intensive search). On the other hand, greater direct hiring costs for sales and clerical positions reflect a more extensive search, particularly in an increased number of interviews per offer.

Table 9 indicates the effects of other variables added to the third specification of the model of direct hiring costs. The logarithm of the overall quit rate at the firm for the year 1981 (set I) does not appear to be an important explanatory variable. The second set of new variables (set II) involves measures of the compensation paid a new employee in terms of the typical hourly wage after two years on the job (HRWAGE), and the difference

TABLE 9

ESTIMATES OF DETERMINANTS OF HIRING COST AND ITS COMPONENTS:
IMPACT OF ADDITIONAL SETS OF VARIABLES ON
THIRD SPECIFICATION

Sets of Explanatory Variables Added	Mean	Dependent Variable: Hiring Costs In Hours (log) 1	Hours Spent per Applicant (log) 2	Applicants per Interview (log) 3	Interviews per Offer (log) 4	No. of Offers (log) 5
Size of Employer (log)	2.77	.14 (6.95)	-.03 (1.76)	.09 (7.66)	.08 (5.01)	.005 (1.28)
I[a] Quit Rate (log)	-2.36	.001 (.64)	-.02 (1.43)	-.002 (.21)	.02 (1.67)	.003 (1.04)
II[b] Hourly Wage (log)	1.56	-.004 (.13)	.05 (1.97)	-.008 (.47)	-.05 (1.99)	-.003 (.49)
Wage Change, First 2 Years	2.91	.005 (3.50)	.002 (2.00)	-.0003 (.42)	.003 (2.43)	-.00005 (.20)
III[c] Promotion Based on Ability	.46	.06 (1.21)	.03 (.74)	-.02 (.79)	.05 (1.26)	-.0008 (.09)
Layoff Based on Ability	.47	.14 (2.71)	.15 (3.07)	-.009 (.30)	.0002 (.01)	.002 (.26)
IV[d] Prop. Appl. Reference-Checked	.42	.45 (7.55)	.79 (14.89)	-.36 (10.71)	.004 (.08)	.17 (1.56)
Prop. Appl. Called Back	.23	-.15 (2.27)	-.21 (3.52)	.33 (8.80)	-.24 (4.55)	-.03 (2.53)
V[e] Referral: Friend	.31	-.08 (1.24)	.15 (2.37)	-.08 (1.91)	-.15 (2.98)	-.002 (.15)
Referral: Relative	.10	-.39 (4.33)	.07 (.86)	-.06 (1.15)	-.40 (5.72)	.002 (.12)
Referral: News Ad	.12	.89 (10.35)	-.10 (1.20)	.13 (2.46)	.81 (11.97)	.06 (3.47)
Referral: Employment Service	.03	.50 (3.71)	.19 (1.45)	-.13 (1.64)	.40 (3.71)	.06 (2.21)
Referral: Prl. Empl. Service	.03	.55 (3.56)	.28 (1.88)	-.11 (1.21)	.31 (2.55)	.08 (2.64)
Referral: Govt. Agency	.01	.69 (2.19)	.28 (.92)	.02 (.12)	.19 (.77)	.20 (3.42)
Referral: Other Employer	.05	.29 (2.59)	.40 (3.69)	-.08 (1.15)	-.02 (.17)	-.01 (.69)

TABLE 9
Continued

Sets of Explanatory Variables Added	Mean	Dependent Variable: Hiring Costs In Hours (log) 1	Hours Spent per Applicant (log) 2	Applicants per Interview (log) 3	Interviews per Offer (log) 4	No. of Offers (log) 5
Referral: School	.04	.22 (1.67)	.13 (.97)	.10 (1.27)	.18 (1.69)	.03 (1.01)
Referral: Union	.01	-.85 (2.96)	-.07 (.25)	.09 (.52)	-.88 (3.79)	.01 (.20)
Referral: Other	.07	.10 (1.04)	.19 (1.94)	-.03 (.55)	-.06 (.69)	.006 (.32)

[a]Inclusion of the logarithm of the quit rate (LN(QUITRAT)) does not significantly alter coefficient on the other variable in regressions 1-5.

[b]Inclusion of the logarithm of the hourly wage (LN(HRWAGE)) and the rate of wage change (WAGECH) does not significantly alter coefficients on the other variables in regressions 1-5.

[c]Inclusion of the dummy variables indicating promotion or layoff is mainly on ability (PROMAB and LAOFFAB, respectively) and does not significantly alter coefficients on the other variables in regressions 1-5.

[d]Inclusion of the promotion of applicants reference-checked and the proportion called back for an interview (PROPREF and PROPCALL, respectively) reduces the coefficients on the dummy variables for temporary or seasonal jobs and for part-time jobs (TEMPSEA and PARTT) in regression 2 from -.17 to -.22 to -.09 and -.16, respectively.

[e]Inclusion of the source of new hire variables reduces the coefficient on the percentage unionized (UNION) from .002 to .001 in regressions 1 and 4. It reduces the coefficient on logarithm of employer size (LN(JUL31EMP)) from .07 and .04 to .05 and .02, respectively, in regressions 1 and 4. The excluded source of the new hire is walk-ins, which were the source of approximately 25 percent of the new hires.

etween this wage and the starting hourly wage (WAGECH). The results suggest that hiring costs are directly related to the wage change, but not to the hourly wage. To the ent that WAGECH is directly correlated with general training, the arguments for greater search associated with GENTRM provide one interpretation of the positive coefficients for WAGECH.

Variables in set III measure whether promotions and layoffs are based on ability or seniority. The first variable, PROMAB = 1, indicates that the basis on which people in this position are promoted is mainly ability (alternatives being solely seniority, mainly seniority, or some of both). LAOFFAB = 1, indicates that the basis for temporary layoffs is mainly productivity (alternatives being solely seniority, mainly seniority, or some of both). Employers whose basis for layoffs are mainly productivity appear to incur greater direct hiring costs, reflecting higher hours spent per applicant (intensive search). The addition of the variables in sets IV and V will be considered in subsequent sections of this chapter.

3.3 The Likelihood of Reference Checks

Up to this point, the measure of employer intensive search (i.e., the information gathered by the employer on each applicant) has been the number of hours spent per applicant. A second measure of intensive search is the likelihood that an applicant is reference-checked with a previous employer. Let PROPREF denote for each employer the number of applicants reference-checked divided by the number of applicants.

According to table 9 (set IV), an increase in the proportion of applicants reference-checked increases the hours spent per applicant. This is not surprising, since the act of checking references presumably involves time. What is of interest, however, is that employers who are more likely to check references of applicants see fewer applicants per employment offer. Thus, as we saw earlier with respect to the trade-off between the hours spent per applicant (intensive search) and applicants per employment offer (extensive search), there is also a trade-off between the proportion of applicants reference-checked and the number of applicants per employment offer.

Table 10, regression 1, indicates the relationship between the proportion of applicants reference-checked and the set of explanatory variables identical to the second specification of the direct hiring cost model (table 6). As expected, employers are less likely to reference-check applicants for seasonal, temporary, or part-time positions, and are more likely to reference-check applicants for positions involving substantial training or the use of costly machinery. One unexpected finding is that, although larger firms spend fewer hours per applicant, they are more likely to check the references of an applicant.

3.4 Employer Use of Prior Applicants

Thirty-five percent of the employers surveyed obtained some interviews from persons who had applied prior to the job vacancy and were called in for an interview when the vacancy arose. For these employers, approximately 66 percent of the applicants interviewed came from the pool of prior applicants. Table 11 indicates differences in the use of prior applicants as a source of interviewees by employer size and by occupation. CALLEDIN denotes the likelihood than an employer interviews prior applicants. CALLPROP is the proportion of applicants interviewed who were called in for those employers who use prior applicants as a source of interviewees. PROPCALL = CALLEDIN · CALLPROP indicates the overall average proportion of applicants interviewed who were called in. Table 11 suggests that the use of prior applicants is directly related to the size of the employer.

For employers who retain records of applicants and thus can call in prior applicants, there is the suggestion that these employers can screen applicants at a lower cost. The results reported in table 9 (set IV) bear this out; as the proportion of interviews of prior applicants rises, intensive search, as measured by the hours spent per applicant (HRSPERA), falls. Employers who use prior applicants also appear to place greater stress on application forms as a screening device. This is reflected in the fact that, as the proportion of interviews of prior applicants increases, the employer sees more applicants per interview (APERINT) but does fewer interviews per employment offer (INTPERO). Overall, extensive search (INTPERO · APERINT) increases slightly

TABLE 10

ESTIMATES OF DETERMINANTS OF PROPORTION OF APPLICANTS REFERENCE-CHECKED AND PROPORTION OF INTERVIEWS WITH INDIVIDUALS CALLED BACK

Explanatory Variable[c]	Mean	Dependent Variable: Proportion of Applicants Reference-Checked[a]	Dependent Variable: Proportion of Applicants Called Back[b]
Size of Employer (log)	2.77	.03 (3.56)	.04 (6.6)
Multiestablishment Employer	.26	.03 (1.40)	-.00008 (.00)
Rate of Visits (log)	-2.36	.008 (1.35)	.02 (3.29)
Rate of Phone Calls (log)	-2.16	.003 (.55)	.008 (1.71)
Percent Unionized	9.55	.0003 (.09)	.0004 (1.40)
On-the-Job Training (log)	4.00	.03 (5.40)	.002 (.40)
Size of Labor Market (log)	11.14	.01 (1.64)	-.02 (3.22)
Gen. Training Many Companies	.44	.0009 (.04)	-.05 (2.36)
Gen. Training Few Companies	.28	.02 (1.03)	-.04 (2.01)
Part-time	.14	-.07 (2.54)	.56 (2.38)
Temporary or Seasonal Job	.15	-.09 (3.46)	.23 (1.00)
Cost of Machines (log)	8.61	.015 (2.72)	-.002 (.33)
More than One Opening	.13	.13 (.47)	.008 (.35)
Advance Notice of Opening	.53	.03 (1.54)	-.01 (.76)
Constant		-.001 (.01)	.42 (5.04)
R^2 (Adjusted)		.05	.04
Std. Error		.41	.37

[a]The specification used is the one used in table 6 (second specification). If the third specification (table 7) is used, the coefficient on LN(JUL81EMP) drops to .007, whereas the coefficient on DIFFIR is .09 with a t-statistic of 2.77 and the coefficient on DIFFERS is .12 with a t-statistic of 5.33. The coefficients on LN(DUPROBPD) and NOPROB are not significantly different from zero.

[b]The specification used is the one used in table 6 (second specification). If the third specification (table 7) is used, none of the new variables, DIFFER, DIFFIRS, NOPROB, and LN(DUPROBPD), are significantly different from zero.

[c]Variables are defined in table 4.

TABLE 11

EMPLOYER USE OF PRIOR APPLICANTS

	Proportion of Employers Who Call In Prior Applicants (CALLEDIN)	For Employers Who Call In Prior Applicants, Proportions of Interviews with Prior Applicants (CALLPROP)	Proportion of Interviews with Prior Applicants (PROPCALL)	Number of Employers
Number of Employees				
1-9	.27	.70	.19	913
10-25	.34	.68	.23	578
26-250	.43	.65	.28	661
251+	.58	.62	.36	112
All	.35	.66	.23	2264
Occupation				
Professional or Technical	.30	.60	.18	183
Managerial	.29	.59	.17	85
Clerical	.33	.61	.20	539
Sales	.34	.65	.22	308
Service	.42	.69	.29	427
Blue Collar	.36	.69	.25	722
All	.35	.66	.23	2264

with increases in the proportion interviewed who are prio· applicants. However, the fall in intensive search (HRSPERA) dominates the rise in extensive search, such that direct hiring costs fall with increases in PROPCALL.

3.5 Recruitment Source of the New Hire

Employers were asked to indicate how the new employee was recruited; that is, was the new employee a friend of a current employee (FRIEND), a relative of a current employee (RELAT), a walk-in (WALKIN), a respondent to a newspaper ad (NEWSAD), or a referral. Referrals were divided into referrals from the Employment Service (ESREF), a private employment agency (PRIREF), a school (SCHREF), a union (UNIREF), another employer (EMPREF), or some other referral source (OTHREF).

For the sample of employers who responded to questions on the source of the new hire, table 12 indicates the distribution of different sources of the new employees. Of the four most common sources, larger firms tend to have walk-ins and newspaper ads as the source of the new employees, whereas smaller employers tend to obtain new employees through the network of friends or relatives of current employees. Interestingly, it appears that large firms are the ones more likely to use either public or private employment agencies.

According to table 12, positions that are temporary or seasonal in nature are more likely to be filled by a friend or relative of a current employee or by a walk-in. On the other hand, permanent positions are more likely to have, as a source of the new hire, one that involves explicit actions on the part of employers: newspaper ads or referrals sought from public or private employment agencies or other employers.

The third column of table 12 gives the number of days between the time the employer started looking for someone to fill the job opening and the time a new employee started to work. The fourth column indicates the proportion of the employers that reported that they did not have to look and the job was filled in less than a day. Not surprisingly, when a job is filled by a friend or relative of a current employee, a walk-in, or a union referral, the time between looking for someone and the new employee starting to work is lower, and the proportion of employers reporting not having to look is higher. This

TABLE 12

NEW EMPLOYEES' JOB SEARCH METHODS

Source of New Hire	Number of Employees per Employer	Position Temporary or Seasonal	Days to Fill Vacancy	Zero Days to Fill Vacancy	Number of Employers
Friend	31	.16	14.9	.22	696
Relative	36	.24	13.4	.35	225
Walk-In	83.5	.18	12.4	.18	549
News Ad	77	.05	17.8	.004	261
Employment Service	118	.08	18.6	.11	79
Private Employment Service	120	.03	25.6	.05	60
School	88	.13	19.4	.17	82
Union	181	.56	4.7	.25	16
Other Employer	60	.08	26.4	.131	124
Other	37	.10	19.3	.13	125
All	61	.15	15.9	.18	2217

reflects the likelihood that the information about the job position is anticipated and passed along informal channels to qualified job seekers. It also explains why fewer applicants are interviewed per offer and why direct hiring costs are lower in these cases (see table 9, set V). In contrast, when the source of the new employee is newspaper ads or a referral from employment agencies, schools, or other employers, this is indicative of a greater time between the employer starting to look for a new employee and the new employee starting to work (see table 12), as well as a greater direct hiring cost, typically due to an increase in the number of applicants interviewed per employment offer (see table 9, set V).

IV. THE EFFECTS OF RECRUITMENT STRATEGY ON THE FLOW OF JOB SEEKERS CONTACTING A FIRM

The flow of job seekers contacting a firm about employment is an indicator of the position of the labor supply curve that faces particular firms. It is a better indicator than employment size because the stock of employees at a firm reflects current demand for labor by the firm much more than it reflects the willingness of workers to take a job there. Many firms face an excess supply of labor at their current wage rate. Rates of attempted entry into a job (properly controlled for the firm's recruitment efforts for labor market tightness and for the number of vacancies) are useful indicators of this excess supply.

In most segments of the labor market, it is the job, not the potential candidate, that is viewed as the prize. Only 18.5 percent of employer respondents reported a vacancy in any job at the time of the interview. Less than 1 percent of all available positions were vacant. Twenty-five percent of employers reported a vacancy at some time in the past two weeks. During that two-week period, the firms with vacancies received an average of 12.5 unduplicated contacts from job seekers per vacancy. (The geometric mean of unduplicated contacts per vacancy was 5.4.) Firms without vacancies also receive lots of job seekers contacting them. During the two week period, such firms averaged 1.2 visits for every ten employees.

The issue to be addressed in this chapter of the report is what determines the flow of job seekers:

- How responsive is the flow of contacts (phone calls, personal visits, and applications) to such current recruitment efforts as placing ads or listing a job at the employment service?
- How responsive is the flow of contacts to the number of vacancies?
- How sensitive is the flow of visitors to the way in which phone calls are handled and to whether walk-ins are allowed to file an application?
- How sensitive is the flow of contacts to the size of the firm, growth of the firm, and past rates of turnover?
- How sensitive is the flow of contacts to the firm's wage level and the reputation of the firm as a good place to work?

4.1 Theory and Specification of the Model

The flow of people seeking employment who contact a firm results from the aggregation of myriad individual decisions. The flow of contacts depends on the number of people in the labor market seeking work, N; the proportion of these that are aware of the existence of the firm "j", P_j^a; and the probability that, given awareness, they will decide to make a contact at the "j"th firm during the time period, P_j^{ac}. The product of these terms provides the expected number of contacts at the "j"th firm. In notational terms;

(1) Expected contacts $= N \cdot P_j^c = P_j^{ac} \cdot P_j^a \cdot N$

where P_j^c = the probability that the a job seeker will contact the "j"th firm during a specific time interval,

P_j^a = the probability that a job seeker is aware of the existence of the "j"th firm,

P_j^{ac} = the probability that a job seeker who is aware of the existence of the "j"th firm will contact it.

Job seekers cannot simultaneously contact all employers they know about, so they must choose which employer to contact first. Assuming that job seekers know nothing about potential employers, they will visit firms in random order and P_j^{ac} will be constant across firms and a theory of the flow of job-seeker contacts at a particular firm need only explain the salience of firm "j", P_j^a, and the total number of job seekers, N. In fact, however, the "i"th job seeker typically has information for a number of firms about his/her chances of getting a job offer now, P_{ij}^n, or in the future, P_{ij}^f, and the quality of the jobs that might be offered, Y_{ij}. Under this circumstance, optimal search is characterized by an optimal search order and a changing optimal reservation compensation.

Weitzman (1979) has shown that optimal search order is obtained by ranking firms in order of their reservation compensation, Z_{ij}, which is determined by the probability of being offered a job (now or in the future), the quality of the job, and the cost of contacting the "j"th firm. Search starts at the highest Z_{ij} and sampling continues until the maximum sampled reward exceeds the reservation compensation of every remaining unsampled firm. There are two types of search costs: C_{ij}, the fixed cost of contacting the "j"th firm (e.g., bus fare, gas for car, phone charge) and a time cost,

$(1-e^{-rt_j})Z_{ij}$, where t_j is the amount of time required to contact firm "j" (before the next contact can be made) and r is the discount rate. The benefit is the expected difference between Y_{ij}, the present discounted value of the compensation package offered by the "j"th firm, and the reservation price for that firm, Z_{ij}, discounted to reflect the fact that the individual will not enter the job immediately upon making application. Z_{ij} is the reservation price that equates the benefits and costs of sampling firm "j" and is calculated implicity from the following:

$$(2)\quad C_{ij} + (1-e^{-rt_j})Z_{ij} = e^{-rt_j}\int_{Z_{ij}}^{\infty}(Y_{ij} - Z_{ij})\, dF_{ij}(Y_{ij})$$

where C_{ij} = cost of contacting the "j"th firm,

Z_{ij} = "i"th worker's reservation price for accepting a job at "j"th firm assumed to be a function of Y_{ij},

r = discount rate.

The Z_{ij} (and therefore the ranking of a particular firm in the optimal search order) is greater if there is a higher P^n_{ij}, P^f_{ij} or Y_{ij} or a lower C_{ij} or t_j, other things being equal.

An important implication of the Weitzman systematic search theory is that individuals will generally be more sensitive to the quality of the job than to the probability of an offer. Let us assume, for example, that a job seeker who currently earns $20,000 a year must choose which of two potential employers to visit first--firm A where there is a .60 probability of being offered a $22,000 year job or firm B where there is a .10 probability of being offered a $30,000 a year job. Assume each visit costs $100 and the job is expected to last for one year. The individual has three search strategies open: (1) visit both and then decide, (2) visit A first and take its job if offered, visit B only if A makes no offer; and (3) visit B first and take its job if offered; visit A only if B makes no offer. Despite the fact that the expected benefit of visiting A is greater than the expected benefit of visiting B, the best strategy to follow is (3) "visit B first," with (2) "visit A first" coming in last.[16] Thus the firm with the more attractive job and

16. The expected benefit of the "visit both" strategy is 2(-100) + .10 (10000) + .9 (.60)(2000) = $1,800. The expected benefit of "visit A first" strategy is 1.50(-100) + .60(2000) + .40 (.10) (10,000) = $1,450. The expected benefit of the preferred strategy is 1.90(-100) + (.10) (10,000) + (.90) (.60) (2,000) = $1,890.

relatively low probability of an offer is visited first and the firm with the highest probability of an offer but somewhat less attractive jobs is visited only if the first visit is unsuccessful.

At each contact there is some probability that an offer will be received and accepted and, therefore, that search will be terminated. As a consequence, firms that are placed at the beginning of the search order will receive more contacts by job seekers than firms that are ranked lower.

Thus the flow of contacts depends upon four things:

- The number of job seekers who know of the existence of the firm
- Beliefs about the probability of receiving a job offer
- Perceptions of the benefits of accepting such a job offer relative to other alternatives
- The costs of making a contact

The following sections address each of these factors, in turn.

4.1.1 Number of Knowledgeable Job Seekers

The number of job seekers familiar with a particular establishment depends on the size of the labor market, the proportion of the labor force that is seeking a job, and the establishment's salience in the labor market. Assuming these factors operate multiplicatively, the model of number of job seekers aware of the "j"th employer may be specified in the following logarithmic form:

$$
\begin{aligned}
(3)\ \ln(P_j^a \cdot N) = {} & a_0 + a_1 \cdot \ln(\text{total employment in the labor market}) \\
& + a_2 \cdot \ln(\text{unemployment rate}) \\
& + a_3 \cdot \ln(\text{market emp}_{\text{May 81}}/\text{market emp}_{\text{May 80}}) \\
& + a_4 \cdot \ln(\text{number of employers in the labor market}) \\
& + a_5 \cdot \ln(\text{total employment at the establishment}) \\
& + a_6 \cdot \ln(\text{ratio of firm size to establishment size}) \\
& + a_7 \cdot \ln(\text{publicity about the firm}) \\
& + u_j
\end{aligned}
$$

The salience of any particular employer is negatively related to how many competitors it has, so a_4 would be expected to be negative. Data are not available on the total number of employers in the labor market, however; so when the model is estimated, the coefficient on labor market size will tend to pick up both effects ($\hat{a}_1=a_1+a_4g$, where g is the elasticity of the number of employers with respect total employment). Because of this effect, $\hat{a}_1$ is likely to be small and may, in fact, be negative. It is hypothesized that low unemployment rates and fast-growing labor markets decrease the number of knowledgable job seekers, so that $a_2>0$ and $a_3<0$. Large establishments are inevitably more salient, but the proportion of a labor market that is familiar with a large firm is not proportional to size, so that $0<a_5<1$. Being part of a larger national corporation is also believed to have a positive effect on salience, so that $a_6>0$.

4.1.2 The Perceived Probability of an Offer

Individuals' perceived probability of an offer in response to a contact depends on their perceptions of--

- whether the firm has positions for which the particular individual is qualified,
- whether there is currently a vacancy in that position,
- whether there may be a vacancy in that position in the future,
- whether an application now makes one eligible for future vacancies should they arise, and
- how probable an offer is if there is a vacancy.

For the "i"th individual considering a contact at the "j"th firm, that person's perceived probability of receiving an immediate offer depends on a joint density function that reflects (1) the current number of vacancies at firm "j", V_j^n, (2) the likelihood that a vacancy at firm "j" is a position individual "i" is seeking, L_{ij}, and (3) the probability that the firm's hiring standards for such a position, Q_{ij}^*, are below the individual's set of qualifications, Q_{ij}. Combining (1) and (2) yields the probability of a vacancy at the firm in a position which the individual is seeking, V_{ij}^n (assume $V_{ij}^n \leq 1$). Assuming independence of V_{ij}^n and Q_{ij}^* allows the joint density function to be written as (4).

$$(4)\quad h^{n}(Q^{*}_{ij},\ V^{n}_{ij}) = g(Q^{*}_{ij}) \cdot V^{n}_{ij}$$

The probability of a future offer depends analogously on its own joint density function.

$$(5)\quad h^{f}(Q^{*}_{ij},\ V^{f}_{ij}) = g(Q^{*}_{ij}) \cdot V^{f}_{ij}$$

Thus the probability that individual "i" receives an immediate offer upon contacting firm "j", P^{n}_{ij}, is given in equation (6).

$$(6)\quad P^{n}_{ij} = V^{n}_{i} \int_{0}^{Q_{ij}} g(Q^{*}_{ij})\, dQ^{*}_{ij}$$

Similarly, the probability of a future offer upon contacting firm "j", P_{ij}, is as follows:

$$(7)\quad P^{f}_{ij} = V^{f}_{ij} \int_{0}^{Q_{ij}} g(Q^{*}_{ij})\, dQ^{*}_{ij}$$

The individual's perception of these joint density functions is based on an information set that contains knowledge of the following:

- Permanent characteristics of the establishment that are related to L_{ij}, such as the occupational distribution of the firm and the generality of the skills needed to perform the work
- Temporary characteristics of the firm, such as the number of vacancies, whether a job is being advertised in the paper, whether the firm has contacted a school or union for a referral, and recent growth rate of employment
- Permanent characteristics of the firm that in the absence of exact current information, predict the likelihood and number of present and future vacancies, such as size, quit rates, long-term growth rates, and proportion of the work force under age twenty-five
- Recruitment and selection policies that determine whether a current contact makes one eligible for future as well as present vacancies

Assuming that these factors enter a model of P^n_{ij} and P^f_{ij} multiplicatively, the model is as follows:

$$
\begin{aligned}
(8)\ \ln(P^n_{ij}) = {} & b_0 + b_1\,(\text{occupational distribution}) \\
& + b_2\,(\text{skills generality}) \\
& + b_3\,\ln(\text{employment at establishment}) \\
& + b_4\,(\text{quit or new hire rate}) \\
& + b_5\,(\text{proportion workers under age twenty-five}) \\
& + b_6\,(\text{long term growth rate}) \\
& + b_7\,(\text{vacancies}) \\
& + b_8\,(\text{recruitment efforts}) \\
& + b_9\,(\text{employment change}) \\
& + b_{10}\,(\text{unionization in the construction industry}) \\
& + w_{ij}
\end{aligned}
$$

The coefficients b_2, b_3, b_4, b_5, b_6, b_7, and b_8 are all expected to be positive. The elasticity of P^n_{ij} with respect to current establishment size, b_3, will be less than 1, partly because current information on vacancies is sometimes available, thus alleviating the need for size as a predictor of V_{ij}, and partly because new hire rates are lower for large establishments. Although some of the establishments in the sample have recently experienced big declines in employment, many job seekers may not have been aware of these recent declines (or believed them to be a temporary or seasonal phenomenon), so contact rates at these establishments may have been based on some average of the firms' previous and current size.

Since the primary establishment size variable is current employment, the recent rate of decline of employment (set to zero when rate of growth is positive) is hypothesized to have a positive effect on contacts. There is no prediction about the effects of positive rates of recent growth of employment on contacts. In the construction industry, unionization often limits access to construction jobs to union members. It also often means that hiring occurs through union referral services. Both of these phenomena should significantly reduce the number of people who perceive themselves to have a chance of receiving a job offer at a unionized construction firm, so that b_{10} may be expected to be negative.

The empirical model of the perceived probability of receiving an offer to fill a future vacancy is different from the foregoing model in only two respects. First, the vacancies that are entered in the model are expected future job openings rather than current vacancies. Second, new variables need to be added that capture the firm's policy regarding accepting and considering current applications for future vacancies.

4.1.3 The Benefit of Receiving an Offer

Weitzman (1979) has shown that the criterion function by which firms are ranked will, in most cases, be more responsive to the benefit of receiving an offer than to the probability of an offer. The benefits of an offer depend upon the pecuniary and nonpecuniary benefits of the job and the probability of staying in the job for an extended period of time. This relationship is shown in equation (9).

$$
\begin{aligned}
(9)\ Y_{ij} = {} & c_0 + c_1 \ln[\text{wage}_j/\text{wage (labor market)}] \\
& + c_2\ (\text{piece rate or full commission}) \\
& + c_3\ (\text{partial incentive}) \\
& + c_4\ (\text{unionization}) \\
& + c_5\ (\text{difficulty of firing}) \\
& + c_6\ (\text{length of probationary period}) \\
& + c_7\ (\text{seniority is the basis of layoff}) \\
& + c_8\ (\text{retention of new hires}) \\
& + c_9\ (\text{training received}) \\
& + c_{10}(\text{generality of training}) \\
& + c_{11} \ln(\text{size of the establishment and the firm}) \\
& + v_{ij}
\end{aligned}
$$

Coefficients on the relative wage, c_1, the amount of training received by the typical worker, c_9, the generality of the training, c_{10}, and the size of the firm and the establishment, c_{11}, are all hypothesized to be positive because they measure (or are correlated with unmeasured) positive pecuniary and nonpecuniary characteristics of the jobs at the firm. Given the hourly wage, basing pay either fully or partially on an incentive system is expected to reduce the number of job seekers contacting the firm, that is c_2

and $c_3 \leq 0$. This is because many workers do not like jobs paid on an incentive basis and because workers will not apply for the jobs unless they feel they have a particular aptitude for them. Unionization of the firm is associated with more attractive jobs and lower quit rates so that c_4 may be expected to be positive. Firms that offer short probationary periods and strong job security guarantees against firing (once the probationary period is completed) will be perceived as offering a more attractive work environment, so that $c_5 > 0$ and $c_6 < 0$.

If layoff is based on seniority rather than productivity, there is no way a new hire can avoid being laid off in a downturn. The job becomes more attractive to those with seniority and less attractive to those without it. Since new hires will lack seniority, the coefficient c_7 may be expected to be negative. High retention rates for new hires suggests that new employees are satisfied with their jobs and that new hires can anticipate being able to stay in the job for a reasonable period of time, so that high retention rates of new hires may be expected to be related positively to $E(Y_{ij})$, that is $c_8 > 0$. Low turnover of new hires will also be associated with fewer vacancies so the net effect of the new hire retention ratio on contacts may not be positive unless good controls for the expected number of vacancies (e.g., the aggregate rate of new hires or quits) are entered in the model.

4.1.4 Cost of a Contact

The final determinant of the choice of which firm to approach first is the cost of a contact. Contact is a generic term that encompasses phone calls about job possibilities, PHONES, personal visits to a firm, VISITS, and filling out applications (either during a personal visit or by mail), APPLICATIONS. The cost of a contact depends upon the type of contact. Phone calls are significantly cheaper than personal visits. Applying for a job almost always requires a personal visit, however, so phone calls are typically used to screen firms (i.e., assess P^n_{ij}, P^f_{ij}, and $E(Y_{ij})$) before deciding whether to visit in person and file a written application. Because a personal visit will eventually be necessary, the expected cost of a visit will influence the number of phone calls received. If the firm is encouraging callers to come in to apply for a job, the cost of a phone contact may also influence the number of visits.

One would expect there to be significant industry variation in the cost of each type of contact. Costs of personal visits are particularly low for employers that sell to the general public and therefore have large flows of people passing through or by their store. Retail stores are also easy to find in the Yellow Pages and are also open for longer hours. All of these factors lower the cost of contacting them about a job. Consequently, they may be expected to receive more phone calls and visits than most other types of firms. In the construction industry, the person who does the hiring will often be hard to find (sometimes the person will be at one site, sometimes at another site, sometimes buying materials, etc.) and typically will not want to be interrupted if he or she can be found. Phone contacts will, as a result, be the preferred mode of making contacts. A further reason for expecting an emphasis on phone contacts is the volatility of construction employment and the consequently greater value of screening firms before visiting them.

Manufacturing firms are generally not in the Yellow Pages, so phone calls inquiring about job prospects are possible only if the individual knows the name of the firm. Manufacturing plants require lots of space and tend to be concentrated in certain parts of town, so that driving around the appropriate section of town will generally uncover a good number of potential employers. This suggests that contacting a manufacturing establishment about a job will typically be more expensive than contacting a retail establishment.

Formalizing the personnel function in a firm is likely to have important consequences for the cost of contacting the firm and the way job applicants are treated. A personnel office is likely to log incoming job inquiries and keep the phones covered on a more regular basis. This should lower the costs of phone contacts and increase the number of such contacts that are reported in the survey. No hypotheses are maintained on the effect of a personnel office on the cost and number of personal visits.

Assuming that the factors described above enter additively, the model of the cost of a contact is:

$$(10)\quad C_{ij} = d_0 + d_1\,(\text{industry}) + d_2\,(\text{personnel office}) + d_3\,(\text{location}) + z_{ij}$$

4.1.5 The Full Empirical Model

The probability that a job seeker who is aware of the "j"th firm will contact it depends on his or her reservation compensation for that firm, Z_{ij}. This in turn depends upon the probability of an offer now, P^n_{ij}, or in the future, P^f_{ij}, the attractiveness of the job that may be offered, $E(Y_{ij})$; the fixed, out-of-pocket costs, C_{ij}; and the time costs, $(1-e^{-rt_j})Z_{ij}$, of a contact. The following expression then holds for the "i"th individual's probability of being aware of and contacting the "j" firm:

$$(11)\quad P^{ac}_{ij} = g(Z_{ij}) = g(P^n_{ij},\ P^f_{ij},\ E(Y_{ij}),\ C_{ij},\ (1-e^{rt_j})\cdot Z_{ij})$$

The aggregation of P^{ac}_{ij} across all job seekers aware of j will be approximated by the logarithmic equation:

$$(12)\quad \ln(P^{ac}_j) = B_0 + B_1\ \ln P^n_j + B_2\ \ln P^f_j + B_3 Y^*_j + B_4 C_j + e'_j$$

The logarithm of the number of contacts may also be written as follows:

$$(13)\quad \ln(\text{contacts}_j) = \ln(P^{ac}_j) + \ln(P^a_j \cdot N)$$

Thus--

$$(14)\quad \ln(\text{contacts}_j) = B_0 + B_1\ \ln P^n_j + B_2\ \ln P^f_j + B_3 Y^*_j + B_4 C_j + \ln(P^a_j \cdot N) + e''_j$$

Estimation of (14) provides direct estimates of coefficients on variables that enter only one equation (e.g., a_2 and a_3 on equation 3). Variables that influence P^{ac}_j in more than one way or that influence both the number of searchers aware of the firm and P^{ac}_j have coefficients that combine all influences. The coefficient on the logarithm of employment at the establishment, for instance, will be an estimate of $a_5+B_1 b'_3+B_3 c_{11}$ [b'_3 comes from (8) with P^f_{ij}] as the dependent variable.

The results of estimating (14) are presented in the sections that follow. Section 4.2 examines how responsive the number of job-seeking contacts is to the immediate circumstances of the firm--its current number of vacancies and its curre recruitment efforts. Section 4.3 examines the responsiveness of contacts to permanent characteristics of the employer that are associated with the likelihood of a current or future vacancy. Section 4.4 examines the

effects that the attractiveness of jobs at the firm has upon the flow of job-seeker contacts. Section 4.5 tests the response of contacts to demand pressure in the local labor market and to costs of a contact.

4.2 The Response to the Number of Vacancies and Publicity about Vacancies

4.2.1 Vacancies

Vacancies are short-lived and highly variable. As shown in table 13, only 19 percent of the firms in the employer survey reported having a vacancy at the time they were interviewed, and only 28 percent reported anticipating an opening in the future. The number of current vacancies had a mean of 0.53 and a standard deviation of 2.83. The number of anticipated future openings had a mean of 1.29 and a standard deviation of 11.95. Most of the firms that had no recent, current, or future openings had nevertheless received many phone calls and visits from job seekers.

TABLE 13

NUMBERS OF JOB VACANCIES

	Vacancies Two Weeks Ago	Job Offers Last Two Wks	Vacancies Now	Openings Expected In Future
Proportion with at Least One Opening	.25	.27	.19	.28
Arithmetic Mean (over full sample)	.91	1.00	.53	1.29
Standard Deviation	5.66	6.12	2.83	11.95
For Firms with at Least One Opening				
Arithmetic Mean	3.6	3.7	2.8	4.6
Geometric Mean	2.00	NA	NA	1.94

Telephone calls and visits are costly for both the firm and the job seeker. Since job applications typically do not remain alive for very long, these costs are reduced if visits to firms are timed to coincide with the instance

of a vacancy. If information about present and future vacancies were complete and costless, a strong correlation would be expected between the number of vacancies and the frequency of phone calls and visits by job seekers. In fact, however, the correlation of vacancies with phone calls is 0.404, and with visits is 0.466. This suggests that information about vacancies is somewhat costly to obtain. To some extent this is inherent in the technology of vacancy information gathering and dissemination. It is also a consequence of many firms' conscious preference for restricting the number of job applicants. Screening job seekers is costly, and at some point the firm receives no net benefit from screening another applicant. In addition, many employers perceive certain recruitment channels to yield better job candidates than others. These two factors cause many firms to publicize their vacancies in only a few selected outlets and to eschew modes of advertising such as the newspapers or the employment service that may result in too many or the wrong kinds of job applicants. In the sample of firms surveyed, only 21 percent of the firms with vacancies had asked for referrals from the state employment service and only 30 percent had placed an ad in a newspaper.

The fact that vacancies and contacts are not perfectly correlated is important, but the fact that they are positively correlated and that partial correlations remain positive even when firm size and other firm characteristics are controlled is just as important. Table 14 examines the extent of this dependence by regressing the log of the number of contacts on nine variables characterizing the type and number of vacancies and a set of control variables. The nine vacancy variables are (1) the log of the number of vacancies two weeks ago and (2) its square, (3) the log of the number of new vacancies generated in the last two weeks and (4) its square, (5) the log of the number of future openings and (6) its square, and dummies for (7) no new vacancies, (8) no future openings, and (9) do not know how many future openings.

A comparison of rows 11 and 12 of the table reveals the effect on R^2 of adding the nine vacancy variables to a model that contains establishment and firm size, dummies for industry, a dummy for unionized construction firms, the establishment's new hire rate in 1981, and three variables characterizing local labor market conditions. The F-statistics for a test of the hypothesis

TABLE 14

IMPACT OF THE NUMBER OF VACANCIES*

		ln MAX CONTACTS	ln PHONES	ln VISITS	ln APPLICATIONS
1)	No vacancies past, present, or future	0	0	0	0
2)	One vacancy two weeks ago	.36	.32	.26	.45
3)	Ten vacancies two weeks ago	1.00	.89	.80	1.36
4)	Forty vacancies two weeks ago	.99	.86	1.03	1.57
5)	Some, but don't know how many future vacancies	.25	.35	.29	.40
6)	One future vacancy	-.01	-.09	-.05	-.07
7)	Ten future vacancies	.26	.23	.20	.38
8)	Forty future vacancies	.28	.32	.06	-.09
9)	One new vacancy	-.31	-.20	-.16	-.26
10)	Ten new vacancies	.76	.81	.61	1.07
11)	R^2 with size, industry, new hire only	.394	.329	.365	.360
12)	R^2 with nine vacancy variables added	.424	.351	.403	.434
13)	F-test on vacancy variables	14.1	8.3	24.5	45.0

*Measurements of recruitment efforts and policy regarding phone calls are not included in the models reported in table 14.

that these nine variables contribute nothing to the explanation of contacts (line 3) indicate that vacancies are an important predictor of the number of contacts that a firm receives. Vacancies make only a moderate contribution to the explanation of phone calls (PHONES) and unduplicated contacts (MAX CONTACTS). VISITS and APPLICATIONS are much more affected by vacancies. The addition of the nine vacancy variables to the model increases the R^2 of the VISITS model by 15 percent and the R^2 of the APPLICATIONS model by 25 percent. The greater responsiveness of VISITS and APPLICATIONS to vacancies no doubt results from the feedback given over the phone to inquiring job seekers and shifts in the proportions of visitors that are allowed to apply.

Point estimates of the impact that various configurations of vacancies have upon the number of job seeker contacts are presented in the first ten rows of table 14. These estimates are obtained from a model that does not contain measures of recruitment effort or policies regarding the handling of phone calls from job seekers. The impact of one vacancy at the beginning of the two-week period on the flow of contacts can be assessed by comparing rows 1 and 2. The impact of ten and forty vacancies can be assessed by examining rows 3 and 4. MAXCONTACTS, the maximum of phone inquiries, personal visits, and applications, gives a minimum estimate of the unduplicated number of job seekers who contacted the establishment in the two-week period immediately preceding the survey. One vacancy at the beginning of the two-week period is associated with a 43 percent increase in MAXCONTACTS. Ten such vacancies are associated with a 137 percent increase and 40 vacancies with a 94 percent increase. For firms with vacancies the ratio of the mean of MAXCONTACTS's to the mean number of vacancies is 5.9. At the mean number of vacancies (4.9) an extra vacancy is associated with only 1.3 extra MAXCONTACTS.

The staging of the application process gives the firm greater influence over VISITS and APPLICATIONS than over PHONES. Job seekers calling at firms can be encouraged or discouraged to visit personally. Walk-ins can be given an application to fill out or told there is no point in filing an application with the firm. Job seekers who are using the telephone to screen firms will decide whether to visit based upon what they learn about the vacancy situation. For these reasons, VISITS and (especially) APPLICATIONS may be expected to be more responsive to the existence and number of vacancies than PHONES.

This presumption is supported by the data. Ten vacancies cause phone calls to rise by 108 percent, visits to rise by 189 percent, and applications to rise by 400 percent.

The response of the indicators of job-seeker contacts to vacancies that arise over the course of the two-week measurement period (rows 9 and 10 of table 14) seems to be significantly smaller than their response to the stock of vacancies at the beginning of the period. Comparing row 9 to row 2 and row 10 to row 3 demonstrates this fact. If a single vacancy is new rather than old (e.g., existing at the beginning of the two-week reporting point for contacts), the equation predicts that MAXCONTACTS will be 29 percent lower. PHONES will be 15 percent lower, VISITS will be 27 percent lower, and APPLICATIONS will be 45 percent lower. If ten vacancies are new rather than old, the equations predict that MAXCONTACTS will be 24 percent lower, PHONES will be 18 percent lower, VISITS will be 24 percent lower, and APPLICATIONS will be 55 percent lower. This phenomenon is due to delays in publicizing the existence and number of vacancies and delays in job-seeker responses to this information. Ten new vacancies, however, seem to induce an increase in MAXCONTACTS of 79 percent, in PHONES of 72 percent, in VISITS of 121 percent, and in APPLICATIONS of 83 percent. The size of these responses is large, suggesting that when the number of new vacancies is above some minimum, the transmission of the signal that vacancies now exist at firm "j" and the response to this signal can be quite rapid indeed.

Openings anticipated for the future have a much smaller impact on the flow of contacts than the stock or flow of current vacancies. Only one such opening has essentially no effect on any of the measures of job-seeker contacts. Expecting some vacancies, but not knowing how many, is associated with 26 percent more MAXCONTACTS, 30 percent more phone calls, 42 percent more visits and 56 percent more applications. Expecting 10 openings in the future increases MAXCONTACTS by 25 percent, phone calls by 18 percent, visits by 27 percent, and applications by 49 percent. Increasing the number of future openings to forty from ten is associated with a small increase in phone calls but declines in visits and applications, and no change in MAXCONTACTS. The smaller size of the response suggests that job seekers are less attracted by the prospect of an opening in the future than by a current vacancy, and that

any firms do not publicize openings until the need to fill them is immediate. Nevertheless, the fact that the firm's report of expected future vacancies has a significant positive impact on job seeker contacts and the number of applications accepted when permanent features of the firm that predict the general likelihood of vacancies such as size, last year's new hire rate, and recent employment growth rates are controlled suggests that the employer is not the only one who knows about the company's future hiring plans.

Also implied is that at least some firms stockpile job applications with an eye to calling in the applicants when a need for their services arises. An examination of the eighth row of table 15 reveals that job seekers are aware of which firms stockpile applications and call in past applicants for interviews for jobs that open later, and that job seekers take this into account in selecting which firm to contact. The variable that allows a test for this effect is a dummy variable that describes, for a randomly selected hiring episode a year or so earlier, whether any of those interviewed had applied prior to the job opening and were called in for an interview after the vacancy arose. This variable has a positive and statistically significant impact on all four indicators of job seeker contacts. The increase is 38 percent for MAXCONTACTS, 35 percent for phone calls, 44 percent for visits and 42 percent for applications.[17]

4.2.2 Recruitment Efforts

One of the reasons that the response of job-seeker contacts to the number of vacancies is not larger is that many firms do not feel the need to stimulate additional phone calls and visits by job applicants. They can fill any vacancy they have either out of stockpiled job applications or from their unsolicited flow of job seekers. If an urgent need to hire a large number of new workers were to arise, these firms would have in reserve the ability to increase the flow of job-seeker contacts quickly by advertising or asking for referrals. How responsive is the flow of job-seeker contacts to the firms' conscious efforts to get the word out about a vacancy? The survey asked which publicity mechanisms were being used over the previous two weeks to attract job seekers, so this question can be addressed.

17. The survey form is provided in an appendix to this report.

TABLE 15

IMPACT OF RECRUITMENT EFFORTS AND POLICIES ON CONTACTS

	LOG MAX-CONTACTS		LOG PHONES		LOG VISITS		LOG APPLICATIONS	
During last ten days								
Announced Vacancy to Current Employees	.139*	(1.8)	.181**	(2.2)	.107	(1.5)	.212***	(3.1)
Advertised in the paper	.470***	(4.9)	.424***	(4.0)	.417***	(4.6)	.539***	(6.2)
Displayed help wanted sign	-.043	(.3)	-.011	(.1)	-.021	(.2)	.105	(.9)
Asked for referrals from union or employment agency	.018	(.2)	.014	(.1)	.005	(0.0)	.091	(.8)
Asked for referral from const. union	-.137	(.3)	.130	(.2)	-.159	(.3)	-.163	(.4)
Asked for referrals from state employment service	.394***	(3.6)	.406***	(3.3)	.184*	(1.8)	.027	(.3)
Made any other efforts	-.275***	(2.6)	-.211*	(1.8)	-.285***	(2.8)	-.387***	(4.0)
Interviewed at least one callback	.320***	(5.7)	.285***	(4.6)	.302***	(5.8)	.367***	(7.3)
Firm has Personnel Office	.221**	(2.3)	.335	(3.1)	.149*	(1.7)	.106	(1.2)
R^2	.474**		.388		.480		.536	

* = p<0.05 one-tail test

** = p<0.025 one-tail test

*** = p<0.01 one-tail test

The effect of each of these publicity mechanisms on contacts is displayed in table 15. The impacts displayed are calculated from regressions that contain the nine variables measuring the number and type of vacancies and a full set of controls for permanent characteristics of the firm that might influence the expected probability of a vacancy, the quality of the jobs that might be offered, and the cost of making a contact. These same regressions are also the basis for the results presented in tables 16-19. A list of the other variables included can be obtained by consulting these tables. The R^2 of this full model is reported at the bottom of table 15.

Twenty-one percent of the firms with vacancies asked for referrals from the state employment service. Asking for these referrals implies a substantial increase in MAXCONTACTS (48 percent) and PHONES (50 percent). It is associated with a smaller though statistically significant 20 percent increase in VISITS but no increase in the number of applications. The lack of any increase in applications despite large increases in phone calls and MAXCONTACTS suggests either that the people referred by the employment service are less likely to show up after they call (some employers reported this to be the case), or that employers screen out (i.e., discourage a visit over the phone or discourage filing an application) a larger proportion of employment service referrals than they do of other job seekers.

Thirty percent of the firms with vacancies advertised the job in a newspaper. They experienced large statistically significant increases in the numbers of job seekers contacting them. Phone calls increased by 53 percent and personal visits by 52 percent. Applications rose by an even larger 71 percent suggesting that the quality of the job seekers who contact a firm as a result of an ad is equal to (and possibly better than) the quality of the firms' autonomous flow of applicants.

Forty-eight of the employers with vacancies reported that they had announced the job opening to their current employees. This results in statistically significant increases of 15 percent in MAXCONTACTS, 20 percent in phone calls, and 24 percent in applications. Visits rose 11 percent but the increase is not statistically significant. The fact that applications rise more than visits means that the firm is allowing a larger proportion of those

who do visit to apply, which suggests that the quality of job applicants who come through this recruitment channel is higher than average.

Seventeen percent of the firms with vacancies asked for referrals from a private employment agency. Because of the screening provided by these agencies, phone calls and visits increase by less than 2 percent and applications by a nonsignificant 9 percent. Only 0.9 percent of the respondents with vacancies were construction firms requesting referrals from a union. Requests for union referrals did not have a statistically significant effect.

Ten percent of the firms with vacancies reported displaying a "help wanted" sign. Surprisingly, the number of visits did not respond to this publicity device. Point estimates of its effect were in fact generally negative, though not statistically significant. Nineteen percent of the firms with vacancies reported "other efforts." These efforts seem to be associated with statistically significant declines in MAXCONTACTS, PHONES, VISITS and APPLICATIONS. An interpretation of these results must await a careful examination of what activities constituted "other efforts."

4.2.3 The Handling of Phone Calls

Sixty-eight percent of the employers in the sample reported receiving phone calls from job seekers in the prior two weeks. For the firms that received calls, the number of calls had a mean of 18.8. Sixty-eight percent also reported being visited by a job seeker, but for the firms that were visited the mean number of visits is 14.2. Most firms receive more phone calls than visits, so the way they handle these calls can be a major determinant of how many personal visits and applications they get. One of the easiest ways for a firm to adjust its flow of visitors to its current hiring needs is for it to change what it tells job seekers who call the firm.

Half of the firms that received phone calls reported encouraging job seekers to visit the firm and another 14 percent reported encouraging a visit if preliminary screening over the phone indicated that the individual had appropriate skills. Estimates of the impact that encouraging phone calls has upon VISITS are presented in the first column of table 16. Relative to a "don't know" or "neither encourage nor discourage" answer, blanket encouragement raises VISITS by a statistically significant 50 percent and encouragement

TABLE 16

THE IMPACT OF NUMBER OF PHONE CALLS AND
HOW CALLS ARE HANDLED

n	Model with Policy Dummies		Model with Interactions between Policy and PHONES			
	Impact of Policy		Impact of Policy[1]		Elast w.r.t PHONES	
	In VISITS	In APPLICATIONS	In VISITS	In APPLICATIONS	In VISITS	In APPLICATIONS
Encourage visit	.450***	1.065***	.473	1.337	.558	.538***[2]
Encourage if skilled	.278*	.835***	.379	1.084	.570	.493***[2]
Neither Encourage or Discourage Visit	.004	- .240	0	0	.497	.239***
Discourage Visit	.280*	- .078	.168	- .274	.424	.108

1. If twelve phone calls/week were received. Tests of significance of policy effects were not calculated for this model.

2. This elasticity is significantly larger than the elasticity for neither encourage or discourage at the .01 level on a one-tail test.

of skilled applicants raises visits by a statistically significant 32 percent. Strangely, however, discouraging the caller also seems to increase visits by a statistically significant 32 perce

The association between the firm's phone policy and the number of applications is significantly greater than its association with visits. Firms that encourage phone callers to visit are also more likely to accept applications from the visitor. Firms that discourage a visit are more likely to tell the visitor there is no point in filing an application. Because of the association between these two levels of screening, firms that encourage visitors have an application rate that is 269 percent higher than those firms that neither encourage nor discourage visits. Firms that encourage a visit if the job seekers are skilled have a 193 percent higher application rate than firms that take a neutral stand.

The impact of the policy regarding phone calls on visits and applicati· ı should depend upon the number of phone calls. If few phone calls are r. ceived, whether visits are encouraged or not will not influence the number of visits and applications. If almost all job seekers call before visiting, how these calls are handled will have a great effect on visits.

A model interacting phone policy with the logarithm of the number of phone calls is presented on the right-hand side of table 16. The interactions between policy and phones are not statistically significant in the VISITS equation. The coefficients have the expected pattern, however. Firms that are encouraging phone callers to visit have a higher elasticity (0.558 to 0.570) of visits to phone calls than firms that discourage visits (0.424). This means that the point estimates imply that the policy of encouraging callers to visit has a greater impact if the firm receives many phone calls.

The estimated effect of phone policy on visits to a firm that receives 25 phone calls every two weeks is presented in the third column of table 16. Twenty-five calls every two weeks is nearly four times the geometric mean of the PHONES variable. As expected, the calculated impact of blanket encouragement of visits is larger (60 percent versus 50 percent) than the effects presented at the top of the table, which are an average for all firms.

Adding the interactions to an APPLICATIONS model that already contains the policy variables and PHONES produces a statistically significant improvement in explanatory power. The elasticity of APPLICATIONS with respect to phones is 0.538 if the firm is encouraging visits and 0.108 if the firm is discouraging visits. The much larger impact of phone policy on the elasticity of APPLICATIONS with respect to PHONES than on the elasticity of VISITS with respect to PHONES suggests that people who have been encouraged to visit are generally allowed to file a job application and that job seekers who come despite being discouraged over the phone are generally not allowed to file an application.

4.3 The Responses to Nontemporary Characteristics of the Establishment that Predict the Likelihood of an Offer

4.3.1 Size and Growth of the Establishment

Because information on the current number of vacancies at firms is often not available, the job seekers will use other, more easily observed features of the firm to predict the likelihood of a vacancy. The job seekers will also use nontemporary features of the firm to predict the probability of an offer, if there does happen to be a vacancy. Table 17 presents the coefficients for variables that are hypothesized to influence P_{ij}^{n} and P_{ij}^{f}.

Establishment size at the time of the interview is the single most important predictor of the number of job-seeker contacts at a firm. As hypothesized, however, the elasticity of contacts with respect to establishment size is significantly below 1.0. At the geometric mean of the establishment size distribution (19.7 employees), the elasticity with respect to size is 0.44 for MAXCONTACTS, 0.35 for PHONES, 0.37 for VISITS, and 0.40 for APPLICATIONS.

As hypothesized, firms that have recently contracted in size measured either by employment change or sales growth receive a greater number of phone calls and MAXCONTACTS than their current size would lead one to expect. The coefficients are not statistically significant, however, and the effects are modest. The effects of recent growth rates on the number of applications accepted is quite different from their effects on job-seeker-initiated contacts such as phone calls and MAXCONTACTS. Firms that have experienced

TABLE ''

IMPACT OF CHARACTERISTICS OF THE ESTABLISHMENT
ASSOCIATED WITH THE ROBABILITY OF AN OFFER

	LOG MAX-CONTACTS		LOG PHONES		LOG VISITS		LOG APPLICATIONS	
Log Current Establishment Employment	.423***	(5.5)	.301***	(3.5)	.346***	(4.8)	.422***	(6.1)
Log Current Establishment Employment Employment Square	.005	(.5)	.019	(1.6)	.008	(.8)	-.010	(1.0)
Employment Growth (Now-December 1981)	-.134	(.7)	-.147	(.7)	-.015	(.1)	.146	(.9)
Max (Employment Growth, 0)	.25'	(1.0)	.404	(1.4)	-.020	(.1)	-.197	(.8)
Sales Growth 81/79	-.112	(.5)	-.285	(1.0)	.094	(.4)	.582***	(2.6)
Max (Sales Growth, 0)	.109	(.4)	.404	(1.3)	-.088	(.3)	-.668***	(2.6)
New Hire 81/(Employment + New Hire 81)	.646***	(4.3)	.470***	(2.8)	.373***	(2.7)	.449***	(3.3)
Proportion Less Than 25 Years Old	.467***	(4.0)	.539***	(4.1)	.586***	(5.3)	.673***	(6.4)
Proportion Part-Time	.119	(1.1)	.083	(.7)	.153	(1.5)	.231***	(2.4)
Proportion Unionized	.067	(.5)	-.065	(.5)	.181	(1.6)	-.138	(1.3)
Proportion Union when Construction	-.774***	(2.7)	-.812***	(2.5)	-.491*	(1.8)	.045	(.2)
Proportion White Collar	-.173*	(1.8)	-.197*	(1.8)	-.155*	(1.7)	-.026	(.3)
Propo·tion Craft	-.258**	(2.1)	-.130	(1.0)	-.317***	(2.8)	-.116	(1.1)
Proportion Prof, Tech, Managerial	-.166	(1.1)	-.116	(.7)	-.203	(1.5)	-.065	(0.5)

* = p<0.05 one-tail test
** = p<0.025 one-tail test
*** = p<0.01 one-tail test

declines in unit sales over the previous two years accept significantly fewer job applications than employers with stable unit sales. The decline is statistically significant. A 50 percent decline in sales is associated with a 34 percent decline in accepted applications. A doubling of unit sales over the previous two years, however, has almost no effect on the numbers of applications accepted. A recent employment decline has a tendency to reduce the number of applications that are accepted but here coefficients are not statistically significant. It would seem that the expectations of employers are considerably more pessimistic than the expectations of job seekers. The employers seem to extrapolate past declines in sales into the future but expect a turnaround or slowdown if growth has been strong. An additional reason for their behavior is that firms that have recently had large declines in sales and employment are likely to have a stock of laid off workers whom they will call back if they have a vacancy open up.

4.3.2 Turnover

Both the 1981 new hire rate and the proportion of the establishment's work force under age twenty-five have large, statistically significant positive effects on all forms of job-seeker contacts. The new hire rate has a mean of 0.246 and a standard deviation of 0.20. The elasticity of contacts with respect to the new hire rate (calculated at the mean new hire rate) is 0.16 for MAXCONTACTS, 0.12 for PHONES, 0.09 for VISITS, and 0.11 for APPLICATIONS. The proportion of the work force under twenty-five has a mean of 0.268 and a standard deviation of 0.238. The elasticity of contacts with respect to this proportion ranges between 0.13 and 0.18. The positive effect of the proportion under twenty-five on contacts has two causes. First, a young work force is a high-turnover work force so job seekers expect a greater number of vacancies and a higher probability of an offer at these firms. Second, youth are a much larger proportion of all job seekers (nearly half) than they are of employees and they are especially likely to apply at these firms. Firms that already enploy youth are more salient to job-seeking youth and are more likely to offer them a job.

Part-time employees tend to have higher rates of turnover so firms with many part-time employees may receive more job-seeker contacts and accept a

greater number of job applications. As hypothesized, proportion part-time was positively related to all four measures of job-seeker contacts but only its relationship with job applications was statistically significant.

4.3.3 Unionization

About 10 percent of the establishments in the sample were unionized. Seventeen percent of the unionized establishments were in the construction industry. The control exercised by craft unions over hiring in the construction industry may reduce the flow of job-seeker contacts significantly at these firms. Coefficients on a dummy for "unionized" construction firms are negative in all equations and statistically significant in the models of MAXCONTACTS, PHONES, and VISITS. The point estimates imply that unionized construction firms receive 54 percent fewer MAXCONTACTS, 56 percent fewer phone calls, and 39 percent fewer visits than other unionized firms. Impacts of a construction union on contacts at establishments that have vacancies are even larger, with an 80 percent reduction in MAXCONTACTS and in phone calls.

Because management retains control of the hiring process, unionization does not have this kind of effect in other industries. In fact, because unions tend to raise the wage and improve job security, they may have a positive effect on job-seeker contacts. None of the coefficients on the union variable are statistically significant.

4.3.4 Skill Level of the Work Force

The final three variables in the table are indicators of the skill level of the work force. At the sample of firms, 48 percent of the employees are white-collar workers, 17 percent are craft workers, and 17 percent professional, technical, or managerial workers. Because turnover is greater and there is a greater excess supply of labor in unskilled labor markets, firms with a predominantly unskilled work force may be expected to receive more contacts from job seekers. In the models of job-seeker-initiated contacts, all nine of the coefficients on these indicators of a skilled work force are negative as hypothesized and five are statistically significant.

4.4 The Responses to the Jobs' Attractiveness

Recent research on the nature of the employment contract suggests that compensation packages and the nonpecuniary features of the job (e.g., policies regarding seniority and due process in firing and promotion) are designed to attract and retain quality employees. The three regressions predicting job-seeker-initiated contacts provide an opportunity to evaluate the total impact that job attractiveness has upon the supply curve that faces a firm, and to compare the impacts of different features of the job. Certain features of the job offered by the firm will be easier to assess than others, however, so the response of job-seeker contacts to each feature will reflect how well known this feature is, as well as how highly it is valued.

Firms typicaliy offer many different types of jobs. The problem this presents for measurement of the job characteristics that influence the aggregate flow of job-seeker contacts is obvious. Averaging characteristics over all the firm's jobs is not a perfect solution, because the jobs for which the firm is hiring may be quite different from the average job. The solution adopted in this study is to randomly select a recent new hire, measure the features of that job, and use that job's characteristics as predictors of the aggregate number of job-seeker contacts. The estimated effects of job characteristics on the flow of job seekers contacting a firm are presented in table 18.

4.4.1 Compensation

It was hypothesized that the ratio of the wage of a typical worker with two years' tenure (in the randomly selected job) to the local manufacturing wage would have a positive impact on job-seeker contacts. This hypothesis is not supported. Half the coefficients were negative and none were statistically significant. The poor performance of this variable may be due to the fact that this wage ratio reflects the skills required by the job that was sampled as well as real differences in compensation for jobs of a particular skill level. In future work, a wage rate that has been adjusted for the skill level of the job will be substituted.

Of the jobs sampled, 3.3 percent were paid on either a piece rate or 100 percent commission basis and 7.8 percent had some form of partial individual

TABLE 18

IMPACT OF INDICATORS OF THE ATTRACTIVENESS OF THE JOBS

	LOG MAX-CONTACTS		LOG PHONES		LOG VISITS		LOG APPLICATIONS	
Log (Firm Wage/Manufacturer Wage)	.045	(.6)	.097	(1.1)	-.057	(.8)	-.061	(.9)
Piece Rate or 100% Commission	-.359***	(2.5)	-.314**	(2.0)	-.343***	(2.5)	-.275**	(2.1)
Partial Incentive Pay	-.239***	(2.6)	-.130	(1.2)	-.115	(1.3)	-.100	(1.2)
Difficulty of Firing	.184**	(2.0)	.150	(1.5)	.197**	(2.3)	.220***	(2.7)
Length of Probationary Period	-.072*	(1.7)	-.068	(1.4)	-.055	(1.4)	.024	(.6)
No Probationary Period	.067	(.5)	.043	(.3)	.055	(.4)	-.254***	(2.1)
Seniority is Basis of Layoff	-.063	(.7)	-.125	(1.3)	-.079	(1.0)	-.039	(.5)
Retention Rate of New Hires	-.043	(.4)	-.107	(1.0)	-.113	(1.2)	-.065	(.7)
Log (Firm Employment/ Establishment Employment	.071***	(3.2)	.054**	(2.2)	.072***	(3.5)	.094***	(4.7)
Log Cost of Machinery	.023	(1.4)	.036**	(2.0)	.020	(1.3)	-.010	(.7)
Log (Weeks to Be Fully Trained)	-.008	(.4)	-.017	(.7)	.000	(.0)	-.007	(.4)
Log (Training Cost 1-3 Months)	-.022	(.8)	-.045	(1.4)	-.005	(.2)	-.026	(1.1)
Training in General	172**	(2.2)	.186**	(2.1)	.079	(1.1)	.078	(1.1)
Log (Alternative Employers)	.011	(.7)	.028	(1.5)	.003	(.2)	-.016	(1.1)

* = p<0.05 one-tail test
** = .025 one-tail test
*** = .01 one-tail test

incentive payment. There are two reasons for expecting fewer job-seeker contacts when the firm has an incentive-based compensation scheme. Compensation schemes of this nature shift some of the risk of a hiring decision from the employer to the employee. If the worker turns out to be only half as productive as expected, the reduced wage lowers the employer's loss. The cost of a mistake is smaller and the employer is likely to need to screen and interview fewer candidates for each position. Even more significant is the fact that the correlation between performance and compensation will lead job seekers to assess their own skills and abilities more carefully and only apply for the job if they feel they will be reasonably good at it. A final reason for expecting incentive schemes to lower the demand for a job is that the typical worker in these jobs is likely to be working harder than workers in jobs with fixed hourly or weekly wages. As a result, job seekers with a taste for leisure on the job will tend to avoid jobs paid on an incentive basis.

In the full sample, employers that compensate on a piece rate or 100 percent commission basis receive a statistically significant 27-30 percent fewer MAXCONTACTS, PHONES and VISITS. They also accept, as a result, 24 percent fewer applications. Jobs that pay on a partial incentive basis also seem to be less popular. The coefficients on this variable are negative in all regressions, but statistically significant only in the model of MAXCONTACTS.

4.4.2 Job Security

Seventy-two percent of the firms reported having a probationary period for new employees. For those that had a probationary period, the length of the period had a geometric mean of 7.2 weeks and a standard deviation in the logarithmic scale of approximately 1.1. When asked "(After the probationary period is over) How much documentation or paperwork is required to fire an employee?" 11 percent responded "a great deal," 21 percent responded "some," 31 percent responded "a little," and 37 percent responded there was "no paperwork."

It was hypothesized that the existence of a probationary period and great difficulty in firing employees after the probationary period will all increase the number of job-seeker contacts. An increase in contacts is expected partly because the greater job security makes the job more attractive to job seekers

and partly because employers must now be more careful about who is offered a job (because discharges are more difficult).

These hypotheses about the difficulty of firing are strongly supported, for the index's coefficient is positive in all four models and statistically significant in three. Firing that requires a great deal of paperwork rather than none is associated with increases in contacts of between 16 percent and 25 percent. Coefficients on the length of the probationary period are generally negative, as hypothesized, but statistically significant only in the MAXCONTACTS regression.[18] No probationary period has a large negative and statistically significant coefficient in the applications equation.

It was hypothesized that basing layoffs on seniority rather than ability would reduce the attractiveness of the job because the new employee would have a higher probability of being laid off. The coefficient on the "seniority is the basis of layoff" variable was negative, as hypothesized, but was not statistically significant.

4.4.3 Training Provided on the Job

It was hypothesized that firms that offer more than the usual amount of training in their jobs would attract more job seekers both because the job will be viewed as more attractive by job seekers and because the employer will want to choose new employees more carefully. (This latter proposition was supported by the analyses in chapter 3.) The same argument led to the expectation that jobs that involve interaction with an expensive machine will attract more job seekers. Jobs that offer general training are less risky for the employees because the skills they learn on the job have greater value at other firms. The wage profile should be steeper, as well, so expectations of future wages should be higher. Finally, a firm that uses workers with general skills should have a wider labor market upon which to draw. These three factors led to the expectation that jobs that offer more general training will be more attractive and will attract a greater number of job seekers.

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18. It was assumed that no probationary period would be viewed by job seekers and employers as similar to a very long probationary period. Jobs reporting no probationary period were given a ln(length of probationary period) = ln(104 weeks). Dummies for no probationary period were also included in all models.

Results of tests of these hypotheses were mixed. Coefficients on the variables measuring the amount and cost of training were consistently negative (a sign opposite from our hypothesis). The number of other employers at which the general skills learned on this job were useful had almost no effect on any type of job-seeker contact. The cost of machinery does slightly better, having a small, positive statistically significant effect on PHONES.

Only the hypothesis about the generality of training received strong support. If almost all the skills learned by new employees were useful outside the company rather than almost none, MAXCONTACTS and PHONES are a statistically significant 19 to 20 percent higher.

Since there were many other controls for turnover, it was hypothesized that the proportion of new hires who stay in the job more than six months would proxy for job attractiveness and would as a result have a positive relationship with the number of job seeker contacts. In fact, however, the coefficients on this variable were all negative (though not significantly so), suggesting that it is a better proxy for the probability of being offered a job than for the attractiveness of the jobs that might be offered.

4.4.4 Size of Firm and Other Job Characteristics

Firm size was presumed to have an independent effect on job-seeker contacts because being part of a large corporation increases the salience of even a small establishment and because firm size has an independent association with positively valued features of a job, such as job security and higher (skill-adjusted) wage rates. The ratio of firm to establishment size had statistically significant positive impacts on all four types of job-seeker contacts. If an establishment with 100 employees is part of a corporation with more than 2,000 employees, there is typically an increase of 30 percent in MAXCONTACTS, 22 percent in PHONES, 30 percent in VISITS, and 41 percent in APPLICATIONS.

4.5 The Effects of the Local Labor Market and the Industry

4.5.1 Demand Pressure in the Local Labor Market

In the discussion (section 4.1.1) of the determinants of the number of job seekers in a labor market, N, it was hypothesized that tight labor markets

(i.e., high rates of employment growth and low rates of unemployment) would have fewer job seekers and therefore a smaller number of job-seeker contacts. Surprisingly, the results presented in table 19 do not support this hypothesis. Half the coefficients have the wrong sign and none come close to statistical significance.[19] These results imply that the aggregate number of job-seeker contacts in a labor market does not rise when times are bad. The reduction in the number of job offers being made lowers the perceived chances of success to such an extent that the intensity of search declines by enough to offset the increase in the number of job seekers. A poor labor market may also discourage workers who are dissatisfied with their current job from seeking another. The ratio of job-seeker contacts to job offers may increase, but the total number of contacts goes down. This is a potentially important finding that needs to be replicated in other data sets.

Another puzzling finding is the lack of a positive effect of labor market size on the number of job-seeking contacts. We anticipated that large labor markets would have a larger number of employers offering very attractive jobs and that would result in job-seekers calling or visiting a greater number of low offer-probability firms before being offered a job and stopping their search. No evidence for this was found. The only statistically significant coefficient implies that firms of a given size receive fewer visits and applications in large labor markets than in small.

4.5.2 Industry

A number of hypotheses about the impact of industry on the number and types of job-seeker contacts were developed in section 4.1.4. Employers that were expensive to contact were expected to receive fewer contacts. Retail firms were viewed as cheaper to contact than most other types of firms. Phone contacts at manufacturing firms were thought to be particularly expensive. Because of the variability of employment and the difficulties of even finding

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19. This result would not be so surprising if the perverse coefficients were limited to the local unemployment rate. Unemployment rates may be higher in states with a more generous welfare and unemployment insurance systems and in states where unemployment has greater social acceptance. If these factors are important one would expect search intensity to be lower in areas with high unemployment rates. The rate of growth of employment in an area is for these reasons a better indicator of demand pressure in a labor market.

TABLE 19

IMPACT OF INDUSTRY AND LABOR MARKET CHARACTERISTICS

	LOG MAX-CONTACTS		LOG PHONES		LOG VISITS		LOG APPLICATIONS	
Log (Labor Market Size)	-.011	(.5)	.016	(.7)	-.072***	(3.5)	- .082***	(4.2)
Log (Growth Rate May 81/May 80)	.476	(.4)	.960	(.6)	-.783	(.6)	-1.358	(1.1)
Unemployment Rate	1.191	(.9)	-.443	(.3)	.539	(.4)	-1.786	(1.3)
Industry Dummies (Relative to Retail)								
Construction	.301**	(2.2)	.536***	(3.5)	-.042	(.3)	-.087	(.7)
Mining and Manufacturing	-.113	(1.3)	-.174*	(1.7)	-.094	(1.1)	-.133	(1.6)
Transportation, Communication and Utilities	.013	(.1)	.130	(.9)	-.106	(0.8)	-.132	(1.1)
Finance and Service	-.137**	(2.2)	.060	(.9)	-.279***	(4.8)	-.143***	(2.6)

* = p<0.05 one-tail test
** = p<0.025 one-tail test
*** = p<0.01 one-tail test

the boss of a construction site during the work day, using the phone to screen possible employers would be very common in the construction industry. Finance and service firms do receive fewer contacts, as hypothesized. Screening over the phone seems to be popular in nonunion construction industries, as hypothesized.

4.6 Summary and Conclusions

A model of the determinants of job-seeker contacts at firms, based upon Martin Weitzman's (1979) model of systematic search, has been developed and tested. The high R^2 obtained in the empirical work and the tendency of empirical findings to support the predictions of theory provide strong support for the view that job search is systematic rather than random. In general, the number of job-seeker contacts were found to be more responsive to variables describing the probability and number of vacancies (i.e., establishment size, vacancies, new hire rate, proportion part-time, proportion under age twenty-five) than measures of the attractiveness of the job (i.e., wage, incentive payments, firm size, general training, and job security). One cannot view these results as a strong refutation of Weitzman's prediction that a firm's place in the search order will be more sensitive to the attractiveness of its jobs than to the probability of a job offer. Measurement error may have been a more serious problem for the job attractiveness variables than for the variables characterizing the probability of a vacancy. On the other hand, elasticities with respect to the probability of an offer P^n_{ij} and P^f_{ij}, may be especially high when almost all P^n_{ij}'s and P^f_{ij} are low. At the time of the survey, the average unemployment rate in the labor markets containing interviewed employers was 10.5 percent. This means that the P^n_{ij}'s and P^f_{ij}'s were at the low end of their historical range. The behavior observed may have been unique to a high-unemployment environment.

Most firms have a sufficient backlog of past applications and flow of new applicants contacting them on their own initiative that they do not need to undertake new recruitment efforts each time they have a vacancy. As a result, many vacancies are filled without any announcement of their existence to anyone outside the firm. The total flow of job-seeker contacts responds to the current recruitment efforts of the employer, but only to a modest extent.

Announcing a vacancy to one's current employee increases telephone contacts by 20 percent and applications by 24 percent. Asking for referrals from the state employment service increases phone calls by 50 percent, but visits rise only 20 percent and applications hardly change at all. How phone calls are handled can influence the number of job seekers visiting the firm, but again the effects are a modest increase in visits of about 30 percent. At most firms, the number of phone calls does not exceed the number of visitors who do not call in advance by a large enough margin to allow a policy of encouraging visitors to dramatically increase the flow of visitors. Thus, the flow of job-seeker contacts responds to the existence and number of vacancies, but the elasticity of response is such that filling large numbers of vacancies all at the same time requires either a major recruitment effort or some lowering of hiring standards.

V. THE ASSOCIATION BETWEEN THE RECRUITMENT CHANNEL AND THE SUCCESS OF THE NEW HIRE

Employers invest resources in the recruitment and selection process because they expect it will enable them to hire better workers. Choosing the optimal mix of recruitment strategies involves weighing the benefits (i.e., high-quality workers) of each strategy against its cost. Employers seldom invest in all of the recruitment channels that are available to them. Their decisions about which recruitment channels to emphasize are heavily influenced by their beliefs about where they are likely to find the best workers. Many employers also believe that information on who made the referral and even how the applicant came to hear of the job helps in making a selection among the candidates that are interviewed. As a result, even after an application is made, the decision to interview a particular candidate and the selection for hiring may be influenced by who referred the applicant.

These beliefs were put to an empirical test by comparing individuals entering the same job at the same firm who were recruited from different sources. Four questions were answered:

- Is the time required to train a new employee associated with the source of his or her recruitment? If yes, which groups require less training?
- Is the reported productivity of a new employee associated with the source of his or her recruitment? If yes, which groups are more productive?
- Is the wage paid new employees associated with the source of their recruitment? If yes, which groups get the higher wages?
- Does the firm obtain greater profits if it recruits workers from one source rather than another? In other words, is the productivity net of training, recruitment, and wage costs consistently higher for new hires obtained through certain recruitment channels? If yes, which recruitment channel seems to be most profitable?

In section 5.1 a theory of how such associations may develop is discussed. The specification of the proposed tests is discussed in section 5.2, the data in 5.3, and the results in 5.4.

5.1 Theory

The theoretical and empirical issues raised by the first three questions are quite different from the issues raised by the fourth. "Yes" answers to the first three questions are quite consistent with a perfectly competitive labor market where all ski[illegible]re general and information is available without cost to everyone. The data [illegible]ggest that it is not uncommon for people in the same job with the same tenure to receive different wage rates. If th[illegible] firm can offer different wage rates to different new hires, a perfectly competitive labor market is quite consistent with substantial differences in the expected productivity of the new employees hired for a specific job. If the employer's beliefs are correct about the correlation between recruitment channel and productivity of the sample of job seekers that contact the firm, this same correlation will appear when different workers hired in the same job are compared. Perfect competition implies that the more productive groups will receive higher wage rates and that the higher wage will exactly offset the higher productivity net of training and recruitment costs. If a firm has a policy of not varying the wage rates paid to people in the same job, then perfect and cost-less information and the lack of specific human capital imply that everyone hired by the firm has the same expected productivity net of training costs.[20]

Labor markets, however, are not perfect. Skills are often specific to particular employers and information about the competence of job applicants is incomplete and costly to obtain. In firms that pay the same wage to everyone,

20. This occurs despite the fact that some categories of job applicants (e.g., those referred by a current employee or another employer) may have a higher average productivity level than others. Each firm evaluates its job applicants and offers a job only to those whose expected productivity exceeds a cutoff point. Firms will be more likely to make job offers to applicants with characteristics (e.g., previous work experience or a strong recommendation from someone the employer trusts) associated with a high productivity level. Workers whose expected productivity is substantially above a firm's cutoff point know that other firms offering better jobs will recognize their productive potential and therefore choose not to apply at this firm or choose to turn down this firm's job offer. Workers with expected productivity that is below this firm's cutoff point either do not apply (because they know they are not qualified for the job) or are not offered a job when they do apply. These workers must settle for jobs at firms that offer somewhat less attractive positions.

circumstances may therefore arise whereby employees recruited from one source (e.g., referral by another employer) are on average more productive than other employees who do the same work and were recruited from another source (e.g., the state employment service). In firms that adjust the entry wage to the perceived competence of the worker, the productivity net of wages, recruitment, and training costs may vary systematically with the recruitment source of the worker.

What kinds of market imperfections can produce variations in the profitability of new hires that are predictable according to the recruitment source of the new hire? The short answer to the question is imperfections that produce a correlation between recruitment source and the employer's monopsony power in hiring that specific individual. A union referral service is one example of a recruitment source that substantially affects the employer's monopsony power and in fact establishes monopoly power on the supply side of the labor market. If the employer's decision to use a union referral service is not a completely free choice (e.g., because of the threat of a strike), we would expect union referrals to be less profitable than a new hire obtained from other sources.

When a union is not present the case for a correlation between employer monopsony power and recruitment source is somewhat more complicated. Competition forces the firm to offer each worker a compensation package that is at least equal to what the worker can obtain from other firms. A worker with characteristics that are visible to many employers that predict higher productivity in many firms will inevitably receive higher compensation. A worker with characteristics that predict higher productivity in one specific firm but not in other firms or with positive attributes that are visible to only one or two employers may not receive appreciably higher compensation and thus may provide the firm an opportunity to receive a profit.

If the recruitment source that yields an applicant is correlated with that individual having a comparative advantage at the jobs in that firm, the result will be a systematic tendency for recruitment source to relate to the

profitability of a new hire. An individual may find a comparative advantage in working at particular firms for a number of reasons, such as the following:

- A job applicant may already know skills specific to the firm, possibly because of previous employment at that firm or a similar firm or from being a relative of a current employee.
- A job applicant may have a comparative advantage in learning skills that are specific to the firm, possibly because he or she knows the trainer already.
- A job applicant may have a higher propensity to stay at this firm than others, possibly because relatives and friends already work there. (This potential effect is not tested in this paper.)
- A job applicant may have special compatibility with other members of the work team (presumably resulting in greater productivity), possibly because of similar ethnicity or existing friendships with current employees.

The second reason for systematic variation in the profitability of new hires would be the availability to the firm of information about applicants from a particular recruitment source that is not available to other employers contacted by the applicant. Such information allows the employer to make a more refined choice among applicants: avoiding less productive workers and hiring more productive workers without having to pay extra. When an employer gets a referral from a current employee or another employer, the person hiring normally receives information about the job applicant that is not available to other employers. As a result, the theory predicts that these new hires will typically be more profitable than other new hires. The state employment service and schools treat all employers equally, so one would not anticipate that hiring such referrals have this profit advantage for the firm.

5.1.1 A Formal Model

The argument made in the previous three paragraphs can be stated more formally with the help of a few equations. Let us assume that the productivity net of recruitment and training costs of the "i"th worker on the "j" firm depends upon a factor specific to the intersection of the person and the firm, a_{ij}, as well as upon factors that affect productivity in all firms, a_i, and factors that influence the productivity of all workers in a firm, a_j, as follows:

(1) $P_{ij} = a_i + a_j + a_{ij}$

Employers use the information they have on a job candidate to predict a_i and a_{ij} and then base their hiring decisions and wage offers on these predictions, $\hat{a}_i^j$, $\hat{a}_{ij}$. The firm's prediction of $\hat{a}_i^j$ may be divided into two parts: (1) modal or market norm prediction based on the information that is available to all employers $\hat{a}_i$, and (2) a firm-specific deviation from the modal prediction, $\Delta\hat{a}_i^j$, that is based on information available to the firm that is not available to other employers (or a better model of a_i than is being used by other employers), shown as follows:

$$(2)\quad \hat{a}_i^j = \hat{a}_i + \Delta\hat{a}_i^j$$

Since other firms are willing to offer the "i"th worker a wage equal to $\hat{a}_i$, the firm is not likely to be able to attract or keep a worker unless it offers at least that amount; that is, the opportunity wage of the "i"th worker is $W_i = \hat{a}_i$. Using this fact, it can be seen that the hiring strategy that will maximize profits involves selecting the job seeker with the largest difference between his or her predicted productivity in the firm and his or her reservation wage, which is equivalent to maximizing $\Delta\hat{a}_i^j+\hat{a}_{ij}$, as follows:

$$(3)\quad \text{Max}_i(\hat{P}_{ij} - W_i) = \text{Max}_i(\Delta\hat{a}_i^j + \hat{a}_{ij})$$

This worker is then offered a wage of W_{ij}, which is slightly more than W_i, in order to increase his or her probability of accepting the job and reduce the worker's probability of quitting later on. The size of the optimal increment, $W_{ij} = W_{ij}-W_i$ depends upon the elasticity of the acceptance rate and the retention rate with respect to W_{ij} and the magnitude of $P_{ij}-W_i$ and the costs of hiring and training a new worker if "i" quits.[21]

Since the individual's opportunity wage is determined by the market's evaluation of the person-specific component of productivity, a_i, the "j"th firm's optimal strategy may be equivalently stated as selecting a worker who

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21. We are assuming that the job seeker does not behave strategically. We feel this is reasonable because the job seeker is not likely to know whether he or she has a comparative advantage in the job or to know what the person who is recommending the worker has said about his or her competence. Furthermore, the cost of continued job search--travel costs, lost earnings, and mental anguish--are considerable, so an unemployed job seeker with one offer in hand will not turn it down unless he or she expects future offers will be forthcoming that are considerably more attractive. About three-quarters of unskilled and semiskilled job seekers accept the first job offer they receive.

has a comparative advantage at the "j"th firm (a_{ij} is large) and/or a worker who the firm knows is better than the modal opinion implies (Δa_i^j is large). This theory implies that an increase in the quality and amount of information about job candidate "i" that is uniquely relevant to the "j"th employer increases the "i"th job candidate's probability of being selected by the "j"th firm. Of course, the job candidate would like to promote the dissemination of positive information and reduce the dissemination of negative information, but if he or she cannot control and does not know the content (as with confidential letters of recommendation or oral referrals), the candidate nevertheless must volunteer the information since it increases the likelihood of the employer discovering firm-specific information that is positive.

This theory also implies that a firm has a larger expected profit when it selects a job candidate from a pool of job seekers about whom it is better informed than other employers. In this case, it is likely that the variance of the distribution of $\Delta\hat{a}_i^j+\hat{a}_{ij}$ from which it selected the candidate was larger than normal and therefore that the extreme value of that distribution $[\Delta\hat{a}_{i*}^j+\hat{a}_{i*j}|i^* \text{ is max}]$ is larger than normal.

In the empirical section of this paper, models will be estimated that characterize the association between the recruitment source of the new hire and the difference between that new hire's productivity net of training costs and the wage. This measures the profitability of a particular new hire and is equal to $(\Delta\hat{a}_{i*}+\hat{a}_{i*j}|i^* \text{ is max})-\Delta W_j$ plus a random error.[22] The theory provides a number of predictions about how the expected profit from hiring a worker depends upon the recruitment source that was used. In particular, recruitment sources that offer the employer significant information about a job candidate that is not available to other employers, such as referral by a current employee or another employer, are predicted to produce more profitable new hires. Similarly, recruitment sources that are directly associated with a higher a_{ij} are also predicted to produce more profitable new hires.

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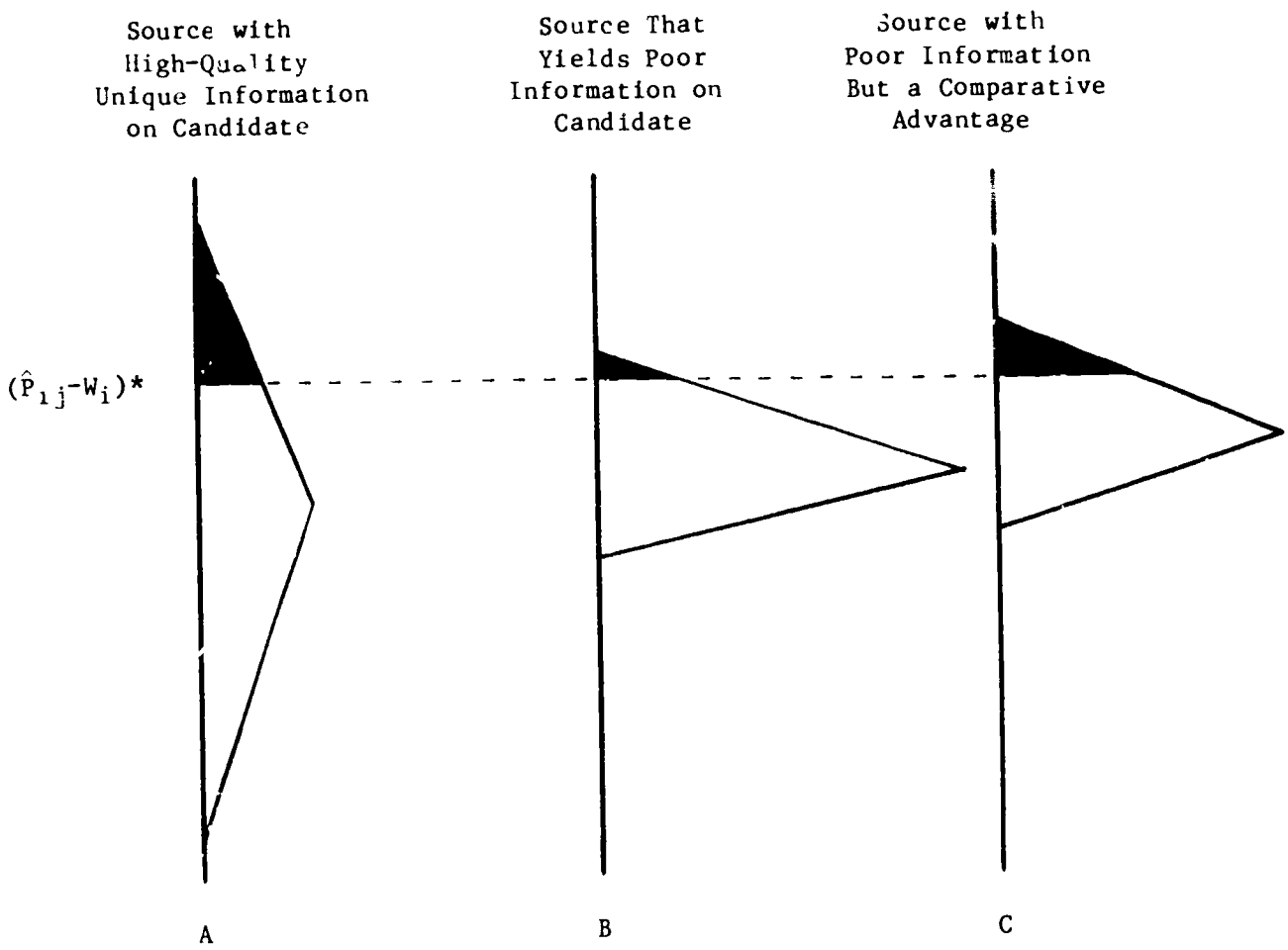
22. The small wage premium ΔW_{ij} that the firm will pay above the opportunity wage W_i depends on the elasticity of quit rates and acceptance rates to the premium, the expected magnitude of hiring and training costs (paid by the employer) necessary to replace the worker if he or she leaves, and the size of $P_{ij}-W_i$. For a particular job at a particular firm the first three of these factors are constant, so they do not influence the measures of the relative profitability of two different hires.

5.1.2 Why Do Firms Sometimes Use Less-Preferred Recruitment Sources?

If, as we have argued above, some recruitment sources yield consistently less profitable new hires than others, why are such recruitment sources used at all? In fact, most firms do not use referral sources that they belive provide the worst (i.e., the least profitable) job candidates. Many firms use more than one referral source, however. Why does the firm not hire only from one (its best) recruitment source?

An important feature of preferred recruitment sources is that the flow of job candidates from the source cannot be expanded at zero cost. The need to fill a job by a particular date and the cost of leaving a vacancy open makes it optimal to consider all people who apply regardless of their recruitment source and make a job offer to the first job seeker that exceeds its reservation quality index. Sometimes the employer is lucky and is able to recruit from a preferred source and thereby have a good chance of hiring a better-than-average worker. On other occasions either job applicants are not available or the trusted referral source tells the employer the applicants are not outstanding. When this happens the employer must select the new hire from a pool of applicants obtained from less-preferred referral sources.

The phenomenon just described is illustrated by figure 2. The firm looks at applicants from three sources and hires the job applicants whose expected productivity net of their reservation wage ($\hat{P}_{ij}-W_i$) exceeds their reservation quality index. Even though the means of job applicant distributions from referral sources A and B are the same, a greater proportion of the applicants from A are hired, and for those that are hired the mean difference between productivity and wage is larger for referral source A than referral source B. The cause of these differences is the higher-quality information available on job applicants when they come from recruitment source A, which significantly increases the variance of the A distribution of expected productivities. The other reason why one referral source may be preferred over another is illustrated by comparing B and C. The job applicants from recruitment source C have a comparative advantage at the firm's jobs, so distribution C has a higher mean than distribution B. This results in a higher proportion of source C referrals being hired and higher mean net productivity from those that are hired.



Note: The firm accepts applications from all three referral sources and hires everyone with a $(\hat{P}_{ij}-W_i)$ greater than $(\hat{P}_{ij}-W_i)^*$ (i.e., the shaded areas). Note that the expected profitability of those hired from referral sources A (which provides unique high quality information on the candidate) and C (whose applicants typically have a comparative advantage) is greater than the expected profitability of those hired from source B.

Figure 2. The distribution of expected productivities net of the reservation wage $(\hat{P}_{ij}-W_i)$ of applicants by referral source

A firm's ability to recruit workers through its preferred recruitment source may also vary with season or the point in the business cycle.[23] Note that if a need for a large number of new hires all at once forces the firm to lower its reservation quality index ($\hat{P}_{ij}$-Wj), the result will be an increase in the proportion of all new hires that are from B, the least-preferred recruitment source.

5.2 Empirical Specification

Predictions generated by the theory just outlined can be tested by estimating models that characterize how the differences in the training required, reported productivity, and wage rates of two new hires in the same job are affected by the source of recruitment of these new hires. The predictions that do not imply a rejection of perfect labor markets relate to the impact of recruitment source on the levels of training, reported productivity, and wage rates. They are as follows:

- New hires referred by a union will receive higher wages and be more productive and less costly to train.
- New hires obtained from an expensive referral source (i.e., private employment agencies) either will be more productive and less costly to train or will be paid lower wages.
- New hires obtained from government agencies and schools will be less productive and more costly to train.
- New hires who are referred by a current employee or who are friends or relatives of a current employee will be more productive and less costly to train.

23. When the economy is at the bottom of a recession, firms are typically able to hire workers with greater-than-average levels of expected productivity. At the peak of the cycle, when labor markets are tight, the employers are typically forced to hire workers who have less training and experience, who come from less-preferred referral sources, and who are less productive. The result is that some of a firm's employees (those hired during a recession) are simultaneously more productive and better credentialed (i.e., have greater training and experience) than other employees. Thus, seasonal and cyclic variations in the tightness of labor markets can produce a within-firm correlation between productivity and referral source, even if all new hires at any given point in time were to have identical expected productivity.

The predictions that are unique to the imperfect labor market elements of the theory generally relate to the profitability of a new hire (the difference between productivity net of training cost and the wage). They are as follows:

- Union referrals will be less profitable.
- Employer referrals will be more profitable.
- Referrals by current employees of their friends and relatives will be more profitable.
- Employment agency referrals will seem more profitable (because recruitment costs are not part of the dependent variable).
- Referrals by a government agency will be less profitable.
- Referrals by schools will be less profitable.

Testing these hypotheses involves measuring the association between recruitment source and job performance in a sample of new hires. There is no need for structural models of the underlying population relationship between a worker's productivity and his or her referral source. Since an individual job seeker may appear to one employer as coming from one referral source and to another employer as coming from another referral source, such a relationship is not even well defined. Structural models of the relation between referral source and performance in a sample of job applicants cannot be estimated in data on new hires without bias because of the truncated nature of the sample (i.e., the job applicants who were believed to have low productivity were not hired, so observations on their job performance are not available) (Brown 1982). The point of the theoretical discussion is not that some recruitment sources typically yield better workers than others, but rather that, given these associations and the selection mechanisms at work in the labor market, significant associations may continue to exist between these recruitment sources and job performance even when the job, the employer, and the wage rates are all held constant.

The best method for testing for association between recruitment source and job performance is to compare two individuals at the same firm in the same job. A simple way to make this comparison is to estimate univariate or multivariate regressions predicting the difference between the training received by

(or reported productivity of) person 1 and person 2 as a function of the differences in their background characteristics. Let us assume that in a sample of people who have been recently hired, job performance, Y_{ij}, depends upon worker characteristics, X_{ij}, and job characteristics, Z_j. A linear model is specified then as follows:

(4) $Y_{ij} = BX_{ij} + \theta Z_j + u_{ij} + v_j$

where

Y_{ij} is a vector of outcomes such as training time, supervisor reports of a worker's productivity, or wage rate of employee "i" in job "j";

X_{ij} is a vector of background characteristics including recruitment source of employee "i" in job "j";

Z_j is a vector of measurable characteristics of the job including characteristics of the employer;

u_{ij} is a random error that is specific to the individual; and

v_j is a job-specific or respondent-specific error.

A problem arises in estimation of equation (4). Because the wage rate and the amount of training received depend upon unmeasured characteristics of the job that are correlated with characteristics of the occupant of the job, the covariance of X_{ij} and v_j is almost certainly nonzero, so biased estimates of coefficient vector B will be produced. This problem can be dealt with by estimating a model that predicts the differences in the outcomes experienced by two people in the same job at the same firm as a function of differences in their background characteristics, as is shown in equation (5):

(5) $Y_{1j} - Y_{2j} = B(X_{1j} - X_{2j}) + u_{1j} - u_{2j}$

where person 1 and 2 both work in the same job "j".

Estimating (5) (called model 1 in the analysis described in section 5.4) produces unbiased estimates of B if the X_{ij}'s are not correlated with the u_{ij}'s.

The sample of jobs for which paired data are available was generated in the following manner. A stratified random sample of 3,712 employers was interviewed. Three hundred of these did not have the time for a long interview, so shortened questionnaires were administered. Employers who received the

full questionnaire were asked to select "the last new employee your company hired prior to August 1981, regardless of whether that person is still employed by your company." A total of 818 employers could not provide information for a recent new hire. Most of these firms were small organizations that had not hired anyone in recent memory. The employers that provided information on one new hire were asked to provide data on a second new hire in the same job, but with contrasting amounts of vocational education. Of the 2,594 employers that provided data on one new hire, 1,511 had not hired anyone else in that job in the last two years, and 424 had not hired anyone with a different amount of vocational training for that position in the last two years. As a result, data are available on 659 pairs of individuals who have the same job at the same establishment. Missing data on specific questions used in the model further reduced the sample used for estimation to about 450.[24] Most of the establishments from which paired data are available are small. Seventy percent have fewer than 50 employees and only 12 percent have more than 200.

An alternative manipulation of (4) that eliminates Z_j and v_j calculates deviations from the mean for the firm and job is as follows:

(6) $Y_{ij} - \bar{Y}_j = B(X_{ij}-\bar{X}_j) + \iota_{ij}$

For about 2,140 firms, data are available on a good proxy for $Y_{ij}-\bar{Y}_{ij}$, the training time and productivity differences between person 1 and the "typical" new hire. A problem with this specification is that the survey did not collect measures of X_j. So the regressions that were run in the place of (6) were as follows:

(7) $Y_{ij} - \bar{Y}_j = b X_{ij} + u^{*}_{ij}$

If X_{ij} were a single variable rather than a vector, estimating (7) will produce a $\hat{b}$ that is biased toward zero relative to B. If X_{ij} and $\bar{X}_j$ are vectors, the effect of this bias on individual coefficients cannot be predicted with certainty. Estimates of the association between referral source and productivity outcomes that result from estimating (21) have been entitled model 2.

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24. About ten respondents seem to have misunderstood our question and reported that management and co-workers spent more than 520 hours training the new employee. Models include these observations but change the response to 520 hours.

5.3 Data

Data on the amount of time that is devoted to training new employees during their first three months was obtained from the employer (or immediate supervisor in large firms). Separate questions asked about training hours spent in formal training, informal training by management, informal training by co-workers, and watching others do the job (see questions 206, 271-280 in appendix B). For the sample of firms and jobs, the means for the typical worker were as follows:

- Watching others do the job--47.3 hours
- Formal training programs--10.7 hours
- Informal training by management--51.0 hours
- Informal training by co-workers--24.2 hours

A training time index was constructed that valued time invested in the latter three types of training activities during the first three months on the job. The management staff members who provided formal and informal training were assumed to be paid 1.5 times the wage of a co-worker and the trainee's time was valued as equal to 0.8 hour of co-worker training time. When supervisors and co-workers are giving informal training to a new employee, the trainee is almost invariably directly involved in a production activity. Employers report that for informal training, the trainees are typically as productive while being trained as they are when working alone. Consequently, informal training is assumed to involve only the investment of the trainer's time. The training index is equal to 1.8 times the hours in formal[25] training plus 1.5 times the hours in training by management plus hours in training by co-workers plus 4.[26] The arithmetic mean of this index is 124 hours, implying that the value of the time invested in training a typical new employee in the first three months is about 23 percent of the output that a co-worker would produce in three months. The first row of table 20 reports

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25. The cost of the trainer was assumed to be two-thirds of the foregone productivity, since formal training often involves more than one trainee. Thus $1.8 = (2/3)\ 1.5 + .8$.

26. The residual four hours was added to the index to avoid sample observations of zero. Time watching others was not included in the index because no data was obtained on how it varied across individuals in the same job.

TABLE 20

ASSOCIATION BETWEEN REFERRAL SOURCE AND THE TRAINING REQUIRED, REPORTED PRODUCTIVITY AND WAGE RATE OF A PARTICULAR WORKER (FROM MODEL THAT EXCLUDES OTHER CREDENTIALS) (PERCENTAGE DIFFERENCES FROM A WALK IN)

	Union	Employer	Don't Know	Friend	Relative	Other Referral	Newspaper	Employment Agency Referral	School Referral	Government Agency Referral	R^2
Total Training Time	-45.0**	-14.9*	-39.8***	- 4.9	- 2.8	2.8	- 7.5	- 4.8	4.2	4.7	.057
	(1.9)	(1.6)	(3.3)	(.9)	(.4)	(.3)	(1.0)	(.4)	(.5)	(.5)	
Reported Productivity:											
First 2 Weeks	+65.3***	3.3	8.7	4.7	.8	7.0	- 2.0	4.8	- 1.7	- 8.8	.085
	(2.7)	(.4)	(.7)	(1.1)	(.1)	(.9)	(.3)	(.5)	(.3)	(1.2)	
3rd-12th Week	24.3*	9.4*	9.3	4.0	1.8	2.9	.4	- 5.9	.6	- 5.4	.063
	(1.3)	(1.6)	(1.0)	(1.2)	(.4)	(.5)	(.1)	(.8)	(.1)	(1.0)	
Current or Most Recent	29.9*	5.5	3.8	4.1	- 2.3	4.7	.3	7.2	3.8	- 3.7	.106
	(1.6)	(.9)	(.4)	(1.3)	(.5)	(.9)	(.1)	(.9)	(.8)	(.6)	
Productivity Net of Training Cost	56.2	24.1**	49.7**	5.3	6.4	6.8	4.9	1.9	- 8.2	-19.2*	.062
	(1.3)	(1.7)	(2.3)	(.7)	(.6)	(.5)	(.5)	(.1)	(.7)	(1.4)	
Wage Rates:	59.5***	2.5	10.5**	.3	- 6.3***	.1	- 1.2	1.4	- 3.0	.2	.171
Starting	(4.8)	(.8)	(2.1)	(.2)	(2.6)	(.0)	(.5)	(.3)	(1.2)	(.1)	
Current	26.8**	7.5**	13.0**	1.8	- 4.0	2.7	- .9	3.0	- 1.3	- 3.1	.201
	(2.1)	(2.1)	(2.2)	(.9)	(1.4)	(.7)	(.3)	(.6)	(.4)	(.9)	
Employer Net Benefits (First Quarter)	-52.7	18.8	32.9*	4.6	7.3	5.3	4.5	- 7.3	- 4.2	-22.2**	.055
	(1.2)	(1.4)	(1.6)	(.6)	(.7)	(.4)	(.4)	(.4)	(.5)	(1.7)	

These estimates of model 1 include controls for the following variables--knew when hired worker was eligible for subsidy, hours worked per week, whether job was originally temporary, whether worker is a student. Models predicting current reported productivity and wage rates contain additional controls for tenure and tenure squared. Models predicting starting wage rates and employer net benefits contain years since hired and years since hired squared. T-statistics are in parentheses under the coefficient.

*p<.10 on a one-tail test
**p<.05 on a one-tail test
***p<.01 on a one-tail test

the effects of recruitment source on the logarithim of this training time index.

The impact of referral source on the success of a new hire will also be assessed by examining its association with the reported productivity of the new worker.[27] The questions asked for a supervisor's report of the productivity of new employees (see questions 282 and 283 in appendix B) after two weeks, twelve weeks, and at the time of the survey. The mean values of these indexes of reported productivity were as follows:

- The first two weeks--49.0
- The next ten weeks--64.6
- Current or most recent--81.4

If it is assumed that these productivity indexes are proportional transformations of true productivity plus a random error, it is possible to combine the estimates of time investments in training with these productivity estimates to produce estimates of productivity net of training costs of each new

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27. The interview questions about the productivity of recently hired employees were intended to provide indicators of the relative productivity of one worker at different points in time or two different workers in the identical job. They do not attempt to measure productivity in any absolute sense and therefore are not comparable across firms. Many of the uses made of these data only require that the index be correlated with true productivity. Estimates of the magnitude of training investments that combine time inputs of other staff with the lower productivity of the trainee require an assumption that the index is cardinal and a proportional transformation of true productivity plus a random error. The questions asking for a rating of the productivity of particular workers have remarkably low nonresponse rates. Only 4.4 percent of respondents asked about a particular new hire's productivity during the first two weeks respondents responded with a "don't know" or refused to answer. Comparably defined nonresponse rates for other questions were 8.2 percent for previous relevant experience, 3.2 percent for age, 6.7 for education, 8.6 percent for time spent in informal training by supervisor, and 5.7 percent for a three-question sequence from which starting wage rate is calculated. The low nonresponse rate implies that our respondents felt that they were capable of making such judgments and augur well for the quality of the data that results.

hire during the first three months of employment.[28] The formula for this calculation is given by (8):

$$(8)\quad NP_i = RP_i \left(1 - \frac{TW_i + TF_i}{520}\right) - \frac{CT_i + 1.5 * MTI_i + MTF_i}{520}$$

where NP_i = productivity net of training cost of new hire "i"

RP_i = relative productivity of new hire to productivity of typical worker with two years' tenure

$$= \frac{.167\ PROD2_i + .833\ PROD312_i}{PRODTYP}$$

$PROD2_i$ = reported productivity of new hire during the first two weeks

$PROD312_i$ = reported productivity of new hire over the next ten weeks

PRODTYP = reported productivity of typical worker in same job with two years' tenure

TW_i = time watching others over first three months

TF_i = time spent in formal training over first three months

CT_i = co-worker time spent training new hire informally over first three months

MTI_i,(MTF_i) = management time spent training new hires informally (formally) over first three months

Productivity net of training cost is defined relative to the productivity of a worker with two years' tenure. Its mean is .48.

Another dependent variable in the analysis is wage rate. Questions were asked about the recent hire's current and starting hourly wage rates and an average rate paid to workers with two years of experience. If the respondent

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23. If employer reports of a worker's productivity are equal to an unknown constant times the worker's true marginal product plus a random error, percentage differences in cell means of the productivity index can be interpreted as unbiased estimators of percentage differences in true productivity. If the variations in the productivity scores assigned by supervisors exaggerates the proportionate variations in the true productivity, our estimates of percentage impacts of recruitment source on productivity will be biased upward. Even though it is possible for a worker's true productivity to be negative, the scale was defined as having a lower limit of zero. Floors and ceilings on a scale typically cause measurement errors to be negitively correlated with the true value. If this were the case the result would be an understatement of the percentage impacts of recruitment source on the productivity, net productivity, and probitability of a new hire. In our view this latter type of bias is more likely than the former. Until the productivity indexes are validated this view must remain unsupported by any evidence.

could not report hourly rates, he or she was asked what the monthly salary was and how many hours the individual worked per week, an hourly wage was calculated by dividing salary by (4.33 times hours worked per week). Note that the starting rate is a nominal wage and that consequently the time since the person was hired must be controlled when the starting wage is a dependent variable.

The final dependent variable studied is a measure of the worker's productivity net of training cost minus the wage during the first three months of employment as follows:

$$(9)\quad \text{Employer Net Benefit}_{(i)} = \begin{pmatrix}\text{Productivity}\\ \text{Net of Train-}\\ \text{ing Cost}_{(i)}\end{pmatrix} - \begin{pmatrix}\dfrac{\text{Starting Wage}_{(i)}}{\text{Wage at two year}}\\ \text{tenure (typical)}\end{pmatrix}$$

The wage term is normalized on the wage of a typical worker with two years of tenure, whereas the training cost term has been normalized on the reported productivity of a worker with two years of tenure. Subtracting one from the other means we are assuming that by the end of the second year of employment, a typical new worker's productivity rises to the point where it equals the wage rate being received for the work. The difference between "employer net benefits" provided by the first and the second or typical worker was regressed on differences in their background characteristics and recruitment source. The results of this regression are presented in the bottom rows of tables 20-22. Most of the theory developed in section 5.1 relates to this variable. The employer net benefits or profitability of hiring the "i"th worker is a measure of $\Delta a_i + a_{ij} - \Delta w_i$ for the first three months of employment.

5.4 Results

The models that were estimated distinguish the effects of eleven different potential recruitment sources: (1) union, (2) employer, (3) friend of current employee, (4) relative of current employee, (5) newspaper, (6) employment agency referral, (7) school referral, (8) government agency, (9) walk-in, (10) other, and (11) "don't know." Walk-in is the excluded category, so the coefficients presented in tables 20-22 are estimates of the effect of the

named recruitment source in comparison to the effect of the new hire being a walk-in.

Estimates of model 1, predicting differences between two specific individuals in the same job, are presented in tables 20 and 21. Estimates of model 2 predicting differences between a specific new hire and the "typical" new hire are presented in table 22. All models presented have controls for the following characteristics of the job/worker match: (1) hours worked per week, (2) a dummy equal to 1.0 when the job was supposed to be temporary, (3) a dummy equal to 1.0 when the employee was eligible for subsidy and the employer knew this when the hire decision was made, and (4) a dummy equal to 1.0 when the employee was going to school part-time while working. In models of current or most recent reported productivity and wage rates, using specification 1, the difference between person 1 and person 2's tenure and tenure squared are both included as controls. The number of months since the hiring and its square (differenced) are entered in the models of starting wage rates and net benefits for employers. Table 20 reports the results for models that do not contain controls for other credentials and Table 21 presents results obtained when controls were included for the following background characteristics of the new hire: (1) vocational education, (2) previous relevant work experience, (3) experience squared, (4) age, (5) age squared, (6) education, and (7) sex.

The first thing to examine in tables 20 and 21 is the R^2 presented in a column on the far right-hand side. The R^2s for model 1, models of differences between two different occupants of the same job, range from 0.162 for current productivity to 0.314 for current wage rates when other credentials are in the model, and from 0.055 to 0.201 when other credentials are not included in the model. For cross-section models of differences between two people, these R^2s are remarkably high.

Table 22 presents the results of estimating model 2, predicting the difference between the training or productivity of the specific new hire and the typical new hire. R^2s of these regressions range from only .02 to .07, reflecting no doubt the misspecification of the model resulting from the absence of measurements of $\bar{X}$.

TABLE 21

ASSOCIATION BETWEEN REFERRAL SOURCE AND THE TRAINING REQUIRED, REPORTED PRODUCTIVITY AND WAGE RATE OF A PARTICULAR WORKER (FROM MODEL CONTAINING OTHER CREDENTIALS) (PERCENTAGE DIFFERENCES FROM A WALK IN)

	Union	Employer	Don't Know	Friend	Relative	Other Referral	Newspaper	Employment Agency Referral	School Referral	Government Agency Referral	R^2
Total Training Time	-35.5*	-12.6*	-30.1	- 4.2	- 3.5	8.8	- 5.4	2.1	4.0	1.7	.259
	(1.6)	(1.5)	(2.6)	(.8)	(.5)	(.9)	(.8)	(.2)	(.5)	(.2)	
Reported Productivity:											
First 2 Weeks	+54.9***	1.2	.7	4.7	1.8	.6	- 3.7	- 1.2	- 7.1	- 7.1	.208
	(2.4)	(.2)	(.1)	(1.2)	(.3)	(.1)	(.6)	(.1)	(1.1)	(1.0)	
3rd-12th Week	16.7	8.0*	3.6	4.0*	2.3	- .3	- .3	-10.2	- 1.2	- 4.0	.158
	(1.0)	(1.4)	(.4)	(1.3)	(.5)	(.1)	(.1)	(1.2)	(.3)	(.7)	
Current or Most Recent	21.0	3.9	.2	4.4*	- 2.3	2.2	- .5	4.9	2.6	- 2.9	.162
	(1.2)	(.7)	(.1)	(1.4)	(.5)	(.4)	(.1)	(.6)	(.5)	(.5)	
Productivity Net of Training Cost	35.8	20.2	31.7	4.8	- 5.0	- 2.7	2.0	- 8.3	-12.9	-15.4	.209
	(.9)	(1.5)	(1.6)	(.7)	(.5)	(.2)	(.2)	(.5)	(1.1)	(1.2)	
Wage Rates: Starting	51.7***	2.4	4.3**	.3	- 5.2***	- 2.2	- 2.0	- .6	- 4.0	.1	.171
	(4.9)	(.9)	(1.0)	(.2)	(2.5)	(.8)	(.9)	(.2)	(1.7)	(.1)	
Current	19.4**	6.8**	8.8*	1.7	- 3.1	.3	- 1.9	- .8	- 2.8	- 3.4	.314
	(1.7)	(1.9)	(1.6)	(1.0)	(1.2)	(.1)	(.7)	(.2)	(.9)	(1.1)	
Employer Net Benefits (First Quarter)	-61.9*	14.8	23.8	4.4	5.2	.4	3.3	-11.0	- 7.5	-18.1*	.122
	(1.5)	(1.1)	(1.2)	(.6)	(.5)	(.0)	(.3)	(.6)	(.6)	(1.4)	

These estimates of model 1 include controls for the following variables--age, age squared, education, female, relevant experience, relevant experience squared, knew when hired worker was eligible for subsidy, hours worked per week, whether job was originally temporary, relevant vocational education, whether worker is a student. Models predicting current reported productivity and wage rates contain additional controls for tenure and tenure squared. Models predicting starting wage rates and employer net benefits contain years since hired and years since hired squared. T-statistics are in parentheses under the coefficient.

*p<.10 on a one-tail test
**p<.05 on a one-tail test
***p<.01 on a one-tail test

TABLE 22

ASSOCIATION BETWEEN REFERRAL SOURCE AND THE TRAINING REQUIRED, REPORTED PRODUCTIVITY AND WAGE RATE OF A PARTICULAR WORKER (FROM MODEL CONTAINING OTHER CREDENTIALS) (PERCENTAGE DIFFERENCES FROM A WALK IN)

	Union	Employer	Don't Know	Friend	Relative	Other Referral	Newspaper	Employment Agency Referral	School Referral	Government Agency Referral	R^2
Total Training Time	1.2	2.8	3.2	0.0	2.5	5 8	8.0**	--	7.6	11.0	.032
	(14.8)	(4.9)	(7.0)	(2.8)	(4.0)	(5.8)	(3.9)		(6.3)	(5.8)	
Reported Productivity:											
First 2 Weeks	8.4	2.6	2.9	3.5**	- .3	0.0	2.0	--	- 4.1	- 1.9	.035
	(10.1)	(3.6)	(5.0)	(2.0)	(2.8)	(4.1)	(2.8)		(4.5)	(4.1)	
3rd-12th Week	8.3	3.1*	1.2	2.9**	1.5	3.6	.9	--	- 3.0	- .3	.038
	(6.6)	(2.3)	(3.3)	(1.4)	(1.9)	(2.7)	(1.8)		(2.9)	(2.7)	
Current or Most Recent	6.1	3.2*	4.1	1.1	2.5*	.3	1.2	--	- 3.0	- 3.4*	.070
	(5.2)	(2.3)	(3.1)	(1.3)	(1.8)	(2.7)	(1.8)		(2.9)	(2.6)	
Productivity Net of Training Cost	9.8	8.1*	- 1.4	2.9	.9	7.2	- 8.0	--	- 7.5	- 7.5	.039
	(14.8)	(5.2)	(7.2)	(3.0)	(4.2)	(6.1)	(4.0)		(6.6)	(6.0)	
Wage Rates:	13.5**	2.9	3.3	.4	- .7	- .7	- 1.6	--	- .7	- 3.7*	.068
Starting	(6.2)	(2.5)	(3.4)	(1.3)	(1.8)	(2.7)	(1.8)		(2.9)	(2.6)	
Current	3.4	4.3*	1.6	4.1**	.1	- 1.0	- .4	--	- 2.8	- 4.3	.020
	(7.6)	(3.2)	(4.4)	(1.8)	(2.6)	(3.9)	(2.5)		(4.1)	(3.7)	
Employer Net Benefits (First Quarter)	- 8.1	1.2	- 2.0*	.5	.5	3.5	- 2.3	--	- 2.2	.5	.040
	(9.2)	(3.4)	(5.1)	(2.0)	(2.8)	(4.1)	(2.7)		(1.4)	(3.9)	
Number of Cases with This Referral Source	26	145	50	788	276	109	309	69	96	110	

These estimates of model 2 include controls for the following variables--knew when hired worker was eligible for subsidy, hours worked per week, whether job was originally temporary, whether worker is a student. Models predicting current reported productivity and wage rates contain additional controls for tenure and tenure squared. Models predicting starting wage rates and employer net benefits contain years since hired and years since hired squared. T-statistics are in parentheses under the coefficient.

*p<.10 on a one-tail test
**p<.05 on a one-tail test
***p<.01 on a one-tail test

When tne background characteristics of the new hire are controlled (as in the models presented in table 21), coefficients reported reflect the effect of referral source on various measures of the success of the match between employer and employee, net of the effects of such worker credentials as age, relevant experience, sex, education, and vocational education. The theory developed in section 5.1, explaining how the employer's monopsony power in certain recruitment channels results in it being more profitable to hire from certain referral sources relates to the gross association between recruitment source and indicators of the success of the match, so the discussion that follows will focus on the results of models without controls for other credentials (table 20). When other credentials are excluded from the model coefficients on the recruitment source are generally slightly larger variables and more statistically significant. However, none of our main results would change if we were instead to focus on models that did contain controls for other credentials. Since the hypothesis tests are directional for all referral sources except "don't know," "other," and newspapers, the test statistics reported in this chapter are for one-tail tests unless otherwise stated.

5.4.1 Union Referral

A union referral was the recruitment source only about 1 percent of the time. The effects of a union referral are reported in the first column of tables 20-22. Since firms that use union referrals are likely to have to use the union referral service for all their new hires, coefficients on the union referral dummy in model 2 are seriously biased. The coefficients on the union referral dummy in model 1 with no controls for credentials imply that referrals by a union take 45 percent less time to train, are 65 percent more productive in the first two weeks, are 24 percent more productive in the next ten weeks, and are 30 percent more productive at the time of the interview. Despite the very small number of cases where only one of two new hires at a firm was referred by a union, the coefficients are significant at 0.03 level on a one-tail test in the training time regression, significant at the 0.01 level in the productivity in the first two weeks' regression, and significant at the .054 level in the current productivity regression.

Union referrals receive 60 percent higher starting wage rates and 27 percent higher current wage rates. These differentials are significant at the 0.0001 and 0.02 level, respectively. The effect of union referral on the profitability of the new hire, (e.g., productivity, net of training costs and wages) is given in the bottom row. Hiring a union referral rather than a walk-in lowers the profitability of the hire during the first three months by 53 percent of the mean productivity net of training costs of new workers. Despite the large size of the effect, it is statistically significant only at the 0.108 level.

5.4.2 Employer Referrals

About 6 percent of the new hires were referrals from other employers. In model 1 employer referrals have 15 percent lower training time (P = 0.053), 9 percent higher productivity during the third through twelfth week (P = 0.053), and 24 percent higher productivity net of training costs (P = 0.045). Starting wage rates are slightly and nonsignificantly higher. Employer net benefits during the first three months are larger by an amount equal to 18.8 percent of the net productivity of a typical new hire (P = 0.085). The employer does not, however, seem to receive any long-term benefit from hiring an employer referral, because wage rates at the time of the interview are 7.5 percent higher (P = 0.02) in model 1 and 4.3 percent higher (P = 0.09) in model 2 (table 22). An after-the-fact explanation of the delayed rise in wages may be the need to forestall a rehire of the worker by the employer who provided the referral.

5.4.3 Friends and Relatives of Current Employees

About 30 percent of the new hires were friends of either the owner or a current employee. Coefficients on the dummies for hiring a friend had the hypothesized signs, but were significant in only a few cases. In model 1, training time was a nonsignificant 5 percent lower, and reported productivity was 4 percent higher during the third to twelfth weeks of employment (P = 0.105), and 4.1 percent higher at the time of the interview (P = 0.102).

Model 2 has significant positive coefficients in the regressions predicting reported productivity during the first three months of tenure. Friends of current employees do not receive higher starting wages. A direct test of whether employers benefit during the first three months from hiring a friend of a current employee, rather than a walk-in, found no statistically significant difference.

About 10.6 percent of the new hires were relatives of either the owner or a current employee. Relatives were reported to be slightly though generally nonsignificantly more productive. Surprisingly, relatives received (in model 1) 6.3 percent lower starting wages (P = 0.009 on a two-tail test). The point estimate for the effect of hiring a relative rather than a walk-in on productivity net of training costs and wages in the first three months is 7.3 percent of the net productivity of a new hire. The effect is not statistically significant, however. The point estimate of the effect of hiring a friend, 4.6 percent, was quite similar. If effects of this nature last for only three months, they are worth the rather modest sum of $105 and $125.

Whether the hypothesized effects of referral source last beyond the first three months is, therefore, of great interest. A lower bound net benefit proxy can be constructed for the date of the interview by subtracting wage differentials from productivity differentials. Since this omits training time effects (which were not measured beyond the first three months), it understates the continuing impact of recruitment source and other variables on the profitability of particular new hires. The point estimates for this measure of the current effects of recruitment source are almost zero (1.8 percent) for relatives, but are a rather substantial 3.6 percent (P = 0.14) for friends. If this were to continue as long as the workers stayed at the firm, the present discounted value (at 33 percent to capture the effects of turnover) of the additional profit from hiring a friend of the owner or an employee rather than a walk-in is $2182. Substantively, this would be quite an important effect. The relevant coefficient is not statistically significant, however, and the result does not replicate in model 2 regressions, so some uncertainty remains about the long-run effect of hiring friends.

5.4.4 Newspaper Ads

About 12 percent of the new hires were recruited through a newspaper ad. Advertising in a newspaper is a rather inexpensive way of attracting a lot of job applicants. From the point of view of the employer, its main disadvantages are that sometimes too many applications are generated, that the average quality of these applicants may be low because there has been no prescreening, and that the firm has no special access to information on the applicants who appear. There does not appear to be any reason to expect new hires recruited through newspapers to be different from walk-ins. Model 2 regressions presented in table 22 suggest that people recruited through newspaper ads seem to require 8 percent more training ($P = 0.04$ on a two-tail test) and to have a productivity net of training costs that is 8 percent lower. None of the other effects of recruiting through a newspaper ad are significant, and coefficients from model 1 and model 2 are often of the opposite sign.

5.4.5 Private Employment Agency Referrals

About 2.7 percent of the new hires were referrals from private employment agencies. Since private employment agencies generally charge employers quite a substantial fee, their referrals were expected to be more productive, require less training time, and be paid lower wages. None of these hypotheses can be accepted. Point estimates imply effects in the opposite direction: training time is greater and productivity is lower. The data seem to imply that unless the use of private employment agencies saves the firm a great deal of screening and hiring costs, they are a bad deal for the firm. A hypothesis that employment agency referrals are sufficiently more productive to warrant a fee of 10 percent of wages is rejected for productivity net of training cost ($P = 0.05$ for model 1 with controls and $P = 0.0003$ for model 2) for current productivity in model 2 ($P = 0.001$). Many private employment agencies specialize in occupations that are in shortage. Their seemingly poor performance may reflect a tendency for employers to ask for agency referrals only when other recruitment methods have failed to yield a qualified candidate.

5.4.6 Referrals by Schools and the Employment Service

About 3.7 percent of the new hires were referred by a school and another 4.2 percent were referred by the employment service, CETA, a welfare agency, or the Urban League. It was hypothesized in section 5.1 that referrals from these sources would require extra training, be less productive, and be less profitable for the firm. The signs of the coefficients are consistent with the hypothesis in nineteen out of twenty cases. Because the number of such referrals is so small, however, only a few of the coefficients are statistically significant. In model 2, required training time is 7.6 percent higher for school referrals (P = 0.117) and 11 percent higher for government agency referrals (P = 0.032). Productivity net of training costs of school referrals during the first three months is lower by 8.2 percent in model 1 (P = 0.25) and by 7.4 percent in model 2 (P = 0.128). Starting wage rates are 3.0 to 4.0 percent lower (P = 0.089 on a two-tail test) when other credentials are controlled) in model 1 As a result, employer net benefits are a nonsignificant 4.2 percent lower in model 1 and 2.2 percent lower in model 2.

Productivity net of training costs of government agency referrals is 19.2 percent lower in model 1 (P = 0.077) and 7.6 percent lower in model 2 (P = 0.108). Model 2 regressions seem to imply that the lower productivity results in lower starting wage rates (a statistically significant 3.7 percent lower) and no net change (from a walk-in) in the size of employer net benefits. In contrast, model 1 regressions imply that government referrals do not get lower starting wage rates and that, consequently, the net benefits of hiring a government referral are lower by a statistically significant 22.2 percent (P = 0.042) of a new worker's net output. If controls for the workers' credentials are include in the model, the effect is a 17 percent reduction (P = 0.075).

5.5 Summary and Caveats

A theoretical model has been developed of how recruitment source influences the profitability--worker output minus training costs and wages paid--of a new hire. The theory implies that, since competition forces all firms to pay wages roughly equal to the market's modal assessment of a worker's generalized productivity a firm can profit from hiring a worker only if (1) it has

information about the worker not available to other employers that implies the worker is better than the market seems to indicate, or (2) the worker has a comparative advantage in working at that firm. The following specific hypotheses were derived from this general proposition:

- Employer referrals and new hires who are friends or relatives of the boss or a current employee will require less training, be more productive, and be more profitable than walk-ins.
- Employment service and school referrals will require more training, be less productive, and be less profitable than walk-ins.
- Because of the high fees, referrals from private employment agencies will require less training, be more productive, and seem more profitable than walk-ins.
- Union referrals will be paid more, be more productive, but be less profitable to the firm.

The hypotheses regarding the effect of private employment agencies were decisively rejected in every case. The remaining hypotheses specified the sign of thirty-eight regression coefficients in each of two specifications. In the regressions using the preferred model 1 specification, only three coefficients had the wrong sign and ten of the thirty-eight coefficients were significant at the 10 percent level or better. In the regressions using the less desirable model 2 specification, only five coefficients had the wrong sign and six of the coefficients were significant at the 10 percent level or better. If controls for credentials are dropped from model 1, only four coefficients have the wrong sign and sixteen of the thirty-eight coefficients are statistically significant at the 12 percent level or better. Except for predictions about the effects of private employment agencies, these results appear to provide reasonably strong support for the theory and the hypotheses developed from it.

A number of caveats are in order, however. The theory that was developed in section 5.1 related to the determinants of the present discounted value of the profit--difference between productivity net of training costs and wage rates--of hiring workers from different recruitment sources. Most of the data analyzed, however, related to only the first three months of employment. Data limitations make it difficult to address whether the effects documented for

the first three months of employment continue indefinitely. The present discounted value of the benefits of hiring from a particular recruitment source depend critically upon whether the effects uncovered for the first three months continue into the second, third, and fourth years of tenure. This gap in the analysis needs to be filled by studies that measure training costs beyond the first three months of employment.

Reductions in turnover are another potential benefit of giving preference to certain recruitment sources. Research into the association between turnover and recruitment source is needed as well. It is always possible that when turnover and net productivity later in a worker's tenure are analyzed, effects will be found that offset the associations found here between the profitability of a new hire in the first three months and recruitment source.

The patterns reported here could be the consequence of offering workers from different recruitment sources different implicit contracts (relating to the time pattern of the connection between productivity and wage rates) or from a general tendency to reward even predictable variations in productivity, after the fact, through promotions and wage increases. These possibilities cannot be ruled out until evidence has been obtained on the longer-run associations between turnover, productivity net of training and wages, and recruitment source.

Another area needing more research is the validity and scaling of the indexes of reported productivity. The current project has examined the association between the recruitment source through which a new employee was hired and the employers' report of the productivity, the training requirements, and wage rates of that new employee. Little is known about the scaling and validity of these reports. Since wage rates move with reported productivity, the calculations of net benefit are sensitive to the project's assumption that reported productivity is a proportional transformation of true productivity plus a random error. Research needs to be directed at validating these indexes and replicating these findings in other data sets.

VI. FINDINGS AND RECOMMENDATIONS FOR EMPLOYERS AND POLICYMAKERS

Considerable theoretical and empirical analyses have been undertaken in this study to enhance an understanding of employers' recruitment and selection behaviors. This chapter highlights the major findings and offers recommendations for employment and training policymakers, job seekers, and employers to consider.

6.1 Labor Market Intermediaries

Intervention in the job market by public agencies and institutions can take many forms. Perhaps the most obvious is carried out by the employment service. But also affecting employer and job-seeker search are a number of rules, regulations, and customs regarding the communication of information regarding job openings and applicant qualifications. This study provides evidence that considerable resources are devoted to the hiring process. Public intervention that causes more efficient labor market exchange may thus be highly beneficial.[29]

Finding 1: Labor Market Transaction Costs Are High

To hire one new employee required an average of 9.9 hours of staff time at the hiring firm, .75 hours of staff time by employers who are checked for references, and about 14 hours of active search time by job seekers.[30] The

29. It should be noted that the goals of public intervention into the labor market are not always efficiency-based. Equity concerns, ensuring that all individuals are treated equally, and the goal of targeting employment assistance to the least employable individuals may conflict with an efficiency criterion. If efficiency can be gained without trading off other goals, however, public policy is unambiguously better off.

30. The minimum number of hours of job-seeker time required to fill one position was estimated by assuming a phone call takes three minutes, a visit to the firm requires one hour even if the firm does not allow an application to be filed; filling out an application takes an additional fifteen minutes, an interview adds another thirty minutes; and a call-back interview adds one and a half hours. During the two-week period, the rate of phone calls, visits, applications, and interviews to new hires was respectively 12.8, 8.9, 7.0, and 3.4. It was also assumed that each reference check took fifteen minutes of some other employer's time.

indirect costs were also very significant. A vacancy typically remained unfilled about one week, and job seekers averaged six weeks of unemployment for every position that was filled. Industries and jobs with high rates of turnover invested less in selecting each new hire (8.2 hours in the construction industry and 7.25 in retailing). With turnover at these companies often over 150 percent a year, an employer's direct hiring costs may have exceeded 1 percent of the firm's wage bill. [31]

Finding 2: Errors (Hiring Mismatches) Are Frequent and Costly

A large proportion of hiring decisions seemed to turn out to be mistakes. Fewer than half of newly hired workers were still at the firm six months later. The 7 percent of new hires sampled in the first wave of the employer survey who ended up being fired were, on average, one-third less productive than those who stayed at the firm (Bishop 1982a, p. 192). The 23 percent who quit were 10 to 20 percent less productive than those who stayed. When someone must be replaced, the firm must reincur selection, hiring, and training costs that, in the first three months of employment, totaled about one and a half (1.5) months of output by a tenured employee (Bishop 1982b, p. 8). Even high turnover occupations such as service jobs required extensive initial training that, in the first three months, had resource costs that were equivalent to one month's production by an employee with two years' tenure. Some of these training expenses provided general skills that were useful in other firms, so the training was not a total loss.[32] Taking account of the fact that some of these training costs were incurred by the worker, not the employer, the social cost of replacing a worker who has quit or been fired after the first three months equaled about one month's output (.67 of a month in service occupations) by an experienced worker.

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31. It is assumed that in the retail sector, three new hires must be employed every year to keep two full-time positions filled, and that the staff members who do the hiring are paid twice the average wage.

32. The fact that the rate of growth of productivity net of employer training expense rose much more rapidly than wage rates during the first year of employment suggests that the specific training made up more than half the total (Bishop 1982a, p. 183). Further evidence is provided by the fact that when models of productivity net of training cost were estimated, coefficients on tenure were invariably larger than coefficients on previous relevant experience (Bishop 1982b).

Finding 3: Recruitment and Selection Behavior of Employers Seems to Be a Rational Response to the Environment in Which They Operate

A theory of a firm's choice of recruitment and selection strategies based on an assumption of rational profit-maximizing behavior in an environment of imperfect information was developed and tested. Most of the predictions of the theory were supported by the data. Three examples follow:

- Direct costs of selecting a new employee were lower for part-time employees, temporary or seasonal employees, and employees who did not receive much training.
- Direct costs of selecting a new employee were greater when the establishment was large, the establishment was part of a larger firm, the establishment received many visits and phone calls from job seekers, it had advance notice of the opening, the skills for which training was offered were specific, and there were many other employers who used the general skills that were taught.
- New hires coming from recruitment sources that typically provide the employer with unique an accurate information about the applicants--referrals by othe. employers or current employees--seemed to be more profitable for the firm than referrals from schools or the employment service.

The only finding that directly contradicted the theory was the discovery that new hires referred by private employment agencies seemed to be less productive and required more training time than other new hires.

While the hiring behavior of certain specific employers may have had to justify idiosyncratic features, the average behavior of employers seems to be a rational response to the constraints placed on them. Therefore, the high costs of labor market transactions and, in particular, hiring mismatches result primarily from insufficient flows of information. A number of recommendations follow from this conclusion.

Recommendation 1: Public Policy Should Attempt to Improve the Quality and Lower the Cost of Information to Which Employers Have Access When They Hire New Workers

Legal developments have made many employers reluctant to report honestly the performance of people who previously worked for them, even when the job

applicant has given the employer's name as a reference. The Buckley Amendment has limited the information that employers can obtain from schools about job applicants. Although civil liberties concerns may take precedence, these developments do have the following unfortunate consequences:

- Employers become reluctant to use formal recruitment mechanisms. (They prefer to obtain recommendations from trusted sources of information, such as current employees and employers.)
- Mismatches are more frequent, so a greater proportion of new hires must be fired or quit.
- The inability of an employer to get reliable information about how a job applicant performed in previous jobs forces selection on the basis of such signals as education and race, which are weakly correlated with being a good employee.
- The inability to distinguish one member of high-risk group from another may result in not hiring anyone from that group (e.g., high school dropouts and young black men).
- If a job is viewed as temporary, the worker may feel there are no consequences in doing it poorly and may, as a result, work less hard.
- The inefficiency of the matching process that results causes aggregate unemploment rates to be higher and total employment and the real wage received by new employees to be lower.

Recommendation 2: Schools and Training Programs Should Provide Their Graduates with Certificates or Diplomas That Describe What That Individual Has Learned and Accomplished, Not Just a Certification of Attendance

The study did not specifically test how much attention employers pay to such documents. But the findings imply the importance of specific information, and this recommendation is offered because it would improve the quality of information available to employers about school leavers and training program graduates and, consequently, should reduce the number of mismatches, turnover, and unemployment and increase the average wage received by such graduates.

Recommendation 3: Schemes Designed to Subsidize Employers to Hire Disadvantaged Workers Should Be Designed in Ways That Minimize the Employer's Cost of Searching for Subsidy-Eligible Workers

The purpose of the Targeted Jobs Tax Credit is to induce employers to hire certain categories of disadvantaged workers. Eligibility for a tax credit is based on characteristics of the new employee--welfare recipient, low income family, and so forth--that employers are typically not aware of when making their hiring decisions. For employers to make a conscious effort to hire eligible workers, they must either ask possibly illegal questions of all job applicants or arrange for a labor market intermediary to screen and refer eligible job candidates. These costs create a barrier to participation in the program. If eligibility were based solely on some combination of observable --characteristics such as age, residence, schooling, or job--employer participation would be much greater.

Recommendation 4: Additional Coordination and Contact Between Public Employment Agencies (i.e., Job Service, CETA Contractors, and Employers) Is to Be Encouraged

Such contacts can be formal through scheduled informational interviews or informal through professional associations or community groups. As policymakers assess the success of employer involvement in training programs through private industry councils, they should attempt to ferret out those elements in successful programs that have led to widespread and genuine employer involvement.

An implication of the analysis reported here is that large employers may be a more suitable target of employment service's job development activities than small establishments. Larger firms, due to economies in interviewing and screening applicants, engage in more extensive searches (i.e., review more applicants per offer) but less intensive searches (i.e., spend more hours per applicant) than their smaller counterparts. On the whole, total hours per hire are higher and, because of the extensive nature of their search, larger firms should welcome third-party screening, provided they have confidence in it. Indeed, the study shows that larger firms are more likely than smaller firms to be using the employment service.

Continued emphasis on paperwork reduction and automation is prescribed to bolster employer participation and to redirect staffing resources in order to improve relations with the business community and intermediate better matches between employers and job seekers in the labor market.

6.2 Job Search Counseling

One of the mechanisms by which the government attempts to help unskilled workers find jobs, aside from direct referrals, is job counseling. Only certain kinds of counseling have been shown to help clients get a job and off the rolls of government income-maintenance programs. An important finding of this study has been to document the significant discrepancy between the modes of job search used by workers and the recruitment channels used by employers. Such information should assist public and private job search counselors.

Finding 4: Informal Methods of Job Searching--Contacting Friends and Relatives and Directly Contacting Employers--Are More Likely to Be Successful Than Formal Methods--Contacting the Employment Service or Answering Newspaper Ads

The data presented in table 23 enable the reader to make a rough comparison between the frequency with which certain methods of job search are used and the proportion of jobs that are found through each method. The two columns on the left report the percentage of jobs found by each method. The third column reports the percentage of successful job finders who used each method at some time during their job search. The job search methods being used by people currently seeking jobs are given in columns 4 through 6. The fourth column is for employed job seekers and the 5th and 6th columns are for unemployed job seekers. The major points to be derived from the table are as follows:

- Even though a large proportion of all jobs are found through contacts made through friends and relatives of the job seeker, the proportion of those currently seeking work who report using these methods is very small. When a job is filled with a friend or relative of a current employee, the firm has typically looked at a smaller-than-normal number of applicants.
- While the percent of job seekers that have recently contacted the job service is about 25 percent for the unemployed and 10 percent for the employed, only 3.6 to 5.1 percent of all jobs are found through this method.

TABLE 23

THE EFFICIENCY OF JOB FINDING METHODS

	Percent Finding Job by This Method		Percent Using Method				Ratio of Jobs Accepted to	
	1981 Employer Survey	1973 Worker Survey[a]	Job Finders 1973[a]	Employed Job Seekers[b]	Unemployed Job Seekers 1/74[c]	Unemployed Job Seekers 5/83[c]	Contacts[d]	Visits[d]
Friend								
Job at their firm	31.4	12.4	50.8					
Other job	N/A	5.5	41.8	17.9	13.7	17.3	4.4	6.5
Relative								
Job at their firm	10.1	6.1	28.4					
Other job	N/A	2.2	27.3					
Apply Directly	24.8	34.9	66.0	69.9	70.5	79.6	2.0	2.7
Newspaper Ad	11.8	11.8	50.0	25.3	28.0	33.3	1.0	2.3
Employment Service	3.6	5.1	33.5	10.4	26.1	24.2	1.9	3.5
Private Empl. Agency	2.7	5.6	21.0	5.5	8.8	5.5	3.1	5.3
School	3.7	3.5	12.5				5.0	11.5
Union	.7	1.5	6.0	6.9	8.2	5.0	4.1	8.7
Employer	5.6	N/A	N/A				N/A	N/A
Other	5.6	11.4	N/A				N/A	N/A
Total	100	100						

[a] Rosenfeld (1975, pp. 39-43).

[b] Rosenfeld (1977, pp. 58-62).

[c] Employment and Earnings (1974, Table A 15); Employment and Earnings (1983, Tabl3 A19).

[d] Ratio is given as a percertage Employment Opportunity Pilot Project Household Survey (1982).

- Jobs that are filled through a newspaper ad typically receive 2.56 times as many applications and involve 2.25 times as many interviews as those filled by walk-ins. In the Employment Opportunities Pilot Project household survey data, obtaining one job through this method required an average of 100 contacts and forty-three employer visits.
- Applying directly at the firm is a method used by most job seekers and is responsible for a very large share of jobs found. Despite the fact that many firms contacted do not have a vacancy, obtaining one job through this method requires, on the average, only fifty contacts and thirty-seven visits.
- Search methods that involve an intermediary in the process of matching job seekers to known vacancies reduce the number of visits required to obtain one job. EOPP household data show that employer visits per job obtained were 29 for the employment service, 19 for private employment agencies, 8.7 for school placement offices, and 11.5 for unions. However, jobs filled by a referral from a labor market intermediary (except for union referrals) typically involve higher direct costs to the employer than jobs filled through more informal referral networks or by walk-ins. No doubt some firms turn to formal referral mechanisms only after informal recruitment has not yielded a satisfactory candidate.

From the point of view of job seekers the disadvantage of depending on labor market intermediaries for job referrals is that these intermediaries have only a small number of jobs they can make referrals for. As a result, they must screen the job applicants that come to them, and the typical job seeker cannot obtain enough referrals from this source to have reasonable probability of finding an acceptable job through this mechanism.

Recommendation 5: Job Search Counseling Should Teach Job Seekers How to Develop and to Use Contacts Such as Relatives, Friends, or Acquaintances in Addition to Methods Such as the Job Service, Newspaper Ad Responses, and So Forth

Employers prefer informal recruitment sources over formal sources. Evidence from the employer survey suggests that this preference is quite rational from the employer's point of view: the direct costs of selecting a new employee are lower when informal sources are used, and new hires recruited from informal sources seem to be more productive than new hires recruited through formal sources, such as the employment service. Granovetter reports that acquaintances are often better contacts than friends or relatives, so

counselors should encourage contacts with teachers, ministers, community organization workers, community politicians, and so forth.

Recommendation 6: Counselors Should Encourage Direct Walk-In Contacts

An important advantage of this method is that it can be used more intensively than other methods because no prescreening by an intermediary (such as a school or the employment service) is necessary and it is not limited by the extensiveness of the job seeker's friendship network.

6.3 Implications for Employers

How a firm chooses to recruit and select its work force can have a significant effect on the firm's profitability. Good advice on which strategies to adopt is potentially of great value. An attempt to provide some advice follows.

Finding 5: Firms Face Very Different Circumstances

Some employers are satisfied with the quality of their current employees; others are not. Some employers are in tight labor markets where it is very hard to recruit qualified applicants; others are in labor markets in which they are flooded with highly qualified job applicants. Some employers can predict far in advance when they will need to hire new workers; others cannot. Some employers must hire large groups of new employees all at once; others typically hire new workers one at a time.

Recommendation 7: Employers Should Adapt Their Recruitment and Selection Strategies to Their Own Circumstances and Experience

No single recruitment strategy or policy is optimal for all firms. Firms that are dissatisfied with the attitude or quality of their work force will be less favorably impressed by a referral by a current employee than a firm that is satisfied with its workers. Firms that have plenty of walk-ins do not need to advertise. The connection between the firm's circumstances and the optimal policy are not always obvious, so the firm should experiment with alternative recruitment strategies and attempt to learn from their experience.

Finding 6: A Number of Firms Do Not Check References

Checking references is associated with slightly higher direct costs of selecting a new hire. Even though checking with past employers seems to reduce the risk of a mistake, 37 percent of the firms in the employer survey did not check the references of the person they last hired. Despite the fact that many firms have a formal policy of not handing out any information about past employees except their dates of employment and duties, personal interviews in the Columbus, Ohio area reveal that most personnel officers report a telephone conversation with the previous supervisor of a job applicant often gives a good indication of performance in the applicant's previous jobs.[33]

Recommendation 8: Employers Should Consider Adopting a Policy of Attempting to Talk Informally with a Job Candidate's Previous Supervisor(s) and Asking for an Off-the-Record Assessment of the Job Candidate Prior to Making a Job Offer[34]

The costs of such a reference check are low, not more than fifteen or 30 minutes of the hiring official's time. The costs of a mistake are quite high. When a worker quits or is fired after three months, the firm is likely to lose the equivalent of 1.5 months of output of a worker with two years' tenure. For a job where total compensation is $15,000 per year this is equal to $1,875. If reference checks were to reduce the separation rate by 5 percentage points the firm would have an expected saving of $94 every time it made a reference check of its most highly-ranked job candidate. Even if a reference check lowers the separation rate by only 1 percentage point the firm should engage in reference checks because the 15 minutes it might take to make the phone call is not likely to be worth more than $18.80, the expected savings.

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33. These data were collected in a pretest of a national survey on employer hiring decisions undertaken by the National Center for Research in Vocational Education. The pretest involved fifty-six employers from the Columbus, Ohio area and was performed in November-December 1982.

34. The word "consider" is used because it is quite clear that circumstances exist where a phone reference check is not necessary or possible. Also, our study does not establish that doing a reference check over the phone results, on the average, in hiring better employees. The basis of the recommendation is that it is not very costly, and some of the employers felt it was very useful.

Finding 7: Keeping Applications on File Reduces Hiring Costs and Increases Job-Seeker Contacts

A policy of reviewing past applications when there is a new opening and asking qualified applicants to interview for the position generally lowered the number of interviews that had to be conducted to fill a position, lowered the direct costs of selecting a new hire, and increased the flow of job-seeker phone calls by 31 percent and visits by 36 percent. Despite those potential benefits and the low cost of adopting such a policy, 27 percent of the firms that received personal visits from job seekers did not allow any of their visitors to file an application.

Recommendation 9: Employers Should Consider Adopting a Policy of Accepting and Retaining Applications Even When There Are No Current Vacancies and Carefully Reviewing These Applications When New Positions Open Up

Our study found that the reputation of a firm regarding the recall of previous applicants for an interview has important effects on the number of job seekers contacting the firm. The cost of calling a previous applicant and asking whether they are still available would seem to be small but discussions with employers suggest that even when applications are on file many firms do not give these applications real attention when an opening appears.

Finding 8: New Hires Recruited through a Private Employment Agency Are Not More Productive Than New Hires Recruited from Other Sources

Agency referrals required more training and were reported to be less productive in the first three months of employment. Estimates implied that such referrals were less profitable for employers by an amount equal to 5.3 percent of the output of a typical worker with two years' experience in that job

Recommendation 10: Employers Should Use a Private Employment Agency Only After All Other Recruitment Methods Have Been Tried and Have Failed to Yield a Qualified Candidate

Private emploment agencies charge high fees yet do not provide higher quality workers. Employers should consider either doing their own advertising, recruiting and screening, or using referral sources that are less costly or free.

APPENDIX A

NATIONAL SURVEY OF EMPLOYER HIRING AND TRAINING PRACTICES: SECOND WAVE FIELD REPORT

NATIONAL SURVEY OF EMPLOYER HIRING AND TRAINING PRACTICES:

SECOND WAVE
FIELD REPORT

VOLUME I

Submitted To:

CENTER FOR RESEARCH IN VOCATIONAL EDUCATION

OHIO STATE UNIVERSITY

1960 Kenny Road

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PURCHASE ORDER NUMBERS
411472 and 411473

Submitted By:

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53 Bank Street

Princeton, New Jersey, 08540

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March, 1983

TABLE OF CONTENTS

ORGANIZATION OF THIS REPORT

This report is in two volumes. Volume I contains a detailed analysis of disposition of the sample. Volume II contains the report and supporting materials on survey procedures and survey materials.

THIS IS VOLUME I

INTRODUCTION

This is the second wave of a survey of employers designed to measure knowledge, utilization and job retention by employees hired under the tax incentive and employment training programs. For this study, efforts were made to contact a total of 5,421 employers who had been interviewed in 1980 for wave one of the survey. Potential respondents were first contacted by letter, were then called and asked to make an appointment for an interview, and were then interviewed at the scheduled time. An unlimited number of calls were made to each potential respondent in an effort to complete an interview. An effort was made to conduct a very short form of the questionnaire with respondents who refused to participate.

Part way through the interviewing, Gallup believed that sufficient money was available in the budget to conduct supplementary interviews with a new sample. A total of approximately 1,000 supplementary names were given to Gallup. However, due to the inability to confirm full addresses and telephone numbers for a substantial number of these interviews and due to the fact that a large percentage were duplicates of the original sample, the supplementary sample resulted in only 400 useable names. All names sent letters were contacted by Gallup. However, because the interviewing budget was exceeded, interviewing on the supplementary sample was stopped before the effort was exhausted, with 300 interviews completed.

Duplicates

It should be kept in mind that some cases were duplicate respondents. That is, one person was interviewed two, three or four times about two, three or four separate locations of the company. Gallup was told that duplicate respondents were given the same identification number by WESTAT. This proved not to be the case in some instances. As a result, we feel that the ability to complete more than a single interview with duplicate respondents was hampered. In fact, very few duplicate respondents were willing to complete more than one interview. In the calculation of completion rates, if a single individual was requested to complete four interviews about four separate locations and refused the interview, this was counted as four refusals. Similarly, if the individual completed one interview, it was counted as one complete and three refusals. This somewhat lowered the completion rate from what it would have been if each respondent had been counted only once, regardless of how many interviews he or she was expected to complete.

SURVEY COMPLETION RESULTS

SAMPLE SITES

Following is a list of the sample sites, with the site code used.

Site #	Target Area	Program Administered By:
01	Franklin County (Columbus, Ohio)	Urban League
02	Corpus Christi and surrounding areas (Texas - Aransas, Duval, Jim Wells, Kenedy, Kleberg, Live Oak, McMulton, Nueces, San Patrico & Bee Counties)	Coastal Bend Manpower Consortium
03	East Baton Rouge Parish (Baton Rouge Louisiana)	City of Baton Rouge
04	Mobile Metro Area (Alabama, Mobile Co. Alabama, Baldwin Co. & Escambia Co. Florida)	Mobile Co. Consortium
05	Pike County, Kentucky	Eastern Kentucky Concentrated Employment Program (CEP)
06	Weld County, Colorado (Creeley)	Weld County Manpower Office
07	Marathon County, Wisconsin (Wausau)	Job Service or Private Industry Council
08	Southwest corner of Washington (Cowlitz, Pacific, Grays Harbor, and Wahkiakum Counties Washington)	Job Service
10	West Central Missouri (Carroll, Chariton, Lafayette, Saline, Johnson, Pettis Counties, Missouri)	Missouri Employment and Security Commission
11	Lucas County, Ohio (Toledo)	Employment Service
12	Hamilton County, Ohio (Cincinnati)	Urban League
13	San Antonio Texas and surrounding counties (Bexar, Guadaloupe, Comal, Gonzales, Karnes, Dewitt, Victoria, and Wilson)	Project SER of Jobs for Progress, Inc.

SAMPLE SITES

Site #	Target Area	Program Administered By:
14	Beaumont/Port Arthur, Texas area (Jefferson, Hardin, and Orange Counties)	Project SER of Jobs for Progress, Inc. Texas Employment Commission (TEC)
15	Birmingham Alabama & Metropolitan Area (Walker, Jefferson and Shelby Counties)	Urban League Opportunities Industrial Center
16	Buchanan and Dickenson Counties, Virginia	Region I Operations Center
17	Alamosa County, Colorado	Project SER of Jobs for Progress, Inc. Virginia Neal Blue or the Employment Service
18	Outagamie County, Wisconsin	Fox Valley Sheltered Workshop, Job Service (Wisconsin Employment Service)
19	Skagit and Whatcom Counties, Washington	Job Service
21	Southwest Missouri (St. Francoise, St. Genevieve, Perrsy, Iron, Bollinger and Cape Girardeau Counties, Missouri)	Missouri Employment and Security Commission
22	Orleans Parish, Louisiana (New Orleans)	Louisiana Employment Service
23	Mention City on label (Calcaseau Parish, and Lafayette Parish, Louisiana)	Louisiana Employment Service or Lafayette Parish Employment and Training Office
24	Pensacola Metropolitan Area, Florida (Escambia, Okaloosa, and Santa Rosa Counties)	Escambia/Okaloosa Consortium
25	Harlan County, Kentucky	Eastern Kentucky Concentrated Employment Programs (CEP)

SAMPLE SITES

Site #	Target Area	Program Administered By:
26	Mention City on label (Logan County and El Paso County, Colorado)	Project SER of Jobs for Progress, Inc. Colorado Employment Service
27	Winnebago County, Wisconsin	Winnebago/Ford-du-Lac Consortium
28	Read town from label (Skamania, Lewis, Jefferson, and Mason Counties, Washington)	Job Service
30	Northwest Missouri (Grundy, Buchanan Daviess, Clinton, Caldwell Counties, Missouri)	Missouri Employment Security Commission
31	Montgomery County, Ohio (Dayton)	Office of Job Development and Training in Dayton, and Employmen and Training in Montgomery County

OVERALL DISPOSITION ANALYSIS

The final completion rates have been calculated as follows:

$$\frac{\text{Number of Completed Interviews (Codes 01, 02, 03)}}{\text{Original Sample Minus "Out of Business" and "Not Eligibles" (Codes 09, 10)}}$$

The overall completion rate, based on this calculation was 76.0%.

The refusal rate has been calculated as follows:

$$\frac{\text{Refusals by Specific Respondent (Code 04) and Refusals by Someone Else in the Company (Code 05)}}{\text{Original Sample Minus "Out of Business and "Not Eligible" (Codes 09, 10)}}$$

The overall refusal rate, based on this calculation was 12.8%.

Number of Calls Made

Although the original contract called for four calls to be made to one class of sample (unsubsidized employees) and eight calls to be made to a second class of sample (subsidized employees), it became clear early in the survey work that this would not produce an acceptable level of completions. Gallup switched to unlimited calls for the remainder of the survey. The table on the following page shows the number of calls made to each of the two classes, plus the distribution of calls made which resulted in completed interviews and those which did not result in a completed interview.

NUMBER OF CALLS MADE

Number of Calls	Total			Completed Interviews			Non-Completed Interviews		
	All	Number of Unsub. (0)	Number of Sub. (1)	All	Number of Unsub. (0)	Number of Sub. (1)	All	Number of Unsub. (0)	Number of Sub. (1)
4 or less	2852	2467	385	1879	1614	265	973	853	120
5 - 8	1652	1320	332	1128	893	235	524	427	97
9 - 14	621	482	139	339	263	76	282	219	63
15 - 19	85	69	16	42	35	7	43	34	9
20 - 24	29	18	11	19	11	8	10	7	3
25 - 29	7	6	1	4	4	-	3	2	1
30 - 34	1	-	1	-	-	-	1	-	1
35 - 39	2	-	2	1	-	1	1	-	1
Don't Know	24	23	1	-	-	-	24	23	1
N =	5273	4385	888	3412	2820	592	1861	1565	296
Mean	5.12	4.94	5.96	4.95	4.80	5.65	5.42	5.20	6.57
% More Than 8	14.1	13.1	19.1	4.9	11.1	15.5	18.2	16.7	26.4

DETAILED DISPOSITION ANALYSIS

Throughout the interviewing process, detailed records were kept of the disposition of each sample name, and each was coded with a detailed code.

For this final analysis, these detailed codes have been grouped into ten categories. The code list on the following page shows the codes used in this report, together with a key to the detailed codes associated with each sample name on the tapes provided.

KEY TO DISPOSITION CODES

New Code	Original Code (Card 16)	Substance
01	01	Sections A, B, C Completed.
02	02	Entire Section (A, B, C) of the main questionnaire could not be answered.
03	21	Completed Short Form.
04	04	Refusal by designated respondent.
05	03	Refusal by Company.
05	05	Refusal, don't know by whom.
06	14	No answer (unlimited number of calls until end of field period).
07	07	Respondent not available during field perio
07	08	Callback requested by company after end of field period.
07	09	Respondent requested callback after end of field period.
07	10	Respondent scheduled interview after end of field period.
07	11	Interview rescheduled by respondent after end of field period.
07	18	Respondent will call Gallup; not completed until after end of field period.
07	13	Sent to tracking; not completed within field period.
07	19	Letter re sent; not completed within field period.
08	20	Other: Miscellaneous.
08	06	Other: termination by designated respondent
08	15	Other: Respondent language/hearing problem.
08	16	Other: Organization was not-for-profit.
08	17	Other: Company changed status, e.g., merger
08	23	Other: Duplicate, not interviewed.
08	24	Other: Duplicate, completed.
08	25	Other: Duplicate, refusal.
09	12	Company out of business.
10	22	Not eligible, e.g., no employees.

COMPLETIONS AND REFUSALS BY SITE

The table on the following page shows the completions and refusals by site, using the formulae discussed earlier (i.e., removing from the base the companies which were out of business or which had no eligible employees).

SUMMARY OF COMPLETIONS AND REFUSALS BY SITE

Site Number	Total Number	Total Ineligible (09, 10)	Total Eligible Sample	Completed		Refusal	
				Number	Percentage	Number	Percenta
01	402	43	359	278	77.4	38	10.6
02	301	22	279	210	75.2	25	9.0
03	346	15	331	244	73.7	45	13.6
04	345	32	313	239	76.4	42	13.4
05	188	24	164	116	70.7	24	14.6
06	101	9	92	80	87.0	6	6.5
07	138	9	129	111	86.0	14	10.9
08	299	22	277	217	78.3	23	8.3
10	243	15	228	175	76.8	24	10.5
11	184	11	173	140	80.9	19	11.0
12	212	10	202	144	71.3	32	15.8
13	255	12	243	183	75.3	33	13.6
14	200	20	180	129	71.7	29	16.1
15	246	23	223	159	71.3	43	19.3
16	108	13	95	66	69.5	14	14.7
17	55	4	51	42	82.4	4	7.8
18	59	1	58	42	72.4	9	15.5
19	217	12	205	178	86.8	15	7.3
21	138	8	130	97	74.6	18	13.8
22	160	7	153	109	71.2	23	15.0
23	188	10	178	130	73.0	18	10.1
24	145	11	134	90	67.2	27	20.1
25	80	5	75	53	70.7	16	21.3
26	57	10	47	39	83.0	4	8.5
27	48	4	44	38	86.4	5	11.4
28	127	14	113	92	81.4	12	10.6
30	118	8	110	88	80.0	13	11.8
31	313	15	298	223	74.8	50	16.8
Total	5273	389	4884	3712	76.0	625	12.8

DETAILED FINAL DISPOSITION BY TYPE AND BY SITE

The table following shows complete details for each site, showing the number of final disposition by each type for each site, and showing the percent each type represents of the total. In this table, all sample names are included in the base, including those out of business and without eligible employees.

FINAL DISPOSITION BY SITE

Distribution of Finalizations by Type, by Site.
Percent of All Finalizations by Type, by Site.

Site	COMPLETES 01 #	01 %	02 #	02 %	03 #	03 %	Subtotal Groups 1, 2, 3 #	Subtotal Groups 1, 2, 3 %	REFUSALS 04 #	04 %	05 #	05 %	Subtotal Groups 4, 5 #	Subtotal Groups 4, 5 %	OTHER FINALIZATIONS 06 #	06 %	07 #	07 %	08 #	08 %	Subtotal Groups 6, 7, 8 #	Subtotal Groups 6, 7, 8 %	INELIGIBLES 09 #	09 %	10 #	10 %	Subtotal Groups 9, 10 #	Subtotal Groups 9, 10 %	Grand Totals #	Grand Totals %
01	191	47.51	48	11.94	39	9.70	278	69.15	31	7.71	7	1.74	38	9.45	2	.50	30	7.46	11	2.74	43	10.70	41	10.20	2	.50	43	10.70	402	100
02	151	50.17	44	14.62	15	4.98	210	69.77	24	7.97	1	.33	25	8.30	1	.33	31	10.30	12	3.99	44	14.62	21	6.98	1	.33	22	7.31	301	100
03	173	50.00	43	12.43	28	8.09	244	70.52	38	10.98	7	2.32	45	13.00	3	.87	28	8.09	11	3.18	42	12.14	13	3.76	2	.58	15	4.34	346	100
04	176	51.01	47	13.62	16	4.64	239	69.27	36	10.43	6	1.74	42	12.17	8	2.32	15	4.35	9	2.61	32	9.28	30	8.70	2	.58	32	9.28	345	100
05	88	46.81	22	11.70	6	3.19	116	61.70	20	10.64	4	2.13	24	12.77	2	1.06	14	7.45	8	4.26	24	12.77	22	11.70	2	1.06	24	12.76	188	100
06	68	67.33	7	6.93	5	4.95	80	79.21	4	3.96	2	1.98	6	5.94	0	0	4	3.96	2	1.98	6	5.94	7	6.93	2	1.98	9	8.91	101	100
07	87	63.04	18	13.04	6	4.35	111	80.43	13	9.42	1	.73	14	10.15	1	.725	1	.725	2	1.45	4	2.90	6	4.35	3	2.17	9	6.52	138	100
08	165	55.18	39	13.04	13	4.35	217	72.58	21	7.02	2	.67	23	7.69	4	1.34	23	7.69	10	3.34	37	12.37	19	6.36	3	1.00	22	7.36	299	100
10	129	53.09	31	12.76	15	6.17	175	72.02	20	8.23	4	1.65	24	9.88	6	2.47	18	7.41	5	2.05	29	11.93	12	4.94	3	1.23	15	6.17	243	100
11	99	53.80	24	13.04	17	9.24	140	76.08	16	8.70	3	1.63	19	10.33	2	1.09	11	5.98	1	.54	14	7.61	10	5.44	1	.54	11	5.98	184	100
12	100	47.17	34	16.04	10	4.72	144	67.93	27	12.73	5	2.36	32	15.09	1	.47	22	10.38	3	1.41	26	12.26	9	4.25	1	.47	10	4.72	212	100
13	120	47.06	51	20.00	12	4.70	183	71.76	26	10.20	7	2.74	33	12.94	0	0	22	8.63	5	1.96	27	10.59	12	4.71	0	0	12	4.71	255	100
14	89	44.50	25	12.50	15	7.50	129	64.50	26	13.00	3	1.50	29	14.50	1	.50	15	7.50	6	3.00	22	11.00	18	9.00	2	1.00	20	10.00	200	100
15	113	45.93	35	14.23	11	4.47	159	64.63	37	15.04	6	2.44	43	17.48	1	.41	17	6.91	3	1.22	21	8.54	20	8.13	3	1.22	23	9.35	246	100
16	55	50.92	10	9.26	1	.93	66	61.11	10	9.26	4	3.70	14	12.96	2	1.85	10	9.26	3	2.78	15	13.89	13	12.04	0	0	13	12.04	108	100
17	29	52.74	10	18.18	3	5.45	42	76.37	3	5.45	1	1.82	4	7.27	2	3.64	3	5.45	0	0	5	9.09	3	5.45	1	1.82	4	7.27	55	100
18	32	54.24	9	15.25	1	1.70	42	71.19	7	11.86	2	3.39	9	15.25	0	0	7	11.86	0	0	7	11.86	1	1.70	0	0	1	1.70	59	100
19	144	66.36	22	10.14	12	5.53	178	82.03	12	5.53	3	1.38	15	6.91	2	.92	9	4.15	1	.46	12	5.53	9	4.15	3	1.38	12	5.53	217	100
21	69	50.00	15	10.87	13	9.42	97	70.29	16	11.59	2	1.45	18	13.04	2	1.45	9	6.52	4	2.90	15	10.87	7	5.07	1	.73	8	5.80	138	100
22	78	48.75	26	16.25	5	3.12	109	68.12	23	14.37	0	0	23	14.37	1	.63	13	8.12	7	4.38	21	13.13	7	4.38	0	0	7	4.38	160	100
23	95	50.53	24	12.76	11	5.85	130	69.14	15	7.98	3	1.60	18	9.58	3	1.60	17	9.04	10	5.32	30	15.96	10	5.32	0	0	10	5.32	188	100
24	62	42.76	16	11.03	12	8.28	90	62.07	25	17.24	2	1.38	27	18.62	2	1.38	12	8.27	3	2.07	17	11.72	10	6.90	1	.69	11	7.59	145	100
25	44	55.00	9	11.25	0	0	53	66.25	13	16.25	3	3.75	16	20.00	0	0	5	6.25	1	1.25	6	7.50	5	6.25	0	0	5	6.25	80	100
26	29	50.88	8	14.03	2	3.51	39	68.42	4	7.02	0	0	4	7.02	0	0	4	7.02	0	0	4	7.02	10	17.54	0	0	10	17.54	57	100
27	30	62.50	5	10.42	3	6.25	38	79.17	3	6.25	2	4.17	5	10.42	0	0	0	0	1	2.08	1	2.08	4	8.33	0	0	4	8.33	48	100
28	69	54.33	16	12.60	7	5.51	92	72.44	10	7.87	2	1.58	12	9.45	2	1.58	4	3.15	3	2.36	9	7.09	14	11.02	0	0	14	11.02	127	100
30	76	64.41	10	8.48	2	1.69	88	74.58	12	10.17	1	.85	13	11.01	1	.85	7	5.93	1	.85	9	7.63	8	6.78	0	0	8	6.78	118	100
31	169	53.99	34	10.86	20	6.39	223	71.24	43	13.74	7	2.24	50	15.98	1	.32	18	5.75	6	1.92	25	7.99	12	3.83	3	.96	15	4.79	313	100
Total	2730		682		300		3712		535		90		625		50		369		128		547		353		36		389		5273	

APPENDIX

APPENDIX

Card 16 Layout

Column	Content
1	Blank
2 - 5	New ID #
6 - 7	Total Number of Calls (2 digit)
8 - 9	Disposition of Final Call (2 digit)
10 - 11 - 12	Date of Final Call (3 digit) Month = 1 digit Day = 2 digit
13 - 14 - 15	Interviewer ID (3 digit)
16 - 17	Site
18	Subsidized (0); Unsubsidized (1)
19 - 78	Blank
79 - 80	Card # (16)

OHIO STATE SURVEY OF EMPLOYERS - 1982

Summary of Procedures

I. Initial Contacting of Respondents

A. Letter, Worksheet and endorsement by NFIB sent to each. Mailed in waves of about 800.

B. Successive mailings repeated at about three week intervals.

II. Interviewing

A. Executive interviewers trained for 3 days by Nancy Nygreen.

1. Pre-test- The same procedures were used for the pretest interviews as required for the survey, including advance letters, tracking (when necessary), calling to confirm receipt of the letter and to set an appointment for an interview, scheduling call-backs (when necessary), and conducting the interview. Four telephone interviewers completed three or four interviews each. At the completion of these interviews, the Gallup Project Director met with the pretest interviewers and the Director of telephone interviewing for a debriefing.

2. Read Q.drafts for correcting.

3. Practiced interview with one another to become familiar with instrument.

4. Prepared materials in notebook.

a. Contact sheet prepared for every letter sent.

b. Disposition code sheet.

c. Card A - Target site listing.

B. Two weeks following initial mailing contacting and interviewing began.

1. Each interviewer responsible for own assignments (Supervisor coordinated call-backs and appointments in event of illness or absence.)

2. Final dispositions other than completed interview remained in notebook until determination could be made.

3. Decision was made not to stop at 4 or 8 calls if interviewer felt progress still could be made by continuing. (Increase costs incurred by this decision.)

Continued . . .

4. Any respondent not receiving letter (or not recalling same) was sent another mailing and a follow-up call made about 10 days later. (In some instances of repeated failure to have letter delivered properly, a "Return receipt requested" certified mailing was used with considerable success (and cost)). It is estimated that almost 2,000 additional mailings were required.

5. Several weeks following a refusal response, nearly all respondents were recalled by another interviewer to:

   1. attempt an interview or
   2. complete a short form questionnaire. This proved successful in about one-third of the attempts but was stopped by budget constraints.

   Interviewing resulted in:

3,842	
3,411	original interviews
300	short form conversions
131	supplemental interviews

6. Total interviewing = 13,300 hours for a net production rate of 1 interview per 3.6 hours of interviewing time. (Supervision, monitor and edit time included in production rate calculations).

Interviewer's Name: _____ Booth # _____

(or: Home Ext. #___)

Date: _____ Shift: _____ Job # _____

(Circle appropriate rating: 1 = Superior 2 = Good 3 = Adequate 4 = Poor
5 = Completely unsatisfactory)

1. INTRODUCTION — overall rating: 1 2 3 4 5

Identification given: full name ___ 1st only ___ None ___

Said "Gallup Organization"; yes ___ no ___ said "Poll" ___

Read introduction correctly 1 2 3 4 5
(Comments _____
_____)

2. BALLOT — overall rating: 1 2 3 4 5

reads questions correctly 1 2 3 4 5
skips correctly 1 2 3 4 5
probes degrees (i.e , "a great deal", "somewhat") 1 2 3 4 5
open-end probes 1 2 3 4 5
demographics 1 2 3 4 5

Verifies Phone Number: yes ___ no ___

3. LEADING RESPONDENT (does not lead) — overall rating: 1 2 3 4 5

leads by rephrasing question 1 2 3 4 5
leads on open-ends 1 2 3 4 5
leads on degree probes 1 2 3 4 5
leads by assuming information (e.g., race, income level) 1 2 3 4 5

4. COURTEOUS TO RESPONDENT 1 2 3 4 5

5. VOICE — overall rating: 1 2 3 4 5

diction 1 2 3 4 5
excessive use of "o.k.", "uh-huh", etc. 1 2 3 4 5

6. WAS A CALL NEEDED TO "206" ON THIS INTERVIEWER? Yes ___ No ___
(if "yes", record time _____ and supervisor spoken to _____)

7. ADDITIONAL COMMENTS: No ___ Yes ___ (see other side)

8. FOR ALL NEW INTERVIEWERS: Do you feel this person is ___ can be ___ cannot be ___
a good interviewer? (Comments: _____
_____
_____)

Monitor: _____

C. Monitoring - Quality Control -

1. By silent monitor, every interviewer was monitored during the first three days of their interviewing on this thereafter assignment, and regularly at random. Total monitored equaled 10% of all completed interviews. For 5% of monitored interviews a written comparison questionnaire was filed and reviewed for accuracy and quality. For all monitored interviews a graded evaluation sheet is completed and a complete file of each interviwer's monitor report is kept.

D. Editing

1. First done by interviewer
2. Follow up editing was responsibility of supervisor. Any missing information was obtained by a recontact with respondent. (This was rarely necessary, however).

E. Summary Information

1. Contact sheet of every completed interview - xeroxed for inclusion in consecutive number notebook.
2. All contact sheets placed in order and key punched as to final disposition.

F. Tracking Procedures Follow...

The Gallup Organization, Inc.

MEMORANDUM

TO: Nancy Nygreen

FROM: Ann Osborne

SUBJECT. Tracking Procedures for Ohio State Survey

DATE. 6/16/82

JOB NO.: G08213

COPIES:

Following are the tracking procedures used to determine the status of those companies interviewers were unable to contact using the telephone numbers from the 1980 survey:

1. The telephone number on the contact sheet was dialed to confirm disposition.

2. In all instances the status of incorporated companies was provided by the Secretary of State, Corporations Division. If the company was listed in good standing, the name and address of its agent was obtained who was inturn able to provide the company's correct address and telephone number.

3. An attempt to determine the status of non-incorporated companies was first made through directory assistance.

4. If directory assistance had no listing for the company, the local Chamber of Commerce was contacted. In most instances, the Chamber of Commerce could provide the company's correct address and phone number; however, occasionally the Chamber of Commerce only had a record of those companies registered with them and could provide no definite information as to the company's status.

5. When the needed information could not be obtained from the Chamber of Commerce, the local municipal office was contacted to check whether the company had renewed its business license.

6. If the municipal office could not provide company status, the local library was called and asked to check their library directory of local companies.

7. As a last resort, the Better Business Bureau was contacted to check whether they had received any complaints about the company as a result of their closing or moving.

All new telephone numbers of companies still in operation were dialed and verified as correct before being sent to the Interviewing Department.

Some of the following are the cont.cts most productive in tracking:

Florida , Pensacola - Chamber of Commerce (904)353-0300
Better Business Bureau (904)438-4087

IA - Secretary of State - Corporate Division (515)281-5864

Ohio,Toledo- Chamber of Commerce (419)243-8191

Alabama, Birmingham - Secretary of State (205)832-6855

MO, Higginsville - Chamber of Commerce (816)584-3030
Carrolton - Chamber of Commerce (816)542-3400

Colorado, Greeley- Chamber of Commerce (303)352-3566

Texas, San Antonio - Chamber of Commerce (512)229-2100
Corpus Christi - Chamber of Commerce (512)882-6161
Better Business Bureau (512)225-5833

WA,Aberdeen - Chamber of Commerce (206)532-1924
Centralia - Chamber of Commerce (206)736-3161

VA- Chamber of Commerce (703)679-0961
(703)889-1798

OHIO STATE - TRACKING

LA - Chamber of Commerce - Baton Rouge (504)387-1400
Chamber of Commerce - New Orleans (504)527-6900
Better Business Bureau (504)926-3010

Kentucky - Pikeville - Chamber of Commerce (606)432-5504

III Coding

A. Interviews checked in in batches of 5 by consecutive interview number.

B. Coding required about 25 minutes per interview with 10 minutes additional for occupational coding. (Even after interviewers added questions for description of company).

C. Military code also posed a problem for the coding department (difficult to get exact information from respondent).

D. Open-end questions - Most were pre-coded on the questionnaire so that interviewers' verbatim was merely coded by coders. All digit responses were checked for accuracy and lead 0's recorded if omitted.

E. Errors in editing were sent back to interviewers to recontact respondent. (This occured in very few instances, however).

F. A codebook was developed to specify card and column location of each variable. This was done for each of the three forms of the questionnaire.

G. Look-ups - Any inconsistencies in final data were looked up in original documents as these were put in numerical order at completion of key-punching.

DATA PROCESSING

1. Codebook by Cohen/Oberheim
2. Only to tape
3. Clean data
4. Analysis of response rates
5. All callback information keypunched
6. Interview precoded and precolumned
7. Editing
   - Interviewer
   - Telephone supervisor
   - Coding staff

CODING

- Assume 25 minutes per interview for coding

1. 10% checked by 2nd coder
2. Detailed occupation code
3. Open ends - Coding with Cohen/Nygreen
4. Lists kept of verbatim, misc., 2% of sample gives same response results in new code with recoded prior interviews
5. Open ends based on minimum of 200 responses
6. Coding by teams, questions assigned to groups of coders

KEYENTRY

(a) 10% verification of demo's

(b) 10% of rest of interview

CLEANING

(a) Out-of-range

(b) Internal consistencies

PART III

SURVEY MATERIALS

OSU

The Ohio State University

THE NATIONAL CENTER
FOR RESEARCH IN VOCATIONAL EDUCATION

1960 Kenny Road
Columbus, Ohio 43210

Phone: 614-486-3655
Cable: CTVOCEDOSU/Columbus, Ohio

January 12, 1982

Wilson S. Johnson, President
National Federation of Independent Business
150 W. 20th Avenue
San Mateo, CA 94403

Dear Mr. Johnson:

I would like to thank you and your organization for helping us with the 1980 survey of employers. I am enclosing a copy of two of the many reports that resulted from that survey: a short report sent to our 5,900 respondents and a longer report sent to the Department of Labor on the successes and failures of the government's efforts to subsidize private for profit employers who hire and train the disadvantaged.

I would like to ask again for your help. I have recently become the research director at the National Center for Research in Vocational Education. We have obtained permission from the National Institute of Education to allocate a major portion of the Center's research funding to a second wave survey of the employers that were first surveyed in 1980.

The survey has two major objectives: (1) measurement of the amount and character of the training private buysiness provides to its new employees, and (2) a detailed examination of why most businessmen are not using TJTC and CETA-OJT subsidies and how those that do use these programs benefit from their use. I would greatly appreciate permission to reuse the letter you so kindly wrote introducing our study to its 1980 respondents. I am enclosing a copy of your 1980 letter and a draft of our interview schedule. If you would like more information on the study please contact either William Dunkelberg (317-494-4380) or myself (614-486-3655).

Sincerely,

John Bishop

John Bishop
Associate Director
Research Division

JB:vm

Enclosures

cc: William Dennis
Mitchell Cohen, The Gallup Organization

NFIB National Federation of Independent Business

OFFICE OF THE PRESIDENT

Dear Businessman/Businesswoman:

As you know, the federal government runs many programs that have an impact on our labor markets. We need to have good information about the impact of such programs so that existing and proposed programs can be more sensibly designed. In the near future you will have the opportunity to participate in the evaluation of some of these programs.

In a few days an employee from The Gallup Organization, Inc., a national survey organization, will contact your firm and ask you to provide some information about your labor force and your experience in trying to hire qualified employees. The results of the study will be analyzed by a staff of researchers from the National Center for Vocational Education at Ohio State University. Your participation will be completely anonymous, although the results of the overall survey will be made public.

Your firm has been selected at random from a list of businesses in your area, thus your responses scientifically represent the experiences of these firms. I am writing this letter to ask you to take the time to help provide the necessary data for this important evaluation study. Your participation is crucial if the experiences of companies like yours are to have an impact on government policy.

Sincerely,

W. J. Johnson

Wilson S. Johnson
NFIB President

WSJ:lf

Home Office: 150 West 20th Avenue, San Mateo, California 94403. Telephone (415) 341-7441 / Legislative Office: Washington, D.

The Gallup Organization, Inc.

GALLUP SOCIAL SCIENCE RESEARCH GROUP

53 Bank Street
P.O. Box 310
Princeton, N.J. 08540
(609) 924-9600

March 22, 1982

The National Center for Research in Vocational Education at Ohio State University and The Gallup Organization, Inc. are conducting the 1982 phase of a national survey of employers. The study measures the impact of various government programs on the quality of the work force and the business environment in your community. This study has received the endorsement of the National Federation of Independent Business and is being funded by the National Institute of Education.

Your company participated in this study in 1980, and you should have received a report on the preliminary study findings. Your participation in this current study is essential if the results are to accurately reflect the impact of government programs on companies like yours. In appreciation of your participation you will receive a summary of the study by next year.

An executive interviewer from The Gallup Organization, Inc. will contact you within two weeks to conduct an interview. The enclosed worksheet will help you prepare for the interview.

All information you provide will be kept strictly confidential; neither you nor your company will be identified by name in the study findings. Your responses will be combined with those of many other organizations from across the country and used for statistical purposes only.

If you have any questions regarding this study, or if you would like to call The Gallup Organization, Inc. to request an interview, please feel free to call (collect) one of the Gallup project directors for this study:

Dr. Mitchell Cohen 609-924-9600 Ext. 226
Dr. Nancy Nygreen 609-924-9600 Ext. 265

I would like to thank you in advance for your participation in this study.

Sincerely,

Mitchell E. Cohen, Ph.D.

MEC/da
Enc.

APPENDIX B

THE EMPLOYER DEMAND SURVEY INSTRUMENT

C.4
1-6l

SCREENER .TEW ID: 2-5

** 1982 National Survey of Employers - GO 8213

TIME SCREENER STARTED ____ ____

TIME SCREENER ENDED (S12) ____ ____

LENGTH OF SCREENER ____ ____ MINUTES 6-7

Attach label here
when screener is completed

Respondent Name: _____ 8-13-81

Company Name: _____

S1. CONFIRM COMPANY NAME AND COMPANY ADDRESS

Is this (NAME OF COMPANY)?

Yes -CONFIRM COMPANY ADDRESS. THEN GO TO S4

No -CONFIRM COMPANY BUSINESS. THEN ASK Q.S2

Is your address still (READ FROM LABEL) IF NEW ADDRESS, RECORD: _____

_____

S2. Did this company ever operate under the name of (NAME OF COMPANY)?

Yes - GO TO S4

No - ASK S3

S3. VERIFY PHONE NUMBER AND LENGTH AT THAT NUMBER.

Is this (READ PHONE NUMBER)?

Yes

No

How long has that been your telephone number? _____

THANK RESPONDENT AND TERMINATE. RECORD "12" ON CONTACT SHEET.

S4. May I please speak with (NAME FROM CONTACT SHEET)?

(IF (NAME) NO LONGER WITH COMPANY OR CHANGED POSITION ASK:

May I speak with the person who is in the position (NAME) was in 1980/the person who handles the hiring for your company)?

IF (NAME) OUT OF OFFICE FOR A FEW MINUTES OR ON PHONE ASK TO HOLD.

Yes - ASK S5

No (RECORD REASON. TRY TO DETERMINE IF INTERVIEW CAN BE CONDUCTED). _____

_____

_____

_____

TERMINATE. RECORD ON CONTACT SHEET.

S5. WHEN RESPONDENT OR SECRETARY IS ON PHONE:

Hello, my name is _____, and I am calling from The Gallup Organization in Princeton New Jersey. Gallup and the National Center for Research in Vocational Education (located at Ohio State University*) are conducting the 1982 national survey of employers. You should have received a letter describing the study. Did you receive the letter? (CIRCLE RESPONSE)

Yes (GO TO S7)..... 1

No (READ S6)..... 2

S6. The primary objective of the study is to measure the impact of various government programs on the quality of the work force and the business environment in your community.

Your company participated in this study in 1980, and your participation this year will assure the results of this study will accurately reflect the impact of government programs on the work force. All information you provide will be kept strictly confidential; neither you nor your company will be identified by name in the study findings. Within a year you will be sent a summary report of the findings of the study.

S7. Was (NAME OF COMPANY) in business in (TARGET AREA) with at least one paid employee at any time since January, 1980?

Yes.....ASK S8..... 1 *(14)*

No.....TERMINATE..... 2

DK.....ASK S8..... 8

NA.....ASK S8..... 9

S8. Since October, 1979 has (NAME OF COMPANY) added or closed any new establishments, divisions, or facilities in (TARGET AREA)? (PROBE FOR ADDED OR CLOSED.)

Yes, added.....ASK S9..... 1 *(15)*

Yes, closed....ASK S9..... 2

Both added and closed
ASK S9..... 3

No.....GO TO S10..... 4

DK.....GO TO S10..... 8

NA.....GO TO S10..... 9

* Read only for sites 1, 11, 12, 31

S9. How many have been (added/closed)?

NUMBER ADDED" ____ ____ 16-17

DK..... 98

NA..... 99

NUMBER CLOSED: ____ ____ 18-19

DK..... 98

NA..... 99

S10. Can I obtain information about hiring procedures for all of your company's establishments in (TARGET AREA) from you? 20

Yes.....GO TO S13..... 1

No.....ASK S11..... 2

DK..... 8

NA..... 9

S11. Please give me the name and address of each of your company's establishments in (TARGET AREA) and the name and phone number of the person most familiar with hiring practices information in each.

	NAME AND ADDRESS OF ESTABLISHMENTS	NAME AND PHONE NUMBER OF CONTACT PERSON
		NONP
1.	_____	_____
2.	_____	_____
3.	_____	_____

IF NO IN S10 AND NAMES GIVEN IN S11, GIVE INTERVIEW TO SUPERVISOR AFTER CONDUCTING INTERVIEW.

(GO TO S13 UNLESS R VOLUNTEERS NOW IS NOT A GOOD TIME READ:)

S12. I'd like to make an appointment to conduct the interview. What would be a convenient time? (RECORD TIME ON CONTACT SHEET).

START OF INTERVIEW

S13. Does your company have any divisions or subsidiaries located other than in (TARGET AREA)?

Yes.....ASK S14.....	1	21
No.....GO TO S15.....	2	
DK.....ASK S14.....	8	
NA.... .ASK S14.....	9	

S14. What would you estimate the total number of full-time and part-time employees is in all the divisions and subsidiaries of your company? Is it roughly: READ LIST: (IF DK, PROBE: Just your best guess.)

1 to 49.....	1	22
50 to 99.....	2	
100 to 499.....	3	
500 to 2000.....	4	
More than 2000.....	5	
NONE - VOLUNTEERED.....	6	
DK.....	8	
NA.....	9	

S15. In the following two questions, when I say "your company," I am referring to those divisions, plants, or subsidiaries in (TARGET AREA) that were reported by your company, in the previous interview, to employ _____ employees in December, 1979 and _____ employees in July, 1979.

S16. Does your company in (TARGET AREA) use independent contractors? 23

Yes.....	1	
No.....	2	
DK..	8	
NA.....	9	

S17. How many employees both full and part-time did your company employ in (TARGET AREA) during the following periods. Do not include independent contractors. You may want to refer to the worksheet we sent you. How many are employed... (READ LIST)...

A. Currently ____ ____, ____ ____ ____ *24-28*

RECORD NUMBER

Some, DK #..... 99996
None..... 99997
DK..... 99998
NA..... 99999

How many were employed:

B. The week of December 12, 1981? ____ ____, ____ ____ ____ *29-33*

RECORD NUMBER

Some, DK#..... 99996
None..... 99997
DK..... 99998
NA..... 99999

C. The week of July 1, 1981? ____ ____, ____ ____ ____ *34-38*

RECORD NUMBER

Some, DK#..... 99996
None..... 99997
DK..... 99998
NA..... 99999

D. The week of December 12, 1980? ____ ____, ____ ____ ____ *39-43*

RECORD NUMBER

Some, DK#..... 99996
None..... 99997
DK..... 99998
NA..... 99999

E. The week of July 1, 1980? ____ ____, ____ ____ ____ *44-48*

RECORD NUMBER

Some, DK#..... 99996
None..... 99997
DK..... 99998
NA..... 99999

S18. Approximately what percentage of your workforce is under 25 years of age?

___ ___ ___ %

Some, DK#..... 996
None..... 997
DK..... 998
NA..... 999

49-51

S19. Two years ago approximately what percentage of your workforce was under 25 years of age?

___ ___ ___ %

Some, DK#..... 996
None..... 997
DK..... 998
NA..... 999

52-54

S20. Has there been any change since 1979 in the percentage of your non-supervisory workers that are covered by collective bargaining agreements?

Yes.....(ASK S21)..... 1
No.....(GO TO S22)... 2
DK....(ASK S21)..... 8
NA....(ASK S21)..... 9

55

S21. What is the current percentage of your non-supervisory workers that are covered by collective bargaining?

___ ___ ___ %

RECORD NUMBER

DK..... 998
NA..... 999

56-58

S22. By what percent did the average hourly wage rate of non-supervisory workers increase in the 2-year period between December 1979 and December 1981?

___ ___ ___ %

% INCREASE

Decrease-Volunteered 996
No Change..... 997
DK..... 998
NA..... 999

59-61

S23. After adjusting for price changes in your product, were your unit sales in 1981 higher, lower or about the same as in 1979?

Higher....(ASK S24)... 1
Lower.....(ASK S24)... 2
Same.....(GO TO 101). 3
DK.....(GO TO 101). 8
NA.....(GO TO 101). 9

62

S24. Again adjusting for price increases, approximately what was the percentage change?

___ ___ ___ %

RECORD %

Some, DK#.....
DK.....
NA.....

63-65

FINAL

GO 8213

C.S 1-bl NEW ID: 8-8
OLD ID: 8 13 14-38bl

Date: _____

Time started _____
Time ended _____
Length _____ 39-41

PART A: Past Ten Day and One Year Experience

* This first series of questions concerns information on general hiring practices. You may want to refer to the worksheet sent you in the last two weeks.

101. Generally speaking how difficult or easy would you say it is to find reliable unskilled workers at "reasonable" wages in your location? (READ LIST)...

Very difficult..... 1
Somewhat difficult,..... 2
Not very difficult, or.... 3 42
Easy..... 4
DK..... 8
NA..... 9

102. How much do you agree with the following statement: As much as possible I try to avoid having to deal with government bureaucrats. (READ LIST)...

Strongly agree..... 1
Somewhat agree.....2
Strongly disagree, or...3 43
Somewhat disagree with that statement.. 4
DK..... 8
NA..... 9

103. The next series of questions refers to the last ten workdays. During the last 10 working days, has your organization (READ LIST)...

		Yes	No	DK	NA	
A.	Asked for any referrals from Job Service?	1	2	8	9	44
B.	Asked for referrals from a union or an employment agency?	1	2	8	9	45
C.	Advertised any jobs in the paper?	1	2	8	9	46
D.	Displayed a help wanted sign?	1	2	8	9	47
E.	Announced to current employees that vacancies were expected?	1	2	8	9	48
F.	Made any other effort to attract job applicants (IF YES, SPECIFY _____ _____	1	2	8	9	49

104. During the past ten days, how many telephone calls did you and your personnel office receive from people seeking work? Do not include calls from employment agencies.

(ASK 105) ___ ___ ___ 50-52
RECORD NUMBER
Some, but DK#(ASK 105)996
None (GO TO 106)..... 997
DK (ASK 105)..... 998
NA (ASK 105)..... 999

105. How were these callers generally treated? Were they encouraged to come in to fill out a job application, encouraged to fill out a job application only if they had skills related to a job opening, or generally discouraged not to come in to fill out an application?

Generally encouraged.. 1 53
Encouraged if skills..... 2
Discouraged..... 3
NEITHER..... 4
DK..... 8
NA..... 9

106. During the past ten days, about how many people came to your company looking for work? (IF DK PROBE: Just your best guess.)

(ASK 107) ___, ___ ___ ___ 54-57
RECORD NUMBER
Some, DK#(ASK 107)9996
None (GO TO 108)... 9997
DK (GO TO 108).. 9998
NA (GO TO 108).. 9999

107. How many people filled out an application? (IF DK PROBE: Just your best guess.)

___, ___ ___ ___ 58-61
RECORD NUMBER
Some, DK#..... 9996
None..... 9997
DK..... 9998
NA..... 9999

108. How many people were interviewed? (IF DK PROBE: Just your best guess.)

(ASK 109)___, ___ ___ ___ 62-65
RECORD NUMBER
Some, DK#(ASK 109)9996
None (GO TO 110)... 9997
DK (ASK 109)..... 9998
NA (ASK 109)..... 9999

109. Of those interviewed, how many did you call in based on information you obtained from a previously filed written application? (IF DK PROBE: Just your best guess.)

66-68

___ ___ ___
RECORD NUMBER
Some, DK#..... 996
None..... 997
DK..... 998
NA..... 999

110. During the last 10 working days, how many job offers did you make?

69-71

___ ___ ___
RECORD NUMBER
Some, DK#..... 996
None..... 997
DK..... 998
NA..... 999

111. Ten working days ago, how many vacancies did you have that you wanted to fill immediately with a new employee? (IF DK PROBE: Just your best guess.)

72-75

___, ___ ___ ___
RECORD NUMBER
Some, DK#..... 9996
None..... 9997
DK..... 9998
NA..... 9999

"VACANCIES" EXCLUDE:

- JOBS FILLED BY RECALL, TRANSFER, PROMOTION, DEMOTION OR RETURN FROM LEAVE
- JOBS UNOCCUPIED BECAUSE OF LABOR MANAGEMENT DISPUTES

76-78-3[illegible]

- JOB OPENINGS FOR WHICH "NEW" WORKERS WERE ALREADY HIRED AND SCHEDULED TO WORK LATER

79-80-06

- JOB OPENINGS WITH FUTURE STARTING DATES

C 6
1=81
2-5

NEW ID:

112. Today, how many vacancies for new employees do you have that you want to fill immediately? (IF DK PROBE: Just your best guess.)

6-8

___ ___ ___
RECORD NUMBER
Some, DK#..... 996
None..... 997
DK..... 998
NA..... 999

113. Then... how many job openings with future starting dates for new employees do you have? (IF DK PROBE: Just your best guess. Q.112 REFERS TO PRESENT VACANCIES. Q.113 REFERS TO FUTURE EXPECTED VACANCIES).

___ ___ ___ 9-11
RECORD NUMBER
Some, DK#.....996
None.....997
DK.....998
NA.....999

113A. The next series of questions refer to all of 1981.

114. Were any permanent or temporary employees fired during 1981? By fired we mean a termination initiated by the employer for reasons such as incompetence, absenteeism, or insubordination.

12
Yes..... (ASK 115).....1
No.....(GO TO 116)...2
DK.....(GO TO 116)...8
NA.....(GO TO 116)...9

115. Approximately how many employees were fired? (IF DK PROBE: Just your best guess.)

___, ___ ___ ___ 13-16
RECORD NUMBER
Some, DK#..... 9996
DK..... 9998
NA..... 9999

116. Did any permanent or temporary employees quit during 1981?

17
Yes..... (ASK 117).....1
No.....(GO TO 118)...2
DK..(GO TO 118)..... 8
NA..(GO TO 118)..... 9

BY QUIT WE MEAN SEPARATIONS INITIATED BY THE EMPLOYEE FOR ANY REASON EXCEPT:

- -RETIREMENT
- -DEATH
- -TRANSFER TO ANOTHER ESTABLISHMENT IN YOUR COMPANY
- - SERVICE IN THE ARMED FORCES

117. Approximately how many employees quit during 1981? (IF DK PROBE: Just your best guess.)

___, ___ ___ ___ 18-21
RECORD NUMBER
Some, DK#..... 9996
DK..... 9998
NA..... 9999

118. How many of your current employees were newly hired by your company during 1981? Current employees are permanent, temporary or seasonal employees who have never before been employed by your company, and who are still working for your company. (IF DK PROBE: Just your best guess.)

___, ___ ___ ___ 22-25
RECORD NUMBER
Some, DK#..... 9996
None..... 9997
DK..... 9998
NA..... 9999

119. How many employees were newly hired in 1981, but are no longer with your company? (IF DK PROBE: Just your best guess. SUM OF Q.118 AND Q.119 SHOULD EQUAL TOTAL NEW HIRES IN 1981).

___, ___ ___ ___ 26-29
RECORD NUMBER
Some, DK#..... 9996
None..... 9997
DK..... 9998
NA..... 9999

PART B: LAST HIRED WORKER SECTION

30-36-01

I'd like to ask you to think of the last new employee your company hired prior to August 1981 regardless of whether that person is still employed by your company. I'm going to ask you some questions about that person and the position he or she was hired to fill.

201. To make it easier to refer to him or her during the interview, please give me his or her first name and sex.

_____

Male..... 1
Female..... 2
DK..... 8
NA..... 9

37

202A. What was the title of the job (NAME) was hired for? (PROBE FOR DETAIL)
(RECORD RESPONSE BELOW UNDER Q 202B - TITLE)

202B. What are the most important duties of the job? PROBE FOR SPECIFIC TYPE OF PRODUCT WORKED ON OR WITH.

TITLE: _____ 37-45

DUTIES: _____ _____

_____

_____

202C. What kind of company or business is (NAME OF COMPANY)?

_____

DK..... 999999998
NA..... 999999999

203. Before a new employee starts work in this position, does your company require a complete pre-employment physical paid for by the company?

Yes..... 1
No..... 2
DK..... 8
NA..... 9

46

204. When interviewing applicants for this position, how important is the previous school-provided vocational training in your hiring decision? (READ LIST)...

It is required..... 1
It's important, but not required..... 2
Not too important..... 3
Not important at all..... 4
DK..... 8
NA..... 9

47

205. In the first three months of employment, approximately how many total hours does a typical new employee in NAME'S position spend away from normal work activities filling out forms and being told about the company history, benefits and rules? 48-49

___ ___
RECORD HOURS
NONE..... 97
DK..... 98
NA..... 99

206. During the first three months, how many total hours does the average new employee spend in training activities in which he or she is watching other people do the job rather than doing it himself? 50-52

___ ___ ___
RECORD HOURS
NONE..... 997
DK..... 998
NA..... 999

207. How many weeks does it take a new employee hired for this position to become fully trained and qualified if he or she has no previous experience in this job, but has had the necessary school-provided training? 53-55

___ ___ ___
RECORD WEEKS
NONE..... 997
DK..... 998
NA..... 999

208. How many of the skills learned by new employees in this job are useful outside of this company? (READ LIST)... 56

Almost all..... 1
Most..... 2
Some..... 3
Or almost none..... 4
DK..... 8
NA..... 9

209. Focusing on the skills that are useful outside your company, how many other companies in the local labor market have jobs that require these skills? Would you guess (READ LIST)... 57

less than 5..... 1
5 to 15..... 2
16 to 100..... 3
or over 100..... 4
DK..... 8
NA..... 9

210. Does this job have a probationary period during which the new employee can be let go without too much trouble if he or she is not performing up to standard?

Yes (ASK 211)..... 1
No (GO TO 212)..... 2
DK (GO TO 212). 8
NA (GO TO 212). 9

58

211. How many weeks does the probationary period last?

__ __
WEEKS
DK..... 98
NA..... 99

59-60

212. (IF YES IN Q.210 READ: After the probationary period is over). How much documentation or paperwork is required to fire an employee? (READ LIST)

A great deal..... 1
Some..... 2
A little..... 3
No paperwork..... 4
DK..... 8
NA..... 9

61

213. For people in this position what is the basis for promotion? (READ LIST)...

Solely Seniority..... 1
Mainly Seniority..... 2
Mainly Ability..... 3
Or some of both..... 4
NO PROMOTION OPPORTUNITY (VOLUNTEERED).. 5
DK..... 8
NA..... 9

62

214A. If your company were to permanently lay off one third of its employees in (NAME'S) position, what would be the basis for selecting which employees would be laid off? Would it be: (READ LIST)

Solely Seniority (GO TO 215A)... 1
Mainly Seniority (GO TO 215A)... 2
Mainly Productivity (GO TO 215A) 3
SOME OF BOTH (GO TO 215A)..... 4
DOWN GRADE (ASK 214B)..... 5
OTHER (SPECIFY)
(ASK 214B)_____ 6
ONLY ONE WORKER (GO TO 215A).... 7
DK (GO TO 215A)..... 8
NA (GO TO 215A)..... 9

63

214B. What would be the basis for deciding (who to demote/others response?)

Solely Seniority..... 1 70
Mainly Seniority..... 2
Mainly Productivity..... 3
SOME OF BOTH..... 4
SOME OTHER BASIS
SPECIFY _____ 5
DK..... 8
NA..... 9

215A. If your company were to temporarily lay off one third of its employees in (NAME'S) position for a period of only 3 months, what would be the basis for selecting which employees would be laid off? Would it be: (READ LIST)...

Solely Seniority (GO TO 216).. 1 71
Mainly Seniority (GO TO 216).. 2
Mainly Productivity (GO TO 216) 3
SOME OF BOTH.....(GO TO 216).. 4
DEMOTIONS.....ASK 215B).... 5
SOME OTHER BASIS
SPECIFY (ASK 215B) _____ 6
ONLY ONE WORKER (GO TO 216)... 7
DK.....(GO TO 216)... 8
NA.....(GO TO 216)... 9

215B. What would be the basis for deciding (who to demote/other response?)

Solely Seniority..... 1 72
Mainly Seniority..... 2
Mainly Productivity..... 3
SOME OF BOTH..... 4
SOME OTHER BASIS
SPECIFY _____ 5
DK..... 8
NA..... 9

216. After a three month layoff, approximately what percent of laid off employees do you think either could not be traceable or would refuse to return? (READ LIST)...

0-10%..... 1 73
11-30%..... 2
31-60%..... 3
61-100%..... 4
DK..... 8
NA..... 9

217. If it were purchased today, what would be the cost of the most expensive machine people in (NAME'S) position work on or with? (READ LIST)...

Under $2,000..... 1 74
$2-$10,000..... 2
$10,000-$50,000..... 3
$50-$200,000..... 4 75-78-bl
$200,000 UP..... 5 COL 79=80=06
DK..... 8 9
NA..... 9

C.2
1=b2
NEW ID: 2-5

218. In what month and year did (NAME) begin working for your company?

__ __ - 1 9 __ __ 6-11
MONTH YEAR
DK..... 989998
NA..... 999999

219. Approximately how many days was it between the time you started looking for someone to fill the opening and the time (NAME) started to work?

__ __ __ 12-14
DAYS
Always looking..... 996
NONE/Did not have to look.. 997
DK..... 998
NA..... 999

220A. Did you have any advance notice of the existence of this opening?

Yes...(ASK 220B).... 1 COL 15
No....(GO TO 221)... 2
DK..(GO TO 221)... 8
NA..(GO TO 221)... 9

220B. Approximately how many days before you needed a new employee for (NAME'S) position did you begin to look for one?

__ __ 16-17
RECORD DAYS
Some, DK#..... 96
NONE..... 97
DK..... 98
NA..... 99

221. How many openings did you have for this position during the period when you were hiring (NAME)?

__, __ __ __ 18-21
RECORD NUMBER
Some, DK#..... 9996
None..... 9997
DK..... 9998
NA..... 9999

222. How many people applied for this position?

__, __ __ __ 22-25
RECORD NUMBER
Some, DK#..... 9996
None..... 9997
DK..... 9998
NA..... 9999

223. How many applicants were reference-checked with a previous employer?

__, __ __ __ 26-29
RECORD NUMBER
First job..... 9995
Some, DK#..... 9996
None..... 9997
DK..... 9998
NA..... 9999

224. How many applicants were interviewed for this position?

___, ___ ___ ___ 30-33
RECORD NUMBER
Some, DK#..... 9996
None..... 9997
DK..... 9998
NA..... 9999

225A. To how many of these applicants did you offer a job? (ANSWER SHOULD NOT BE NONE)

___ ___ ___ 34-36
RECORD NUMBER
Some, DK#..... 9996
DK..... 9998
NA..... 9999

225E. How many of these applicants accepted a job? (ANSWER SHOULD NOT BE NONE)

___, ___ ___ ___ 37-40
RECORD NUMBER
Some, DK#..... 9996
DK..... 9998
NA..... 9999

225C. How many of those interviewed had applied prior to this job-opening and were called in for an interview when the vacancy arose?

___, ___ ___ ___ 41-44
RECORD NUMBER
Some, DK#..... 9996
None..... 9997
DK..... 9998
NA..... 9999

226. While hiring for this position, what was the total number of man hours spent by your company personnel recruiting, screening, and interviewing all applicants?

___ ___ ___ 45-47
RECORD HOURS
Some, DK#..... 996
None..... 997
DK..... 998
NA..... 999

48-51

227. What was (NAME'S) age at the time (he/she) was hired? 49-50

___ ___
AGE
DK..... 98
NA..... 99

228. What was the last year of grade school, high school, or college (NAME) completed? PROBE FOR ACTUAL NUMBER. IF ONLY THE FOLLOWING ANSWERS ARE GIVEN, RECORD THE CORRESPONDING NUMBER: 51-52

___ ___
RECORD NUMBER
DK..... 98
NA..... 99

(COMPLETE) GRAMMAR SCHOOL	-08	COMPLETED COLLEGE	-16
INCOMPLETE HIGH SCHOOL	-10	GRADUATE SCHOOL INCOMPLETE	-17
COMPLETE HIGH SCHOOL	-12	MASTERS/LAW/MBA	-18
INCOMPLETE COLLEGE	-14	PH.D/MD/DDS	-20

229. Was (NAME) in the military in last 5 years? 53

NOTE: THIS DOES NOT INCLUDE MILITARY RESERVES.

Yes.... (ASK 230)..... 1
No.... (GO TO 233).. 2
DK (GO TO 233)..... 8
NA (GO TO 233)..... 9

230. Which service was (NAME) in? 54

Army..... 1
Air force..... 2
Navy..... 3
Marines..... 4
Other(SPECIFY)_____ 5
DK..... 8
NA..... 9

231. How many years was (he/she) in the military? 55-56

___ ___
RECORD YEARS
Some, DK#..... 96
DK..... 98
NA..... 99

232. What was (his/her) job at the end of (his/her) military service?

_____ 57-60

JOB TITLE

DK..... 9998

NA..... 9999

233. Prior to being hired, did (NAME) receive any vocational training in a school setting? 61

Yes.... (ASK 234A)..... 1

No..... (GO TO 235)..... 2

DK. (GO TO 235)..... 8

NA. (GO TO 235)..... 9

234A. What was the name of the most recent institution where (NAME) received (his/her) vocational training prior to being hired? Please tell me the formal name of the institution and whether it was a high school, junior college, vocational-technical school, or a 4 year college.

(RECORD NAME) _____

PICK UP NAME: ALPHA
3.08
2-61
NEW ID: 2-5 DK=8 in
NAME: 6-78 Col. 5
79-80=08

High School..... 1	62
Junior College..... 2	
Vocational-technical school..... 3	
4 year college..... 4	
DK..... 8	
NA..... 9	

234B. Was this a public or private school?

Public..... 1	63
Private..... 2	
DK..... 8	
NA..... 9	

234C. Did the vocational training course in (NAME OF SCHOOL) last less than 1 year, 1 year, 2 years, or more then 2 years? (IF CURRENTLY A STUDENT, ASK: How long had (NAME) been in a training course prior to starting here?)

less than 1 year..... 1	64
1 year..... 2	
2 year..... 3	
2 year +..... 4	
DK..... 8	
NA..... 9	

234D. What year was the training at (NAME OF SCHOOL) completed?

19 ___ ___	65-66
RECORD YEAR	
STILL STUDENT..... 96	
DK..... 98	
NA..... 99	

234E. How related was the vocational training at (NAME OF SCHOOL) to the job for which (NAME) was hired? (READ LIST)...

Very (GO TO 244)..... 1	67
Somewhat, or (GO TO 244) 2	
Not at all (GO TO 244).. 3	
DK....(GO TO 244)..... 8	
NA....(GO TO 244)..... 9	

Q244 IS ON PAGE 18

68-78-01
79-80=07

C.9
1=b1
NEW ID: 2-5

235. The purpose of the following questions is to compare (NAME 1) with another employee you hired for the same or similiar position, but with some prior vocational training in a school setting.

Please tell me the first name and sex of the last person you hired within the past 2 years for (NAME'S) position who received any vocational training in a school setting.

Q.251A IS ON PAGE 20

_____
NAME 2

6

Male..... 1
Female..... 2
None hired in past 2 years with training (GO TO Q251A) 3
None else hired (GO TO Q251A)..... 4
DK..... (GO TO Q251A) 8
NA..... (GO TO Q251A) 9

236. In what month and year did (NAME 2) begin working for your company?

7-12

__ __ - 1 9 __ __
MONTH YEAR
DK..... 989998
NA..... 999999

237. What was (NAME 2'S) age at the time he/she was hired?

13-14

__ __
AGE
DK..... 98
NA..... 99

238. What was the last year of school, (NAME 2) completed? (PROBE FOR ACTUAL NUMBER. IF ONLY THE FOLLOW'NG ANSWERS ARE GIVEN, RECORD THE CORRESPONDING NUMBER:

15-16

__ __
RECORD NUMBER
DK..... 98
NA..... 99

(COMPLETE) GRAMMAR SCHOOL	-08
INCOMPLETE HIGH SCHOOL	-10
COMPLETE HIGH SCHOOL	-12
INCOMPLETE COLLEGE	-14
COMPLETED COLLEGE	-16
GRADUATE SCHOOL/INCOMPLETE	-17
MASTERS/LAW/MBA/	-18
PH.D/DDS/MD	-20

239. Was (NAME 2) in the military in the past 5 years?

Yes.... (ASK 240)..... 1
No..... (GO TO 243)..... 2
DK (GO TO 243)..8
NA (GO TO 243)..9

17

240. Which service was (NAME 2) in?

Army..... 1
Air force..... 2
Navy..... 3
Marines..... 4
Other(SPECIFY)_____ 5
DK..... 8
NA..... 9

18

241. How many years was (he/she) in the military?

___ __
RECORD YEARS
Some, DK#..... 96
DK..... 98
NA..... 99

19-20

242. What was (his/her) job at the end of (his/her) military service?

_____
JOB TITLE
DK..... 9998
NA..... 9999

21-24

243A. What was the name of the most recent institution where (NAME 2) received (his/her) vocational training prior to being hired? Please tell me the formal name of the institution and whether it was a high school, junior college, vocational-technical school, or a 4 year college.

(RECORD NAME) _____

PICK UP NAME: ALPHA
C.10
1-b1
NEW ID: 2-5 DK=8 in
NAME: 6-78 Col. 6
79-80 = 10

High School..... 1 25
Junior College..... 2
Vocational-technical school..... 3
4 year college..... 4
DK..... 8
NA..... 9

243B. Was this a public or private school?

Public..... 1 26
Private..... 2
DK..... 8
NA..... 9

243C. Did the vocational training course in (NAME OF SCHOOL) last less than 1 year, 1 year, 2 years, or more then 2 years? (IF CURRENTLY A STUDENT ASK: How long had (NAME) been in a training course prior to starting here?)

less than 1 year..... 1 27
1 year..... 2
2 year..... 3
2 year +..... 4
DK..... 8
NA..... 9

243D. What year was the training at (NAME OF SCHOOL) completed?

19 ___ ___ 28-29
RECORD YEAR
STILL A STUDENT... 96
DK..... 98
NA..... 99

243E. How related was the vocational training at (NAME OF SCHOOL) to the job for which (NAME 2) was hired? (READ LIST)...

Very (GO TO 251A)..... 1 30
Somewhat, or (GO TO 251A).. 2
Not at all (GO TO 251A).. 3
DK (GO TO 251A)..... 8
NA (GO TO 251A)..... 9

GO TO 251A PAGE 20 GO TO 251A PAGE 20 GO TO 251A PAGE 20

244. The purpose of the following questions is to compare (NAME 1) with another employe you hired for the same or similiar position, but with no prior vocational training in a school setting.

Please tell me the first name and sex of the last person you hired within the past 2 years for (NAME 1's) position who received no vocational training in a school setting.

NAME 2

Male..... 1 *31*
Female..... 2
None hired in past 2 years with no vocational training (GO TO 251A) 3
None else hired (GO TO 251A)..... 4
DK..... 8
NA..... 9

245. In what month and year did (NAME 2) begin working for your company?

__ __ - 1 9 __ __ *32-37*
MONTH YEAR
DK..... 989998
NA..... 999999

246. What was (NAME 2'S) age at the time he/she was hired?

___ ___ *38-39*
AGE
DK..... 98
NA..... 99

247. What was the last year of grade school, high school, or college (NAME 2) completed?

___ ___ *40-41*
RECORD NUMBER
DK..... 98
NA..... 99

(COMPLETE) GRAMMAR SCHOOL	-08
INCOMPLETE HIGH SCHOOL	-10
COMPLETE HIGH SCHOOL	-12
INCOMPLETE COLLEGE	-14
COMPLETED COLLEGE	-16
GRADUATE SCHOOL/ INCOMPLETE	-17
MASTERS/ LAW/MBA/	-18
PH.D/DDS/MD	-20

248. Was (NAME 2) in the military in the past five years?

Yes.... (ASK 249)..... 1
No..... (GO TO 251A).2
DK (GO TO 251A)..... 8
NA (GO TO 251A)..... 9

42

249. Which service was (NAME 2) in?

Army..... 1
Air force..... 2
Navy..... 3
Marines..... 4
Other(SPECIFY)_____ 5
DK..... 8
NA..... 9

43

250. How many years was (he/she) in the military?

___ ___
RECORD YEARS
Some, DK#..... 96
DK..... 98
NA..... 99

44-45

251. What was (his/her) job at the end of (his/her) military service?

_____
JOB TITLE
DK..... 9998
NA..... 9999

46-49

251A. FOR THE FOLLOWING QUESTIONS, ASK EACH QUESTION FOR NAME 1 AND THEN NAME 2. IF NO NAME 2 IDENTIFIED, ASK QUESTIONS FOR NAME 1 ONLY.

	NAME 1	NAME 2
		50/51
252. Was (NAME) a friend or relative of a current employee, a walk-in, a respondent to a newpaper ad, or a referral?	Friend (GO TO 254)..... 1 Relative (GO TO 254)..... 2 Walk-in (GO TO 254)..... 3 Newspaper Ad (GO TO 254)..... 4 Referral(253).. 5 DK(GO TO 254).8 NA(GO TO 254).9	Friend (GO TO 254)..... 1 Relative (GO TO 254)..... 2 Walk-in (GO TO 254)..... 3 Newspaper Ad (GO TO 254)..... 4 Referral(253).. 5 DK(GO TO 254).8 NA(GO TO 254).9
		52-53/54-55
253. What was the source of the referral? (DO NOT READ LIST)	Emp. Service....01 Private Emp. Agency..... 02 CETA..... 03 Win/Welfare..... 04 Community Based Org. (i.e., Urban League..... 05 Other Employer 06 School..... 07 Union..... 08 Friend.....09 Relative.....10 Other (SPECIFY) _____11 DK.....98 NA.....99	Emp. Service....01 Private Emp. Agency..... 02 CETA..... 03 Win/Welfare..... 04 Community Based Org. (i.e., Urban League.....05 Other Employer 06 School.....07 Union.....08 Friend.....09 Relative.....10 Other (SPECIFY) _____11 DK.....98 NA.....99

	NAME 1	NAME 2	
254. How many months of experience in jobs that had some application to the position did (NAME) have before (he/she) started working for your company?	___ ___ ___ RECORD MONTHS Some, DK#.....996 None.....997 DK.....998 NA.....999	___ ___ ___ RECORD MONTHS Some, DK#.....996 None.....997 DK.....998 NA.....999	56-58/59-61
255. Was the job supposed to be temporary, seasonal or permanent when you you hired (him/her)?	Temporary.....1 Seasonal.....2 Permanent.....3 DK.....8 NA.....9	Temporary.....1 Seasonal.....2 Permanent.....3 DK.....8 NA.....9	62/63
256. Is (NAME) still with your company?	Yes (GO TO 258A) 1 No (ASK 257)..... 2 DK (ASK 257).....8 NA (ASK 257).....9	Yes (GO TO 258A) 1 No (ASK 257)..... 2 DK (ASK 257).....8 DK (ASK 257).....9	64/65
257. How many weeks did (NAME) work for your company? (RECORD ON CHIT SHEET)	___ ___ RECORD WEEKS DK.....98 NA.....99	___ ___ RECORD WEEKS DK.....98 NA.....99	66-67/68-69

		NAME 1:	NAME 2:	
257A.	Was (NAME'S) separation a layoff, a discharge, an induced resignation, or a voluntary resignation? (PEOPLE ARE "INDUCED TO RESIGN" PRIMARILY BECAUSE THEY WOULD BE DISCHARGED OR BECAUSE SUPERVISORS HAD EXPRESSED DISSATISFACTION WITH THEIR PERFORMANCE.)	Layoff..... 1 Discharge..... 2 Induced Resignation..... 3 Voluntary Resignation..... 4 Other..... 5 DK..... 8 NA..... 9	Layoff..... 1 Discharge..... 2 Induced Resignation..... 3 Voluntary Resignation..... 4 Other..... 5 DK..... 8 NA..... 9	72/71

258A. The following questions ask about employee earnings. If possible, please give earnings in hourly terms.

258B.	Is (NAME 1's) job paid (READ LIST)	Hourly (GO TO 259)..... 1 By salary (GO TO 259)..... 2 100% commission (GO TO 259)..... 3 Piece rate (GO TO 259)..... 4 Straight time or salary plus tips, incentives and commissions (ASK 258C)..... 5 DK (GO TO 259)..... 8 NA. (GO TO 259)..... 9	72
258C.	What type of incentive is offered (READ LIST)...	Commission..... 1 Tips..... 2 Group incentives..... 3 Individual incentives..... 4 DK..... 8 NA..... 9	73 74-78=blank 79-80=09 c.11 1-blank NEW ID: 2-5 6-9
259.	What is the average hourly rate paid to workers in (NAME 1's) position who have had 2 years of experience in this job? Please include any commissions, bonuses or incentive pay in your estimate.	$ ___ ___ . ___ ___ DOLLARS CENTS DK..... 9998 NA..... 9999	

	NAME 1	NAME 2	
260. What was (NAME'S) starting hourly rate including commissions, and incentive pay?	(GO TO 263) $__ __ . __ __ DOLLARS CENTS DK(ASK 261)..9998 NA(GO TO 262)9999	(GO TO 263) $__ __ . __ __ DOLLARS CENTS DK(ASK 261)9998 NA(GO TO 263)9999	10-13/14-17
261. What was (NAME'S) usual monthly salary including commissions and incentive pay when (he/she) started work? (RECORD IN WHOLE DOLLARS, IF (NAME) WORKS LESS THAN 1 YEAR BASE SALARY ON NUMBER MONTHS WORKED.)	$ __ __ , __ __ __ DOLLARS DK..... 99998 NA..... 99999	$ __ __ , __ __ __ DOLLARS DK..... 99998 NA..... 99999	18-22/23-27
262. How many hours did (NAME) usually work a week?	__ __ HOURS DK..... 98 NA..... 99	__ __ HOURS DK..... 98 NA..... 99	28-29/30-31
263. What is NAME'S current hourly wage including commissions and incentive pay? (EVEN IF NAME HAS LEFT CO.)	(GO TO 265) __ __ . __ __ DOLLARS CENTS DK(ASK 264)..9998 NA(GO TO 265)9999	(GO TO 265) $__ __ . __ __ DOLLARS CENTS DK(ASK 264)9998 NA(GO TO 265)9999	32-35/36-39

OR, IF (NAME) HAS LEFT COMPANY READ:
What was NAME'S hourly wage including tips, commissions and incentive pay when he/she left your company. (RECORD RESPONSE, THEN SKIP TO 265.)

264. What is (NAME's) current monthly salary, including tips, commissions and incentive pay? (IF NAME HAS LEFT COMPANY, ASK: What was NAME'S monthly salary when he left the company?)	__ __,__ __ __ DOLLARS DK.....99998 NA.....99999	__ __,__ __ __ DOLLARS DK.....99998 NA.....99999	40-44/45-49

		NAME 1	NAME 2	
265.	How many hours does/did (NAME) usually work a week?	__ __ HOURS DK..... 98 NA..... 99	__ __ HOURS DK..... 98 NA..... 99	50-51/52-53
266.	Has (NAME) received a promotion, or an upgrading of (his/her) job responsibilities since being hired?	Yes (ASK 267)..... 1 No (GO TO 268)..... 2 DK (GO TO 268)..... 8 NA (GO TO 268)..... 9	Yes (ASK 267)..... 1 No (GO TO 268)..... 2 DK (GO TO 268)..... 8 NA (GO TO 268)..... 9	54/55
267.	Approximately how many months after being hired did (he/she) receive the promotion?	__ __ __ RECORD MONTHS DK..... 998 NA..... 999	__ __ __ RECORD MONTHS DK..... 998 NA..... 999	56-58/59-61
268.	Have you received or do you expect to receive a tax credit or government reimbursement of part of your training costs for hiring (NAME)?	Yes(GO TO 269)..... 1 No (GO TO 271A)..... 2 DK (GO TO 271A).. 8 NA (GO TO 271A).. 9	Yes(GO TO 269)..... 1 No (GO TO 271A).... 2 DK (GO TO 271A).. 8 NA (GO TO 271A).. 9	62/63
269.	Did you know you would be eligible for this at the time you hired (NAME)?	Yes(GO TO 271)..... 1 No (ASK 270)..... 2 DK (GO TO 271).. 8 NA (GO TO 271).. 9	Yes(GO TO 271).. 1 No (ASK 270)..... 2 DK (GO TO 271).. 8 NA (GO TO 271).. 9	64/65

66-72/72-77

270. When did you learn (NAME) was eligible?

___ ___ - 19___ ___	___ ___ - 19 ___ ___
MO YR	MO YR
DK.....999998	DK..... 999998
NA.....999999	NA..... 999999

78 = bl
79 = 1
80 = 1
C. 12
1-bl
NEW ID: 2-5

271. From which program is the money coming?

TJTC.....1	TJTC..... 1
WIN Tax Credit..2	WIN Tax Credit.. 2
CETA-OJT.....3	CETA-OJT..... 3
WIN-OJT.....4	WIN-OJT..... 4
Other Government Subsidy	Other Government Subsidy
SPECIFY_____5	SPECIFY_____5
DK....8	DK..... 8
NA....9	NA..... 9

6/7

271A. The questions in this section ask about worker training and supervision for NAME'S position.

Once we get started if you find it is necessary for me to talk to a supervisor for that position please transfer me to him/her at the end of this interview.

271B. IF YOU MUST SPEAK TO A SUPERVISOR ASK SECTIONS "C" AND "D". ASK FOR SUPERVISOR AT END OF INTERVIEW. ASK 271C - 284.

271C. Is there formal training, such as self-paced learning programs or training done by specially trained personnel, for people hired in NAME's position, or is all the training done as informal on the job training?

Formal training . . .ASK 272 . . 1
All informal . . . GO TO 273 . . .2 8
DK . . . . . .ASK 272. 8
NA . . . . . .ASK 272. 9

272. For the following questions we ask comparisons among NAMES 1 and 2 and your typical new employee in the same position.

During the first 3 months of work what was the total number of hours spent on formal training such as self-paced learning programs or training done by specially trained personnel, of . . .

A. Your typical worker in (NAME'S) position. 9-11

___ ___ ___
RECORD HOUR
Some, DK#.....996
None.....997
DK..... 998
NA..... 999

B. NAME 1 (RECORD VERBATIM IF NOT IN HOURS; DO CONVERSION IF CLEAR) 12-14

___ ___ ___
RECORD HOUR
Some, DK#.....996
None.....997
DK..... 998
NA..... 999

C. NAME 2 (RECORD VERBATIM IF NOT IN HOURS; DO CONVERSION IF CLEAR) 15-17

___ ___ ___
RECORD HOUR
Some, DK#.....996
None.....997
DK..... 998
NA..... 999

INTERVIEWER NOTE: IF RESPONDENT ANSWERS QUESTION 272A, B or C IN TERMS OF DAYS, WEEKS OR MONTHS READ: You mean NAME received training 8 hours a day for ____days/weeks/months?

273. IF NOT ALREADY READ, READ:

In the following questions I am going to ask for comparisons among NAMES 1 and 2 and <u>your</u> typical new employee in the same position.

Now switching to informal training during their first 3 months of work, what was the <u>total</u> number of hours management and line supervisors spent away from other activities giving <u>informal</u> individualized training or extra supervision to:

A. Your typical worker in (NAME'S) position. — — — 18-20

RECORD HOUR
Some, DK#.....996
None.....997
DK.....998
NA.....999

B. NAME 1 (IF NOT THERE FOR 3 MONTHS ASK: For the period he/she was there how many hours of informal training did he/she receive?) — — — 21-23

RECORD HOUR
Some, DK#.....996
None.....997
DK.....998
NA.....999

C. NAME 2 (IF NOT THERE FOR 3 MONTHS ASK: For the period he/she was there, how many hours of informal training did he/she receive?) — — — 24-26

RECORD HOUR
Some, DK#.....996
None.....997
DK.....998
NA.....999

INTERVIEWER NOTE: IF RESPONDENT ANSWERS QUESTION 273A, B, or C IN TERMS OF DAYS, WEEKS OR MONTHS READ: You mean NAME received training 8 hours a day for ____ days/weeks/months?

IF 273A, B <u>AND</u> C ARE DK ASK 274. OTHERWISE GO TO <u>277</u>.

274. How many different management and supervisory level persons give your typical employee in (NAME'S) position informal training?

27-28

__ __
RECORD NUMBER
Some, DK#..... 96
DK..... 98
NA..... 99

275. About how many total days of informal training does the typical management level person spend informally training your typical new employee in (NAME'S) position?

29-30

__ __
RECORD DAYS
Some, DK#..... 96
DK..... 98
NA..... 99

276. How many hours each day does the typical management person spend away from performing other duties in order to informally train a typical new employee?

31-32

__ __
RECORD HOURS
Some, DK#..... 96
None..... 97
DK..... 98
NA..... 99

277. During the first 3 months of work what was the total number of hours co-workers who are not supervisors spent away from their normal work giving informal individualized training or extra supervision to:

A. Your typical worker in (NAME'S) position. 33-35

___ ___ ___
RECORD HOUR
Some, DK#..... 996
None..... 997
DK..... 998*
NA..... 999

B. NAME 1 (IF NOT THERE FOR 3 MONTHS ASK: For the period he/she was there how many hours of informal training did he/she receive?) 36-38

___ ___ ___
RECORD HOURS
Some, DK#..... 996
None..... 997
DK..... 998*
NA..... 999

C. NAME 2 (IF NOT THERE FOR 3 MONTHS ASK: For the period he/she was there how many hours of informal training did he/she receive?) 39-41

___ ___ ___
RECORD HOUR
Some, DK#..... 996
None..... 997
DK..... 998*
NA..... 999

INTERVIEWER NOTE: IF RESPONDENT ANSWERS QUESTION 277A, B or C IN TERMS OF DAYS, WEEKS OR MONTHS READ: You mean NAME received training ? hours a day for ___days/weeks/months?

(*)

IF 277A, B AND C ARE ALL DK ASK 278. OTHERWISE GO TO 281.

278. How many different co-workers give your typical employee in (NAME'S) position <u>informal</u> training?

__ __ 42-43
RECORD NUMBER
Some, DK#..... 96
None..... 97
DK..... 98
NA..... 99

279. About how many total days of informal training does the average co-worker spend on training your typical new employees in (NAME'S) position?

__ __ 44-45
RECORD DAYS
Some, DK#..... 96
None..... 97
DK..... 98
NA..... 99

280. How many hours <u>each day</u> does the average co-worker spend away from performing other duties in order to informally train a typical new employee?

__ __ 46-47
RECORD HOURS
Some, DK#..... 96
None..... 97
DK..... 98
NA..... 99

281. The last set of questions in this section asks about employee productivity.

Please rate your employee on a productivity scale of zero to 100, where 100 equals the maximum productivity rating any of your employees (NAME'S) position can attain and zero is absolutely no productivity by your employee. 48-50b1

282. What productivity score would you give your typical worker who has been in this job for 2 years? (PROBE FOR NUMBER)

___ ___ ___ *
RECORD NUMBER
DK..... 998
NA..... 999

51-53

283. Now, for each of the following time periods compare the productivity on this same scale of (NAME 1), (NAME 2) and your typical worker in this position. What is the productivity of (NAME/your typical worker) during (READ LIST) . . .

	NAME 1	NAME 2	TYPICAL WORKER	
A. (His/her) first 2 weeks of employment?	___ ___ ___	___ ___ ___	___ ___ ___	54-56/57-59/60-62
	RECORD #	RECORD #	RECORD #	
	NONE..997	NONE..997	NONE..997	
	DK..998	DK..998	DK..998	
	NA..999	NA..999	NA..999	
B. From (his/her) 3rd week to the 12 week at work? (IF NAME 1/ NAME 2 LEFT COMPANY BEFORE 12th WEEK - Q. 257 - DO NOT ASK Q. 283C)	___ ___ ___ **	___ ___ ___	___ ___ ___ *	63-65/66-68/69-71
	RECORD #	RECORD #	RECORD #	
	DK..998	DK..998	DK..998	
	NA..999	NA..999	NA..999	
C. (DO NOT ASK FOR TYPICAL WORKER) Today? OR, IF NAME NO LONGER WORKS FOR COMPANY READ: The last week NAME worked for your company?	___ ___ ___ **	___ ___ ___		72-74/75-77
	RECORD #	RECORD #		
	DK..998	DK..998		
	NA..999	NA..999		

78 3Z

79-80 =12

283A. IF TYPICAL WORKER - IS LESS PRODUCTIVE AFTER 2 YEARS (Q.282 IS LESS THAN Q. 283B, TYPICAL WORKER*) ASK 284. OTHERWISE GO TO 284A.

C.13

1 = 3Z.

New ID: 2-6

284. Why has the productivity of the typical worker declined?

_____ 6-7

_____ 8-9

_____ 10-11

284A. IF NAME 1 IS LESS PRODUCTIVE NOW THAN IN HIS/HER 3-12 WEEKS (Q. 283C IS LESS THAN Q. 283B**) ASK 285. ALL OTHERS GO TO SECTION "C".

285. Why has the productivity of NAME 1 declined?

_____ 12-13

_____ 14-15

_____ 16-17

_____

_____

	First Mention	Second Mention	Third Mention
Tried less hard (general)	10	10	10
Probationary period over	11	11	11
Because union protects the worker	12	12	12
Because other worker sets bad example	13	13	13
Because bored or frustrated with job	14	14	14
Personal or health problems	15	15	15
Learns how to get away with less	16	16	16
Because of conflict with co-workers	17	17	17
Conflict with supervisors	18	18	18
Not worker's fault (general)	20	20	20
Machine broke down	21	21	21
Poor training	22	22	22
Poor supervision or organization	23	23	23
Change of supervisor	24	24	24
Change of work group	25	25	25
Change in job assessment	26	26	26
Recession or bad luck	27	27	27
Health problem acts as limitation	28	28	28
Other _____	96	96	96
DK	98	98	98
NA	99	99	99

PART C: GOVERNMENT PROGRAMS

301. Have you heard that federal tax credits are available to employers who hire certain types of workers. These programs are usually called Targeted Job Tax Credits or TJTC, and Work Incentive tax credit or WIN.

21

Yes..... (ASK 302)..... 1
No.....(GO TO 340).. 2
DK.....(ASK 302)..... 8
NA.....(ASK 302)..... 9
(Q.340 IS ON PAGE 50)

302. Have you or any of your staff spoken to a representative of government, a trade association, or a local business organization about these tax credits?

22

Yes..... (ASK 303).... 1
No.....(GO TO 305). 2
DK.....(GO TO 305). 8
NA.....(GO TO 305). 9

303. In what month and year was your initial contact about tax credits? (IF DK PROBE: What is your best guess.)

23-28

__ __ 1 9 __ __
MONTH YEAR
DK.....989998
NA.....999999

304. Was the initial conversation about tax credits initiated by (READ LIST) (ALLOW ONLY ONE RESPONSE, IF MORE THAN ONE PROBE FOR FIRST CONVERSATION.)

29

You?..... 1
Your staff or company?.2
By Government?..... 3
A Trade association?.... 4
A local business organization?..... 5
Or something else..... 6
DK..... 8
NA..... 9

305. Do you think tax-credit-eligible people would usually make better or poorer new employees than people who are not tax-credit-eligible?

Better..... 1
Poorer..... 2
NO DIFFERENCE.....3
DK..... 8
NA..... 9

30

306A. Does your company try to identify and certify tax-credit-eligible employees that have already been hired?

Yes...(ASK 306B)..... 1
No...(GO TO 307)..... 2 *
DK (ASK 306B)..... 8
NA..(ASK 306B)..... 9

31

306B. Does your company make an effort to select new employees that are tax-credit eligible?

Yes....(GO TO 308)..... 1
No.....(ASK 307)..... 2 *
DK..(GO TO 308)..... 8
NA..(GO TO 308)..... 9

32

IF "NO" TO 306A* AND 306B* ASK Q. 307.
ALL OTHERS GO TO 308.

307. In other words, your company has never hired any tax credit eligible employees. Is that correct?

Never hired...(GO TO 333)...1
Have hired...(ASK 308). ...2
DK...(GO TO 333)...8
NA...(GO TO 333)...9

33

213

308. What has your company done past 3 years to determine if any new employees were eligible . tax credits. (DO NOT READ LIST, WRITE VERBATIM, CODE IF CLEAR, PROBE: What other reasons? Can you be more specific?)

_____ 33-40

_____ 41-42

_____ 43-44

_____

	First Mention	Second Mention	Third Mention
Tried to get more information on tax credit programs (general).....	10	10	10
Called employment service for information.....	11	11	11
Called another government agency for information.....	12	12	12
Efforts made prior to hiring (general)..	20	20	20
Checked job application for eligibility.....	21	21	21
Made assessment of eligibility during the interview.....	22	22	22
Revised job application to obtain necessary information.....	23	23	23
Sent applicant to employment service before hiring.....	24	24	24
Asked applicants if they had characteristics that made them eligible.....	25	25	25
Job applicant told company he or she was eligible.....	26	26	26
Asked employment service to refer eligibles	27	27	27
Asked other agencies to refer eligibles..... ..	28	28	28
Other efforts prior to hiring _____	29	29	29
Efforts made after hiring (general).....	40	40	40
Company made assessment after hiring..	41	41	41
Company sent new employee to job service after hiring.....	42	42	42
Employment service came and checked employees.....	43	43	43
Company hired a firm to check employees.....	44	44	44
Other_____	96	96	96
Nothing.....	97	97	97
DK.....	98	98	98
NA.....	99	99	99

309. Recently the law was changed. Under current law, companies are able to obtain a tax credit for hiring eligible individuals only if the company applies for certification of the employee before that person starts work. In what month and year did you learn of this change in the law?

__ __ 1 9 __ __ 45-50
MONTH YEAR
Now/Didn't know...999997
DK..... 989998
NA..... 999999

309A. READ STATEMENT: This change in the rules became effective in September 1981. The following two sections ask separate questions about your experiences with the programs before and after September 1981.

310. Between January 1980 and September 1981, how many new employees did your company hire that were eligible for a Targeted Job Tax Credits, TJTC, or Work Incentive, WIN, tax credit?

One.....(ASK 311)... 0001 51-54
(GO TO 317) __ __ __ __
RECORD NUMBER
Some, DK#
(GO TO 317)..... 9996
None (GO TO 324). 9997
DK (GO TO 324).9998
NA (GO TO 324).9999

311. In which year did you hire this worker: in 1980 or during the first 9 months of 1981?

1980..... 1 55
1981..... 2
DK..... 8
NA..... 9

312. Did you apply for the tax credit by obtaining certification of the new employee's eligibility?

Yes..... (GO TO 314)... 1 56
No..... (ASK 313).... 2
DK.....(GO TO 314).. 8
NA.....(GO TO 314).. 9

313. Why didn't you apply for the tax credit? (DO NOT READ LIST, RECORD VERBATIM, CODE IF CLEAR, PROBE: What other reasons? Can you be more specific?) _____ 57-58

_____ 59-60

_____ 61-62

_____

	First Mention	Second Mention	Third Mention
Administrative/Structural Reasons (General)	10	10	10
Deadline for applying past	11	11	11
Employee left before being certified	12	12	12
Employee did not stay with firm for required length of time to be certified	13	13	13
Lack of knowledge/Don't know how	14	14	14
Not eligible for other reasons	15	15	15
Other Administration _____	16	16	16
Benefits did not outweigh costs (General)	20	20	20
Tax benefit too small	21	21	21
Paperwork too great	22	22	22
Other _____	23	23	23
Worker ability (General)	30	30	30
Worker is so good tax credits not needed	31	31	31
Other _____	32	32	32
Don't need tax credit (General)	40	40	40
Not needed because company has no tax liability	41	41	41
Other _____	42	42	42
Don't want to get involved with government (General)	50	50	50
Might result in interference by government	51	51	51
Other _____	52	52	52
Don't believe it is right to take government/tax money	60	60	60
Other (General) _____	80	80	80
DK	98	98	98
NA	99	99	99

314. When you hired this eligible employee did you know or think he or she might be eligible for a tax credit program?

Yes (ASK 315)..... 1
No (GO TO 316)..... 2
DK (GO TO 316)..... 8
NA (GO TO 316)..... 9

63

315. How much did this possibility of eligibiltiy increase the the applicant's chance of being hired (READ LIST)..

A great amount..... 1
A moderate amount..... 2
Not very much, or..... 3
Not at all..... 4
DK..... 8
NA..... 9

64

316. How did you learn the worker was eligible? (DON'T READ LIST, RECORD VERBATIM, CODE IF CLEAR, PROBE: What other reasons?/ Can you be more specific?)

_____ 65-66

_____ 67-68

_____ 69-70

_____

	First Mention	Second Mention	Third Mention
Applicant told company.....	10	10	10
Referral agency told told company (general).....	20	20	20
Employment service that referred worker.....	21	21	21
High school that referred worker.....	22	22	22
Welfare office.....	23	23	23
CETA agency that referred worker.....	24	24	24
Other referral_____ _____	25	25	25
Sent applicant to employment service to determine eligibility.....	30	30	30
A company we hired determined eligibility.....	40	40	40
Respondent or staff determined eligibility.....	50	50	50
Employment service came and checked workers.....	60	60	60
Other_____	80	80	80
DK..	98	98	98
NA.....	99	99	99

GO TO Q.327 GO TO Q.327 GO TO Q.327 (PAGE 46)

71-78 b1

79 = 1

80 = 3

C.14
I = 61
New I.D.: 2-5

317. How many of these eligible employees were hired in the first 9 months of 1981?

(ASK 318) ___, ___ ___ ___ 6-9

RECORD NUMBER

Some, DK# (ASK 318). 9996
None (GO TO 324)... 9997
DK (ASK 318)..... 9998
NA (ASK 318)..... 9999
(Q.324 IS ON P.44)

318. How many of the tax credit eligible employees hired between January 1980 and September 1981 were not or will not be claimed for a tax credit?

(ASK 319) ___ ___ ___ ___ 10-13

RECORD NUMBER

Some, DK# (ASK 319). 9996
None (GO TO 320).... 9997
DK (GO TO 320)..... 9998
NA (GO TO 320)... 9999

319. Why didn't you apply for the tax credit for these eligible employees? (DO NOT READ LIST, RECORD VERBATIM; CODE IF CLEAR; PROBE: What other reasons?/Can you be more specific?)

_____ 14-15

_____ 16-17

_____ 18-19

_____

_____

	First Mention	Second Mention	Third Mention
Administrative/Structural Reasons (General)	10	10	10
Deadline for applying past	11	11	11
Employee left before being certified	12	12	12
Employee did not stay with firm for required length of time to be certified	13	13	13
Lack of knowledge/Don't know how	14	14	14
Not eligible for other reasons	15	15	15
Other Administration _____	16	16	16
Benefits did not outweigh costs (General)	20	20	20
Tax benefit too small	21	21	21
Paperwork too great	22	22	22
Other_____	23	23	23
Worker ability (General)	30	30	30
Worker is so good tax credits not needed	31	31	31
Other_____	32	32	32
Don't need tax credit (General)	40	40	40
Not needed because company has no tax liability	41	41	41
Other_____	42	42	42
Don't want to get involved with govern't (General)	50	50	50
Might result in interference by government	51	51	51
Other_____	52	52	52
Don't beleive it is right to take government/tax money	60	60	60
Other (General)_____	80	80	80
DK	98	98	98
NA	99	99	99

320. How many of these employees did you know or think might be eligible before you hired them?

(ASK 321) ___ ___ ___ ___ 20-23
RECORD NUMBER

Some, DK#
(ASK 321)..... 9995

All of them
(GO TO 322)..... 9996

None
(ASK 321)..... 9997

DK (GO TO 322).. 9998

NA (GO TO 322).. 9999

321. Of those you did not know were eligible when you hired them, how did you later learn they were eligible? (DO NOT READ LIST, RECORD VERBATIM, CODE IF CLEAR, PROBE: What other reasons? / Can you be more specific?)

_____ 24-25

_____ 26-27

_____ 28-29

_____

	First Mention	Second Mention	Third Mention
Applicant told company.....	10	10	10
Referral agency told company (general).....	20	20	20
Employment service that referred worker.....	21	21	21
High school that referred worker.....	22	22	22
Welfare office.....	23	23	23
CETA agency that referred worker.....	24	24	24
Other referral_____ _____	25	25	25
Sent applicant to employment service to determine eligibility.....	30	30	30
A company we hired determined eligibility.....	40	40	40
Respondent or staff determined eligibility.....	50	50	50
Employment service came and checked workers.....	60	60	60
Other_____	70	70	70
DK.....	98	98	98
NA.....	99	99	99

IF NONE IN 320, GO TO 324.

322. Of those you knew or thought were eligible when you hired them, how did you learn of their eligiblity (DO NOT READ LIST. RECORD VERBATIM. CODE IF CLEAR. PROBE: What other reasons?/Can you be more specific?)

_____ _____ *30-31*

_____ *32-33*

_____ *34-35*

_____

	First Mention	Second Mention	Third Mention
Applicant told company.....	10	10	10
Referral agency told company (general).....	20	20	20
Employment service that referred worker.....	21	21	21
High school that referred worker.....	22	22	22
Welfare office.....	23	23	23
CETA agency that referred worker.....	24	24	24
Other referral_____ _____	25	25	25
Sent applicant to employment service To determine eligibility.....	30	30	30
A company we hired determined eligibility.....	40	40	40
Respondent or staff determined eligibility.....	50	50	50
Employment service came and checked workers.....	60	60	60
Other_____	80	80	80
DK.....	98	98	98
NA.....	99	99	99

323. How much did this possibility of eligibility increase the applicants' chance of being hired (READ LIST)...

A great amount..... 1
A moderate amount..... 2
Not very much, or..... 3
Not at all..... 4
DK..... 8
NA..... 9

36

324. Next I am going to ask you a series of questions about the period between October 1981 and today. During this period, how many of your new hires were <u>certified</u> as eligible for Targeted Job Tax Credit , TJTC, or Work Incentive, WIN, tax credit?

(ASK 325) ___ ___ ___
RECORD NUMBER
Some, DK#
(ASK 325)..... 996
None..(GO TO 326).... 997
DK..(GO TO 326)..... 998
NA..(GO TO 326)..... 999

37-39

325. How did you learn that these new employees might be eligible for tax credits? (DO NOT READ LIST; RECORD VERBATIM. CODE IF CLEAR. PROBE: What other reasons?/ Can you be more specific?)

_____ 40-41

_____ 42-43

_____ 44-45

_____

	First Mention	Second Mention	Third Mention
Applicant told company.....	10	10	10
Referral agency told told company (general).....	20	20	20
Employment service that referred worker.....	21	21	21
High school that referred worker.....	22	22	22
Welfare office.....	23	23	23
CETA agency that referred worker.....	24	24	24
Other referral_____ _____	25	25	25
Sent applicant to employment service to determine eligibility.....	30	30	30
A company we hired determined eligibility.....	40	40	40
Respondent or staff determined eligibility.....	50	50	50
Employment service came and checked workers.....	60	60	60
Other_____	80	80	80
DK.....	98	98	98
NA.....	99	99	99

326. How many requests for tax credit certifications do you have pending?

— — — 46-48
RECORD NUMBER
Some, DK#..... 996
None..... 997
DK..... 998
NA..... 999

327. Since September 1981 has the requirement that an application for certification be made simultaneously with hiring the worker prevented you from obtaining certification of an otherwise eligible new hire?

Yes.... (ASK 328)..... 1 49
No..... (GO TO 332A)... 2
DK. (GO TO 332A).. 8
NA. GO TO 332A)... 9

328. For how many new hires has this happened?

— — — 50-52
RECORD NUMBER
Some, DK#.....996
DK.....998
NA.....999

329. How many of these did you know or suspect were eligible when you hired them?

— — — 53-55
RECORD NUMBER
Some, DK#.....996
DK.....998
NA.....999

NO QUESTIONS 330 - 332

332A. The next series of questions are for the entire time period from January 1980 through today.

56

333. Have you been asked by the Employment Service or any other agencies to accept referrals of job applicants who are eligible for Targeted Job tax credits, or Work Incentive tax credits?

(THIS IS NOT CETA ON THE JOB TRAINING.)

Yes..(ASK 334)..... 1
No...(GO TO 335)..... 2
DK...(GO TO 335)..... 8
NA...(GO TO 335)..... 9

57

334. Did you agree to accept referral of tax credit eligibles?

Yes..(ASK 335)..... 1
No...(GO TO 338)..... 2
DK...(GO TO 338)..... 8
NA...GO TO 338)..... 9

58

335. Have you asked the employment service or any other agencies to refer people to your company who are eligible for a tax credit?

Yes..(ASK 335A)..... 1
No...(GO TO 338)..... 2
DK...(GO TO 338)..... 8
NA...(GO TO 338)..... 9

59-61

335A. Since January of 1980 how many of these tax credit eligible referrals were hired?

___ ___ ___
RECORD NUMBER
Some, DK#.....996
None.....997
DK.....998
NA.....999

62-64

335B. How many tax credit eligibles you were told had been referred ever showed up for an interview?

___ ___ ___
RECORD NUMBER
Some, DK#.....996
None.....997
DK.....998
NA.....999

336. Since the beginning of 1980 how many tax-credit-eligible workers were referred to you as eligible for TJTC OR WIN, were interviewed but not hired? (IF DK PROBE: Just your best guess.)

(ASK 337) ___ ___ ___
RECORD NUMBER
Some, DK# (ASK 337)... 996
None (GO TO 338)..... 997
DK (GO TO 338)..... 998
NA (GO TO 338)..... 999

337. What were the primary reasons why you did not hire these applicants? (DO NOT READ LIST)... RECORD VERBATIM, PROBE: What other reasons? / Can you be more specific?

_____

_____

_____

	First Mention	Second Mention	Third Mention
Poor qualifications (general).....	01	01	01
Person had wrong skills.....	02	02	02
Insufficient skills.....	03	03	03
Reading and writing poor.....	04	04	04
Lack of job knowledge.....	05	05	05
Lack of experience.....	06	06	06
Overqualified.....	07	07	07
Poor school record.....	08	08	08
Insufficient schooling or training....	09	09	09
Got poor recommendation from previous employer.....	10	10	10
Poor previous work record.....	11	11	11
Application incomplete.....	12	12	12
Misstatement on application.....	13	13	13
Poor interview.....	14	14	14
Applicant didn't show interest in job.	15	15	15
Language problem.....	16	16	16
Person doesn't seem to fit into company.....	17	17	17
Handicapped.....	18	18	18
No openings.....	19	19	19
Employment service was slow in sending people.....	20	20	20
Other_____	96	96	96
DK.....	98	98	98
NA.....	99	99	99

74

338. In the future, do you plan to ask for referrals of tax-credit-eligible employees when you need to hire unskilled workers?

Yes (GO TO 340)..... 1
No (ASK 339)..... 2
DK (ASK 339)..... 8
NA (GO TO 340)..... 9

75-76 = 62
79 = 2
80 = 4

C.1F

1 = bl

339. Can you tell us why you do not plan to ask for referrals? (DON'T READ LIST. RECORD VERBATIM. CODE IF CLEAR. PROBE: What other reasons?/ Can you be more specific?)

New I.D.: 2-5

6-7

8-9

10-11

_____

_____

_____

_____

	First Mention	Second Mention	Third Mention
a. Didn't think of it	01	01	01
b. Don't expect to be hiring	02	02	02
c. Will not be needing types of workers who might be eligible	03	03	03
d. Employment service or other agency is too slow	04	04	04
e. Don't use the employment service	05	05	05
f. Dissatisfied with employment service referrals	06	06	06
g. Too much paper work	07	07	07
h. Eligible workers not skilled enough	08	08	08
i. Eligible workers not reliable enough	09	09	09
j. Applicants should be judged by qualifications not by whether tax credit available	10	10	10
k. Would not benefit because we have no tax liability	11	11	11
l. We are not eligible	12	12	12
m. Tax benefit not big enough	13	13	13
n. Might result in govern't interference Specify type_____	14	14	14
o. Other (SPECIFY)_____	15	15	15
DK	98	98	98
NA	99	99	99

228

12

340. Have you heard of a government On-the-Job Training Program or OJT whereby the government pays a share of a private employer's cost of hiring and training certain eligible workers? In your area this program is administered by the employment service, CETA, and (READ FROM CARD A.)

Yes....(ASK 341)..... 1
No..... (GO TO 359)..... 2
DK (ASK 341)..... 8
NA (ASK 341)..... 9

(Q. 359 IS ON PAGE 56)

13

341. Have you or any of your staff spoken to a representative of government or a local business organization about the OJT program?

Yes (ASK 342)..... 1
No (GO TO 343)..... 2
DK (GO TO 343)..... 8
NA (GO TO 343)..... 9

14

342. Was the initial conversation about this program initiated by (READ LIST)...

You..... 1
Your staff or company.. 2
The Government..... 3
A trade association,or.. 4
A local business organization..... 5
Or something else..... 6
DK..... 8
NA..... 9

343. Since January 1980 how many potential OJT employees did you hire for which you were promised reimbursement by this program?

(ASK 344) ___ ___ 15-16
RECORD NUMBER
Some, DK# (ASK 344) 96
None (GO TO 350)..... 97
DK (ASK 344)..... 98
NA (ASK 344)..... 99

17-61

344. How many such employees did you hire since January 1981?

___ ___ 18-19
RECORD NUMBER
Some, DK#..... 96
None..... 97
DK..... 98
NA..... 99

345. Since January 1980 have you ever hired a worker referred by the OJT program for which you were supposed to receive reimbursement but did not?

Yes (ASK 346)..... 1 20
No (GO TO 348)..... 2
DK (GO TO 348)..... 8
NA (GO TO 348)..... 9

21-61

346. How many of the OJT contract workers hired did you not receive reimbursement for?

___ ___ 22-23
RECORD NUMBER
Some, DK#..... 96
None..... 97
DK..... 98
NA..... 99

347. Why was reimbursement not received? (DO NOT READ LIST. RECORD VERBATIM. CODE IF CLEAR. PROBE: What other reasons?)

_____ 24-25

_____ 26-27

_____ 28-29

	First Mention	Second Mention	Third Mention
a. Employee did not stay with firm long enough	01	01	01
b. Benefit too small	02	02	02
c. Paperwork too great	03	03	03
d. Don't believe it's right to take government money	04	04	04
e. I have as little to do with government as possible	05	05	05
f. Might result in interference by government: SPECIFY type _____	06	06	06
g. Worker is so good I don't need reimbursement to justify hiring	07	07	07
h. The agency reneged on agreement	08	08	08
i. Other (SPECIFY)_____	09	09	09
No Response/DK	98	98	98
NA	99	99	99

30

348. Since January 1980, have any of the employees for whom you have obtained some OJT reimbursement been people you originally recruited and then sent to the appropriate government agency to obtain certification?

Yes (ASK 349) 1
No (GO TO 350)..... 2
DK (GO TO 350)..... 8
NA (GO TO 350)..... 9

349. Since January 1980 how many workers did you recruit and obtain partial reimbursement for in this way?

31-33

___ ___ ___
RECORD NUMBER
Some, DK#.....996
None.....997
DK.....998
NA.....999

350. Have you been asked by the Employment Service, CETA or other agency to accept referrals of job applicants for which you would receive OJT reimbursement?

34

Yes (ASK 351)..... 1
No (GO TO 352)..... 2
DK (GO TO 352)..... 8
NA (GO TO 352)..... 9

351. Did you agree to accept applicants?

35

Yes (GO TO 353)..... 1
No (GO TO 357)..... 2
DK (GO TO 353)..... 8
NA (GO TO 353)..... 9

352. Have you asked any of these agencies to refer to your company people for whom OJT reimbursement would be available?

Yes (ASK 353)..... 1
No (GO TO 357)..... .. 2
DK (ASK 353)..... 8
NA (ASK 353)..... 9

36

353. Have you knowledge of any people being referred to you by this program since January 1980 who did not come in for an interview?

Yes.... (ASK 354)..... 1
No.... (GO TO 355)..... 2
DK (GO TO 355)..... 8
NA (GO TO 355)..... 9

37

354. How many? (IF DK PROBE: Just your best guess.)

___ ___ ___
RECORD NUMBER
Some. DK#..... 996
None..... 997
DK..... 998
NA..... 999

38-40

355. Since January 1980, how many job applicants who were referred by this program came to your establishment to apply for the job but were not hired?

___ ___ ___
RECORD NUMBER
Some, DK#(ASK 356) 996
None (GO TO 357).. 997
DK (GO TO 357)... 998
NA (GO TO 357)... 999

41-43

356. What was the primary reason you did not hire these applicants? (DO NOT READ LIST, RECORD VERBATIM, CODE IF CLEAR; PROBE: What other reasons? / Can you be more specific?)

_____ 44-45

_____ 46-47

_____ 48-49

_____

	First Mention	Second Mention	Third Mention
Poor qualifications (general).....	01	01	01
Person had wrong skills.....	02	02	02
Insufficient skills.....	03	03	03
Reading and writing poor	04	04	04
Lack of job knowledge.....	05	05	05
Lack of experience.....	06	06	06
Overqualified.....	07	07	07
Poor school record.....	08	08	08
Insufficient schooling or training....	09	09	09
Got poor recommendation from previous employer.....	10	10	10
Poor previous work record.....	11	11	11
Application incomplete.....	12	12	12
Misstatement on application.....	13	13	13
Poor interview.....	14	14	14
Applicant didn't show interest in job.	15	15	15
Language problem.....	16	16	16
Person doesn't seem to fit into company.....	17	17	17
Handicapped.....	18	18	18
No openings.....	19	19	19
Employment service was slow in sending people.....	20	20	20
Other_____	96	96	96
DK.....	98	98	98
NA.....	99	99	99

357. Are you planning to ask for referrals from this program in the future when you need to hire unskilled workers?

Yes...(GO TO 359)..... 1 50
No... (ASK 358)..... 2
DK (ASK 358)..... 8
NA (GO TO 359)..... 9

358. Can you tell me why you do not plan to ask for any referrals? (DO NOT READ LIST, RECORD VERBATIM, CODE IF CLEAR, PROBE: What other reasons?/Can you be more specific?)

_____ 51-52

_____ 53-54

_____ 55-56

_____

	First Mention	Second Mention	Third Mention
a. Didn't think of it	01	01	01
b. Don't expect to be hiring	02	02	02
c. Will not be needing types of workers who might be eligible	03	03	03
d. Employment service or other agency is too slow	04	04	04
e. Don't use the employment service	05	05	05
f. Dissatisfied with employment service referrals	06	06	06
g. Too much paper work	07	07	07
h. Eligible workers not skilled enough	08	08	08
i. Eligible workers not reliable enough	09	09	09
j. Applicants should be judged by qualifications not by whether tax credit available	10	10	10
k. Would not benefit because we have not tax liability	11	11	11
l. Were not eligible	12	12	12
m. Tax benefit not big enough	13	13	13
n. Might result in government interference. Specify type _____	14	14	14
o. Other (SPECIFY) _____	15	15	15
DK	98	98	98
NA	99	99	99

359. From a profit point of view, was 1981 a very good year, a pretty good year, not a good year, or a year of losses?

very good 1 57
pretty good 2
not good. 3
losses. 4
DK 8
NA 9

COMMENTS

INTERVIEWER NOTE: IF ANY DKS TO QUESTIONS, ASK: "May I call you back later to get this information from you (READ NEEDED INFORMATION).

That ends our question series on this study. Thank you very much for your time and co-operation. You will receive a copy of a report on the results to this study in about a year. Thank you again. Have a nice day.

I hereby attest that this is a true and honest interview.

_____
(INTERVIEWER'S SIGNATURE)

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62-65
66-78 = bl
79-80 = 15

59

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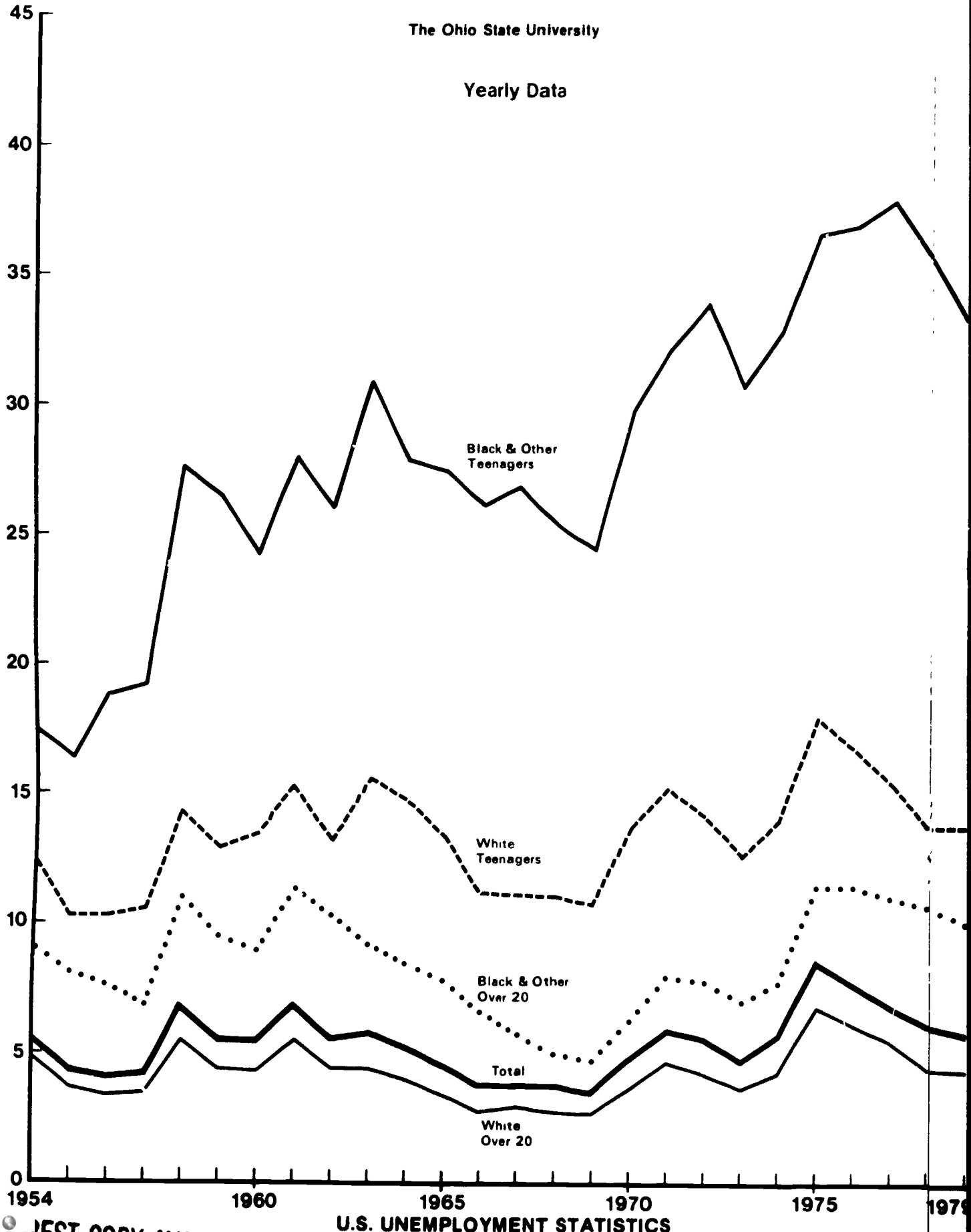
Yearly Data



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