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Contract Employment: Measurement and Implications For Employer-Employee Relationships

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A widely shared assessment of the American labor market is that the relationship between employees and their employers has changed in important ways (Howell and Kalleberg, 2019; Kalleberg, 2000; Smith, 1997; Pfeffer and Baron, 1988). These shifts are typically characterized as a weakening of the traditional ties between organizations and their workforce and a concomitant increase in the incidence of non-standard jobs. The common use of the term “non-standard” encompasses a range of practices including jobs found via staffing or temporary firms, freelancing, involuntary part-time employment, and contracting out of jobs. A particularly dramatic illustration of the trend is a recent report that at Google temporary employees and contractors outnumber the firm's standard workforce (Wakabayashi, 2019).

Although non-standard work is of great interest our understanding has been limited in important measure because of the absence of data that utilizes consistent theoretically grounded definitions, that is nationally representative, and that captures in detail the nature of the employment settings in which people find themselves. The only national survey with a reasonable sample size is Contingent Workers Survey (CWS) which is a supplement to the Current Population Survey (CPS). As we describe below this survey suffers from problems of both question design and concept definition. In addition, because of its linkage to the CPS, the variables characterizing the features of employment are limited. As Howell and Kalleberg (2019) note, “Unfortunately, interest in and theories of nonstandard work arrangements have outrun empirical evidence based on representative data and using consistent definitions and adequate measures.”

This paper fills this gap via an original survey executed in January, 2020, that is nationally representative and consists of 3,648 working adults between ages 24 and 64. Considerable care was taken to define non-standard work and to make careful distinctions among

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sub-categories as well as collect rich data on the nature of the employment. The first contribution of this paper is, therefore, to provide credible national estimates of non-standard work.

After providing these estimates the paper focuses on contract company employees, that is on arrangements in which the worker is employed by one organization but is assigned to work at the site of another (we use the term “contract company employees” rather than “contractors” in order to be clear that we are not referring to independent contractors which is an alternative term for freelancers). Contract company employment is the most severely mis-defined and undercounted form of non-standard work and for that reason the implications for employment outcomes the most poorly understood. In addition, because contract company employees work in an organization alongside standard employees the comparisons which we undertake in this paper provide insight into employment relationships.

Temporary help employees are a sub-set of contract company employment and considerable research has been directed at them in part because they seem representative of the phenomena and are relatively accurately measured despite representing less than two percent of the workforce. More recently scholars and policy makers have become interested in what appears to be the more extensive use of contract company employees to permanently replace standard workers. Visible examples include organizations laying off their cleaning staff or security staff and replacing them with contract company employees. An illustration of this pattern is that when WeWork found itself in difficulty due to a failed IPO it transferred over a thousand maintenance staff, who had been standard employees, into contract status as a way to save costs (Eavis and Isaac, 2019). This use of contract company employees extends into other sectors including manufacturing (Dey, Houseman, and Polivka, 2012) and High Tech (Barley and Kunda, 2004).

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Given the importance of contract company employment it is important to understand its consequences for the workforce. With respect to wages the literature points in conflicting directions. For example Dube and Kaplan (2010) show that for some occupations there is a substantial wage penalty whereas other researchers point to a range of reasons other than driving down wages for utilizing contract company employees (Abraham and Taylor,1996; Erickcek, Houseman, and Kalleberg,2003).

The second outcome we emphasize is the impact of contract company employment for access to employer provided training. Training is an understudied outcome that is important both for the career trajectory of the individuals and also because it provides insight into the evolution of employment relationships and Internal Labor Markets (ILMs).

In short we aim to accomplish three goals: provide reliable estimates of the scope of non-standard work in general and contract company employment in particular, understand the implications of contract company employment for the individuals who undertake it, and utilize patterns of training provision to draw out the implications of contract company work for employment relationships.

We find that for their main job (defined in the survey as the job in which the respondent spends the most time) 10.8 percent of the adult workforce is employed as contract company employees. We estimate selection models and these demonstrate that people who face barriers in the job market—the less educated and racial and ethnic minorities—are more likely to be contract company employees.

With these incidence and selection findings in hand we turn to the broad question regarding the implications of contract company employment for the evolution of employment relationships. For earnings we find that on average contract company employees suffer an

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earnings disadvantage relative to standard employees after standard human capital controls however when controls are introduced for job skill the disadvantage is eliminated, a finding that points to heterogeneity within the group.

With respect to training we distinguish between four measures of policy driven training—orientation, workplace behavior, skills training, and tuition benefits—on the one hand and we also study informal training which is partly policy driven but which also has a significant social component. We find that for all measures of organizational training policy contract company employees receive less training at their worksite than do observationally equivalent standard employees and that this disadvantage persists in the face of a substantial set of controls for education, the job's skill requirements, and occupation as well as indicators of motivation. That high skill contract company employees do not face a wage penalty but do face more limited training than standard employees points to their exclusion from the work site's Internal Labor Market (ILM).

It is also notable that while contract company employees are worse off than standard employees on all dimensions they do receive orientation and workplace behavior training at relatively high rates. This is important because it implies that the organization (the worksite) is aware of the contract company employees and is consciously making policy with respect to them. When we ask about informal training we find that because of its social nature the disadvantage faced by contract company employees is muted.

We observe that contract company employees may also receive training from their legal employer as well as from the site where they are assigned. This additional training does not affect our conclusions regarding the trajectory of ILMs but it does narrow the gap with standard

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employees and has economic welfare implications. However the overall training gap still persists after controls for demographic and educational variables.

Throughout our analysis we find evidence race and ethnicity based disparities. Race and ethnicity plays a role in determining who enters into contract work and we also find that for training race and ethnicity help drive access. Most strikingly the significance of racial differentials with respect to informal training adds to the literature (Small and Pager, 2020; Storer, Schneider, and Harknett, 2020) that demonstrates that racial attitudes are carried over into the workplace.

Open Questions: Incidence, Earnings, and Training

A basic question, but one for which there is currently no good answer, is the extent of contract company employment. In our framework standard employment means that the organization that defines and directs the work is also the same organization that is legally responsible for the employee in the sense of directly compensating the employee, withholding taxes, and paying whatever benefits are legally required (Cappelli and Keller, 2013; Abraham, Haltiwanger, Sandusky, and Spletzer, 2018; Abraham, Hershbein, and Houseman, 2019). If the organization that directs the work is not the organization that withholds taxes and is legally and financially responsible for the employee then the work is either contract company employment or freelancing with the difference being that freelancers have no legal employer responsible for paying wages and taxes whereas the staffing firm plays this role for contract company employees.

Just as the concepts behind the idea of non-standard work can be problematic so has measurement been an issue. The most widely used nationally representative household survey, the Bureau of Labor Statistics Contingent Worker Survey (CWS) likely misses a good deal of

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contract company employment. The explanation lies both in sampling strategy and in question design and definitions. The CWS permits proxy responses (i.e. a household member answering about someone else) yet it seems likely that the proxy respondent will not know the details of employment arrangements and is unlikely to report that a job is contracting (National Academy of Sciences, Engineering, and Medicine, 2020).

Question designs are also a problem. With respect to contract company work the CWS question requires that the contract company employee be assigned only to one site yet many of them (for example building cleaners or security guards) work in multiple locations. In addition respondents can easily be confused by what is meant by the question phrasing. The CWS asks "“Were you employed by government, by a private company, a nonprofit organization, or were you self-employed or [if applicable] working in the family business?” As Abraham, Hershbein, and Houseman (2019) point out, a contract company worker could reasonably answer that she was employed by the company where she works whereas another could refer to their legal employer. A recent review of the CWS by a National Academy of Sciences committee reaches the same conclusion, i.e. that the CWS misses a great deal of contract company employment (National Academy 2020, p. 9).

Turning to consequences, as noted, the literature points in conflicting directions with respect to the implications for contract company employment for earnings. One motivation that points to lower compensation is the straightforward objective of obtaining a workforce at lower wages, for example by a bidding process among contractor firms that emphasizes price and therefore provides an incentive to minimize wage costs. A second explanation for lower compensation is that the use of contract company employees enables firms to remove some occupations from the wage norm constraints of ILMs. However other more benign motives

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include the need to staff for peak demand or product market volatility and the challenge of obtaining scarce skills for short term assignments (Houseman, Kalleberg, & Erickcek, 2003; Kunda, Barley, & Evans, 2003; Abraham and Taylor, 1996). These multiple motivations suggest that a sub-set of contract company employees will not suffer an earnings disadvantage due to their status and leave open the question of the overall impact.

Training is a strikingly understudied outcome in the literature on non-standard employment despite the importance of skill development for compensation and career growth (Lynch, 1992; Bartel, 1994; Bartel, 1995; Brown, 1989; Waldman and Gibbons, 2006). By common consent employer provided training is the largest source of skill development for adults (Author, 2021) but to date there are no data that enable an analysis of the relationship between employment status and access to training.

In addition to its implications for an individual's career training is a central component of Internal Labor Markets and reduction in training investments by employers is an indicator of the fraying of those relationships. In the original formulation ILMs were explained as arising from the need to create job ladders so that senior employees were not threatened by juniors and hence were willing to provide them with on-the-job training (Doeringer and Piore, 1972). In their mapping of employment systems in California firms, using Employment Service data, Baron, Davis-Blake, and Bielby test and confirm the hypothesis that "the greater an establishment's dependence on firm-specific skills and on-the-job training, the more likely the establishment is to have an ILM (Baron and Davis-Blake, and Bielby, 1986)." The empirical literature on training also links it to ILMs. The most straightforward version is that firms with well developed job ladders will provide more training because they are more likely to be able to retain employees (Lynch and Black, 1998). At a deeper level training is seen as a practice that is complementary

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to what are often termed High Performance Work Systems that entail practice such as job enlargement and quality programs. (MacDuffie, 1995; Ichniowski, Shaw and Premushi, 1997; Black and Lynch, 2001; Arthur, Herdman, and Ya, 2021). Organizational sociologists also view training as a component of a firm's ILM or human resource practices. Knoke and Kalleberg (1994) utilized an employer based survey that collected data on organizational characteristics and training policies and concluded that "Company managers presumably view formal training as an integral component of a larger human resources program that defines employees' positions in the organization."

Note that if contract company employees do receive less training than standard employees this implies that the reach of ILMs is shrinking. The logic is that if the utilization of contracting has increased and if contract company employees receive less training than do standard employees then, overall, organizations for the same volume of output are investing less in training than in the past with concomitant reductions in the scope of their ILMs.

It is important to calibrate expectations with respect to non-standard work and training. The argument is not that organizations provide contract company employees with no training. Even in the cleanest example of an unstructured labor market staffed with migrant and highly contingent employees there is some training regarding how and where to pick fruits and vegetables (Fisher, 1953). Consider also that when a temporary worker is brought on board to replace a vacationing administrative assistant the temp necessarily receives some training about organizational procedures. Our hypothesis is that at the site where they work contract company employees receive less training than equivalent standard employees doing the same job and this gap remains after extensive controls.

A final complication flows from the fact that contract company employees are assigned to work at one organization—which we focus on in the foregoing ILM discussion-- but do have a legal employer (the contracting firm) who hires them out and pays their wages. Under some circumstances the legal employer might provide training to the contracting company employee. On its face this is not consistent with the Becker (1964) training model because some contract company employees, such as temp workers, are mobile and the legal employer may find it difficult to capture the productivity gains from training. However scholars studying temp workers nonetheless to observe training (Fernandez-Mateo 2009; Autor, 2001) and one explanation is that the legal employer can observe the employees performance and use this inside information to set prices (Autor, 2001). In any case, the fact that some contract company employees receive training from their legal employer implies that their total access to employer based skills training is the sum of any training they receive at their worksite as well as from their legal employer and this may close the gap with standard workers. On the other hand the fact that contract company employees may, on average, be drawn from groups who face labor market barriers suggests that even with both sources considered they may still be at a training disadvantage.

Methods

The survey from which this paper draws was conducted in January, 2020 by National Opinion Research Corporation (NORC) and draws from its standing nationally representative AmeriSpeak panel.¹ The present sample is limited to people between the ages of 24 and 64 who were working in civilian non-agricultural jobs. The survey was conducted in English and Spanish. Respondents had the option of answering via telephone but only 89 respondents availed themselves of this option. Table 1 provides the relevant data for our sample and

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benchmarks it against the Outgoing Rotation Group of the Current Population Survey. As is apparent, the weighted survey is a close match on demographic dimensions.

--Table 1 here--

A potential concern regarding the survey is that it was done largely online this might bias the findings given that not everyone utilizes the internet. As noted, the survey did provide a telephone option but the take-up was very low. It is worth noting that standing panels such as ours have been used in recent academic research (Kochan, Yang, Kimball, and Kelly, 2019; Pedulla and Mueller-Gastell, 2019; McGinty, Presskreischer, Han and Barry 2020), government research reports (Board of Governors Federal Reserve System, 2018; Robles and McGee, 2016), and Pew Survey Research (Horowitz and Graf, 2019).

Research on possible biases in online surveys is reassuring. In 2015 Pew, perhaps the leading national survey firm, executed parallel surveys and searched for differences in responses between those in the mail survey arm and those in the online arm (Keeter and McGeeney, 2015). At the time Pew reported that 89 percent of the population had access to the internet, a figure that has likely increased since then. In their study out of 406 survey items two thirds had a difference in the response between the two arms of 1 percentage point or less and only nine items had a difference of 5 percentage points or more. When they examined differences within sub-groups the most important consideration was age: those 65 and over showed more differences between the two arms because a lower fraction of this age group was on the internet and hence those who reply via that mode are more likely a biased sample. This is not a concern for the present research since our age range tops out at 64. The central conclusion of the Pew Report

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was "most survey estimates produced by Web surveys will be a little different from those produced by surveys that cover the entire public Keeter and McGeeney, 2015, pp 8-9)."

These results are reinforced by a separate study comparing probability sampling and interviewing via Random Digit Dialing (RDD) versus via the internet. Chang and Krosnick (2009) concluded that the internet methodology was equivalent with respect to representativeness and superior with respect to self-reporting accuracy (largely due to the lower rate of social desirability response bias).

Variables

The survey used here took considerable care to ask respondents a battery of questions that arrived at as precise an answer as possible based on the conceptual framework that we have laid out. This sequence of questions is laid out in the Appendix and is based on the formulations of Abraham, Hershbein, and Houseman (2019) who utilized both focus groups and cognitive testing in Gallup polls to determine how respondents replied to various question formulations.

We work with two outcome variables, employer provided training and total annual earnings. We use total annual earnings because contract company employees often work for more than one employer over the course of a year. The training measures that we will work with (showing the language used in the survey) are:

General orientation training: this is "Initial orientation training explaining the organization and/or what you will be doing in your job."

Workplace behavior training: this is "Training regarding harassment or other aspects of workplace behavior."

Further skills training: this is "Other job-related training such as how to run a new machine, a new administrative process, or use a new piece of software"

Informal training: this is training "when your fellow employees take the time to show how to do the job or to learn new skills"

Education benefits: this "an education or tuition benefit that reimburses you for courses that you take in a college, community college, school, or on-line program"

Contract company employees were asked separately about training they receive at the site where they are assigned and about training they receive from their legal employer and we focus on training received within the twelve months prior to the survey. The education benefit variable is a human resource policy question and refers to the policy in effect at the time of the interview. The workplace behavior question refers to whether they have ever received it from the work site and when we take up patterns for the orientation question we limit the sample to people who had been employed (or at the site) for a year or less.

The distinctions made in these training questions are relatively new to the literature. Most notably the literature rarely breaks out orientation and workplace behavior training from formal skills training but instead asks questions for training in general. Taken as a whole these measures paint a complete portrait of the training opportunities and provision to standard employees and contractors. This said, there are subtle differences regarding what is being captured. Informal training involves not only the policies of the organization but also implicates the social relationships among employees and hence disparities may shed some light on those interactions. The tuition benefit question captures both the existence of the policy and awareness about it. This said if employees or contractors lack knowledge of a policy this may reflect a policy decision by the organization regarding promotion of the policy.

The definitions, means, and standard deviations of the independent variables are provided in Table 2. A few of the independent variables deserve additional comment.

The specific skills variables are motivated by Becker's (1964) classic distinction between general and specific training. The measures we use are based on questions: "If you changed jobs how useful would the skills you received in training be to a new employer in the same

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industry; If you changed jobs how useful would be the skills you received in training in a different industry?" The answers to these two questions were on a one to five scale from totally transferable to not at all transferable and we assign a positive value if the answer was totally or mostly transferable. The framing is similar to that used elsewhere in the literature (Lowenstein and Spletzer, 1999; Waddoups, 2014) but we add the distinction between same industry and different industry specificity.

The skill measures draw from the literature on survey based measurement of workplace skills (Handel, 2016; Handel 2017; OECD/PIAAC, 2016). The survey asked a series of questions about the skills the respondent uses on the job. The stem was "how often do you" and the skills were: "Facing a complex problem that takes at least 30 minutes to find a good solution," "Being required to read a document of more than five pages," "Being required to use math addition, subtraction, multiplication," "Being required to use math beyond addition, subtraction, and multiplication," "Being required to use a computer for word processing, web-browsing, or email (but not including using a device such as a cash register that is simply attached to a computer)," "being required to work with specialized software beyond word-processing, web-browser, or email," and "Working as part of a team in which you and your colleagues decide how to get the work done." For each of these skills we assign a value of one if the respondent engages in them at least once a week and a zero otherwise. These items were then summed into a skill index that took on a value between one and seven (Cronbach's Alpha = .742). In addition we asked about whether once a week or more they are "required to perform physical labor for a stretch of 30 minutes or more" and this was entered into the models separately.

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The industry and occupation codes for contract company employees refer to the industry where they are assigned to work and the occupation they are engaged in at that site. The unemployment rate variable, which is utilized in the selection models below refers to the State in which the respondent lived and is what is termed U-6 which the Bureau of Labor Statistics reports as a measure including, in addition to people actively looking for work as does the standard measure, also discouraged workers and involuntary part-time workers.

--Table 2 here--

Incidence and Selection

We first present descriptive data on the incidence of the several employment categories. In Table 3 if we focus on the main job (defined in the survey as the job where they spend the most hours) then 81.4 percent are in standard employment with freelancers accounting for 7.7 percent of the workforce and contract company employees 10.8 percent. It is also worth noting that 5.6 percent of the workforce works as freelancers in a second job and 1.8 percent of the workforce works as contract company employees in a second job.

Our incidence of freelancers in their main job is close to the 2017 CWS estimate of 6.5 percent for 25-64 year olds (recall that the CWS only captures main jobs), our estimate of temp workers is somewhat above the CWS estimate of 0.8 percent but very close to the estimate provided by Dey, Houseman and Polivka (2010) from the employer based Current Employment Statistics program. Our estimate of contract company employees who are not temps is very much in excess of the CWS estimate of 0.5 percent. Finally our evidence on the substantial incidence of second job freelancers is consistent with estimates of non-standard employment based on tax reporting (Abraham, Haltiwanger, Hou, Sandusky, and Spletzer, forthcoming).

--Table 3 here--

One might be concerned that our estimate of the incidence of contract company employment is well above that of the CWS but recall that the CWS definition is quite restrictive in that workers who are usually assigned to more than one site are not counted as contract company employees and additionally the questionnaire language in the CWS likely leads many people to incorrectly report their status. If we look for evidence that our figure is reasonable the tax data are not useful because contract workers receive W-2s and hence are not distinguishable from employees in standard situations. However our estimates are consistent with cases studies of specific industries (Erickcek, Houseman, and Kalleberg. 2003). Additionally for manufacturing Dey, Houseman, Polivka (2012) linked a large representative BLS survey of establishments (the Occupational Employment Statistics) to the CWS data on industry assignment of staffing agency workers. They report that that the percent of manufacturing employment that was comprised of workers assigned by staffing firms grew from 2.3 percent in 1989 to 9.2 percent in 2006. Other studies that found substantial increases in contract company employment in various industries include Dey, Matthew, Susan N. Houseman, and Anne E. Polivka. 2012; Dube and Kaplan (2010); Autor (2003); and Weil (2014). In addition, press reports emphasize the extensive utilization of contract workers (Weber, 2017; Roosevelt,2019).

A summary headline for the foregoing is that the overall incidence of non-standard work is substantial and clearly in excess of the widely cited estimates from the Contingent Worker Survey. These differences likely arise from three sources: the more theoretically grounded

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definitions used here, the more careful questionnaire design, and data on second jobs as well as the main jobs captured in the CWS.

Table 4 displays the occupational distribution of contract company employees compared to that of standard employees. First is it apparent that contract company work is not confined but rather occurs across the full range of occupations. This said, contract work is more common in low end service jobs and blue collar jobs than in professional and higher quality white collar work.

--Table 4 here--

An additional point regarding occupation, and a more general descriptive fact regarding contract company employees, is that many spend relatively little time at any given worksite. We asked about frequency of reassignment and 36.9 percent reported that they were reassigned every six months or less.

Selection

We now turn to selection: who enters contract company employment. Table 5 provides descriptive statistics on the makeup of standard employees, freelancers, and contract workers. It is apparent that freelancers, both first and second job, look similar to standard employees and this suggests that they are not at a disadvantage in the labor market and in the present survey 82.2 percent of first job freelancers said they preferred their status.

By sharp contrast contracting work is much more likely to be undertaken by people whose characteristics put them at a disadvantage in the job market. They are more likely to be African-American or Hispanic, less well educated, and younger.

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There is not a great deal of selection modeling in the literature. Pedulla and Mueller-Gastell (2019) model, for those seeking full time employment, the job search decision regarding applying for standard jobs, part-time work, and temporary jobs. Another example is found in Bidwell and Briscoe (2009) who model the decision to enter contracting versus standard jobs among graduates of high end IT masters programs in five universities. In both cases the scope of the samples and type of type of non-standard jobs studied are more limited than what we consider here but we follow Pedulla and Mueller-Gastell (2019) and Bidwell and Briscoe (2009) in our use of multinomial logit.

--Table 6 here--

In interpreting the results it is important to realize it is in effect a reduced form, of push and pull considerations. Consider two extremes: Autor and Houseman (2010) describe job search programs in which participation is required to receive benefits and the programs then place many participants into temporary jobs. In this case the choice to work for a temp agency is a push, driven by the demand side of the labor market. But as Fernandez-Mateo (2016) notes "... A large percentage of individuals working as contractors do so by choice and possess high levels of human capital ..." and Kunda, Barley, and Evans (2002) make a similar observation.

This said, the patterns in the model reinforces the descriptive patterns that contract company employees are more likely to be African-American or Hispanic, are more likely to have only a high school education, and are more likely to hold these jobs if they live in a state with high unemployment. In short, people who face greater labor market barriers are more likely to find themselves in contract company work.

Earnings

As noted earlier, the literature on the earnings consequences of contractor status does not suggest a clear expectation. As an example Dube and Kaplan (2010) find that when security jobs and janitors are outsourced earnings fall and this pattern seems apparent in other industries and occupations (Bernhardt, Batt, Houseman, Applebaum, 2015). An additional consideration regarding earnings is that contract company employees are in a position where their access to work is intermediated by a contracting firm which can collect some of the wages that clients are willing to pay to get the job done (Fernandez-Mateo, 2007). Nonetheless high end contract company employees may command high earnings given their specialized skills (Barley and Kunda, 2014; Bidwell and Briscoe, 2009) and when contract company employees are utilized to fill in during peak times the earnings consequences are ambiguous (Abraham and Taylor, 1996).

Because contract company employees work at multiple sites we choose to ask about annual earnings. For contract company employees the mean is \$41,401 versus \$53,732 for standard employees. Table 7 reports standard earning regressions for the sample including contract company employees and standard employees. The results are unchanged when freelancers are included.

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Focusing first on the impact of contract company employment the variable, as hypothesized, is negative and significant when only human capital controls are included and also when race, ethnicity, and gender are controlled for. These results suggest that even after controlling for human capital contract company employees experience lower earnings than equivalent standard employees. Unfortunately the model, consistent with a great deal of the

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literature on earnings, show that even after extensive controls gender and race/ethnicity for African-Americans and Hispanics lead to reduced earnings.

Although as a group and after human capital controls contract company employees are at an earnings disadvantage the literature is clear that there is a sub-group of skilled contract company employees who may in some respects do better in the labor market than standard employees (Barley and Kunda, 2004; Fernandez-Mateo, 2016; Smith and Neuwirth, 2008). In our survey 29.5 percent of contract company employees earned more than the mean earnings of standard employees. The third column of Table 7 includes skill variables and the results suggest that when these are considered the earnings penalty of contract company employment is eliminated. The implication of this is that, as implied by the literature cited above, there is considerable heterogeneity within the category.

To explore the patterns of heterogeneity we estimate models for only the contract company workforce and the earnings model is in Table 8. Both education and skill are positive and significant which is consistent with the literature that organizations make distinctions within the contractor group. Put differently, the idea that there is a “high end” group of contractors is supported although, as we have seen, on average contracting status entails detriments in the labor market. Equally notable is the evidence of gender disparity in earnings and the earnings penalty confronting African-Americans. The pattern with respect to African-Americans is relatively new to the literature and the gender pattern supports the prior work of Fernandez-Mateo (2009) and Pedulla (2016).

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Training

We now turn to training and compare outcomes for contract company employees with standard employees. The plan of attack is to first estimate models that clearly reflect the policy decisions of the employer or worksite. These are formal skills training, orientation, workplace behavior, and the education benefit. We then take up informal training which, as discussed earlier, represents an interaction of organizational policy and the attitudes of the standard workforce.

Table 9 displays descriptive training patterns for standard employees and contract company employees at the site where they are assigned. In this table, and in all subsequent analysis, we omit traditional self-employed respondents (since they are, in effect, the employer as well as employee) and we omit people who are freelancers in their main job. It is apparent that for each measure contract company employees are disadvantaged relative to standard employees. It is also notable that while contract company employees are worse off than standard employees on all dimensions they do receive orientation and workplace behavior training at relatively high rates. This is important to observe because it implies that the organization (the worksite) is aware of the contract company employees and is consciously making policy with respect to them.

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We now turn to the modeling and because the dependent variables are binary the equation is estimated via logit and the reported coefficients are the marginal effects estimated at the means for all variables. Table 10 provides outcomes for formal training in the previous twelve months and Table 11 includes orientation, workplace behavior training, and the educational benefit.

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For the orientation question we limit the sample to standard employees and contract company employees who have worked at the site for a year or less.

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For formal skills training the first column shows that with controls for personal characteristics contracting status is associated with reduced access. Additionally Hispanic ethnicity is associated with reduced training and the variable for being African-American is negative but not significant. This divergence between Hispanics and African-Americans reoccurs in many of the additional models below and is consistent with Pedulla (2020) who reported that African-Americans in temporary help jobs are advantaged relative to whites in receiving call backs for interviews for standard employment. As is the case in much of the training literature (Lynch and Black, 1998; Frazis, Gittleman, and Joyce, 2000; Lerman, McKernan, and Riegg, 2004) higher educational attainment is associated with more training.

In column two when the skill and occupation/industry controls are introduced the education variables lose their significance. The skill measure is positively related to training and this pattern will persist in all of the modeling we report below. The observation that people with more skill obtain more training is not necessarily causal—skill levels may be higher because of the training rather than the reverse—but the broader training literature suggests that firms prefer to invest in people who already have high levels of human capital. Hispanic status remains negative with respect to access to formal training and, again, this is a pattern that will persist in subsequent models. Finally, and of central interest here, the negative effect of contractor status persists and is not diminished in the face of these controls.

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The bottom line is that contractor status is associated with reduced access to formal training and this holds even after extensive controls. However a threat to the validity of this finding is if contract company employees, for whatever reason, do not seek out training and hence are less likely to receive it. This interpretation stands in contrast to the alternative view that contract company employees are offered fewer opportunities. The survey offers a strategy for sorting this out. Standard employees were asked "If it were possible would you like to receive additional training from your employer?" and contract company employees were asked the same question with reference to the site where they are assigned. Among standard employees 71.2 percent responded affirmatively while among contract company employees 53.2 percent did so. Although the gap is not wide it is possible that a selection effect is impacting the results for receipt of training. An additional related indicator of motivation is a battery of questions about whether in the previous twelve months the respondent sought out training on their own, not required by their employer, in one or more of several venues training. The venues were community colleges, proprietary schools, online programs, union provided training, and community training programs. Among contract company employees 21.1 percent said they had done so and among standard employees 18.7 percent responded affirmatively.

To test for whether these measures of what might be thought of as initiative or desire affect our results we re-estimated the full model for formal training including fixed effects for whether the respondent indicated an interest in more worksite training and whether they had sought out external training on their own. The results are shown in the last column of Table 10. As is apparent both measures are, as expected, positive and significant but they have no impact upon the probabilities that contract company employees receive formal training.

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A further concern might be that the causality runs from receipt of employer training to desire for more rather than, as we argue above, from desire for training to receipt. This could occur if people enjoy or benefit from training so much that they want more. To test for this we instrumented the two “desire” variables on the local unemployment rate, marital status, and whether or not the respondent knew someone who had lost their job recently. The results were unchanged.ⁱⁱ

We now turn to the personnel policy training variables: general orientation, workplace behavior training, and the availability of a paid tuition benefit. The results for the full models are shown in Table 11. Just as was true for formal skills training the coefficients on contractor status are negative for orientation and workplace behavior training. As seems reasonable, given the expectation that all standard employees are provided (or required to attend) the two forms of training, few of the other controls are significant. For the education benefit contractor status is also significantly negatively related to access but the magnitude of the effect is substantially larger than is the case for orientation and workplace behavior. Additionally access to the education benefit is negatively related to Hispanic and Asian ethnicities (though positively related to being African-American), negatively related to low levels of education and to part-time status, and positively related to higher levels of skill and to union coverage. In a sense this benefit seems limited to higher status employees both on the dimensions of skill but also, unfortunately, ascriptive characteristics. However with respect to our main storyline contract company employees are disadvantaged just as they are for the other measures of formal organizational training policy and in sum with respect to formal training of all varieties. It is clear that at their workplace contract company employees are excluded on average from the ILMs at their workplace and, in effect, the scope of those ILMs have shrunk.

Informal Training

As noted earlier, informal training represents a mixture of organizational policies and social relationships among the workforce. Certainly the organization can encourage informal training by asking one employee to show another how to do a task. But at the same time employees can make choices about whether to reach out to help someone as well as how responsive to be to organizational requests to help. As the headline of a Wall Street Journal story on the on the job experience of contract company employees noted “The work lives of contract company employees frequently feel like a series of tiny slights that reinforce their second-class status and bruise their self-worth. (Weber, 2017).”

Negative attitudes of standard employees towards contract company employees may result because they perceive them as a threat to their job security. Additionally failure to provide a full measure of informal training might result simply because contract company employees are not part of the social group and hence motivation to help them is lower. There is a relatively small but useful literature that originated and explored these ideas (for a review see Davis-Blake and Broschak, 2010) and the thrust of the literature suggests that these social relationships are important (Davis-Blake, Broschak, and George, 2003). As an example Pedulla (2013), utilizing matched employee-employer data, found that the use of temporary workers (but not freelancers or on-call employees) negatively impacted standard employee attitudes and the main mechanism was perceived threat to job security.

Our results for informal training are in Table 12. The first column contains just demographic variables, the second includes the set of skill and additional controls. We also include the two “desire” or “initiative” variables.

--Table 12 here--

While we know from the earlier descriptive table that contract company employees receive less informal training than do standard employees the pattern of the results here are different than for formal training and speak to the role of social or relational considerations. The negative impact of contract company employee status is smaller than is true for formal training policy and is eliminated when the controls are introduced. This is consistent with the idea that the workforce—standard and contractor—has agency and that in some settings contract company employees can reach out and standard employees are responsive to a meaningful degree. The patterns are consistent with an interpretation that higher skill standard employees feel either less threatened by contract company employees than do lower skill standard employees and/or they feel a greater sense of positive identification. The key factor that seems to drive this is the skill level of the job because the negative effect of contractor status loses significance when the skill scale is introduced and because, unlike the case of formal training, the education variables retain significance in the full model. All this said, the patterns regarding race and ethnicity do support the idea that social relationships are important when it comes to informal training but the nature of these patterns are concerning.

Training From The Legal Employer

We have focused on training provided to contract company employees at the site where they work. The rationale is twofold: training is of value to employees and if contract company employees receive less this is a problem parallel to that of wage penalties. The second rationale is that the extent of training at the site where the work is performed is informative about the trajectory of ILMs. However with respect to the first motivation, the economic welfare consequences of employment status, a complication is that the legal employer of contract

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company employees may also provide training and hence the skill training contract company employees receive is the sum of the two sources. In the survey 33.5 percent of contract company employees received skills training in the previous twelve months at the site where they were assigned whereas if both sources of training are considered then 46.7 percent received skills training in the previous twelve months. Clearly the gap with standard employees (of whom 59.0 percent received skills training in the previous twelve months) is narrowed albeit not eliminated.

In Table 13 we replicate the earlier results for formal training this time estimating a model in which the dependent variable is receipt of formal training either from the work site or from the legal employer (we ignore informal training because interactions among employees at the site of contracting firms themselves is minimal). The first column, including only demographic measures, demonstrates that even when both sources of training are considered contract company employees remain at a disadvantage albeit less than when only training at the worksite is considered. Additionally, parallel to the earlier patterns, college graduates are more likely to receive skills training whereas Hispanics are penalized. What changes from the earlier models is that when controls are introduced for the skill content of the work and the characteristics of the site where the work occurs then the contracting penalty is eliminated. Overall contracting company employees receive less formal skills training than standard employees even when both sources are considered and their personal characteristics are held constant but when the nature of their assignment is considered the penalty is erased. This is further evidence of heterogeneity within the category. This pattern is, however, overall cold comfort from a social welfare perspective given that disparities persist after holding constant education and that the ethnic penalty remains. And of course our earlier conclusions regarding ILM trajectory at worksites is unchanged.

--Table 13 here--

Discussion

We find, using an original survey, that 18.6 percent of the adult workforce is in non-standard employment in their main job and the largest component is the 10.8 percent who are contract company employees. Both of these estimates are new to the literature and the finding for contract company employees is particularly important because they have been substantially mismeasured and understudied to date. We model selection into contract company employment and demonstrate that groups who face labor market barriers are most likely to find themselves in that status.

With these incidence and selection findings in hand we turn to the implications of contract company employment for two outcomes, earnings and training. Both speak to the welfare consequences for employees of contract company status and training also provides insight into the trajectory of employer-employee relationships.

With respect to earnings we find that while on average, after human capital controls, contract company workers are at a disadvantage relative to standard employees nonetheless there is heterogeneity that is strongly related to the nature of the work skills that employees utilize. This heterogeneity requires that we bring to bear more texture in understanding why employers make use of contract work with the high end category most likely utilized because they possess scarce skills and can undertake work that is needed on an irregular basis (Abraham and Taylor, 1996; Erickcek, Houseman, and Kalleberg, 2003).

The emphasis on employer provided training is new to the literature on non-standard work. The central insight we offer is that access to training is a significant indicator for two reasons. First from the perspective of individuals training is an outcome, as demonstrated in an extensive literature, that pays off in terms of earnings and career growth. As such it is a complement to earnings as an outcome and in some ways it is a more fundamental since low wage occupations can lead to high quality careers if the firm in which they are situated offers training and growth opportunities.

The second advantage of a focus on training is that it helps understand the changing nature of Internal Labor Markets, a trend that has been widely observed (Cobb and Lin 2017; Denker and Fang, 2016; Hollister, 2004; Cappelli, 1999; Bidwell, Briscoe, Fernandez-Mateo and Sterling 2013). Although there is considerable variation in the literature regarding the origins and nature of ILMs virtually all schools of thought view training as a core feature and scholars interested in ILMs have utilized measures of training as indicators of the presence of ILMs or of their demise (Baron and Davis-Blake, and Bielby, 1986; Knoke and Kalleberg, 1994). Training provision has always been an important component of ILMs in part because in traditional ILMs firms hired people who had learned general skills elsewhere but then provided firm specific training in order to "grow their own" workforce. Additionally career ladders associated with ILMs rely on both formal and informal training to enable people to move up. If a substantial portion of the workforce producing any given product or service is excluded from the organization's training system, and by implication its ILM, this speaks to a reduced ambit for ILMs and traditional employer-employee relationships.

This paper also addresses a measurement challenge in the prior literature on the evolution of ILMs. Recent empirical work regarding the possible demise of ILMs has utilized

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the Current Population Survey to examine how wage structures have shifted and how the large firm premium diminished (Cobb and Lin, 2017; Hollister 2004). However these studies are constrained by the quality of the data given that the CPS does not distinguish between contract company employees and standard employees. A contractor answering a question about the industry where she works or any other characteristic of her job likely refers to her worksite (National Academy, 2020) so any analysis of ILM features based on industry or occupation as measured in the CPS mixes contract company employees and standard employees. Hence because researchers cannot distinguish between contract company employees and standard employees they can only speculate about the impact of non-standard work.

In studying training we moved beyond what is typical in the training literature and disaggregate formal training into orientation, workplace behavior, skills training, and tuition benefits. We also ask about informal training which is partly policy driven but which also has a significant social component.

We find that for all measures of formal training contract company employees receive less than do standard employees and that this disadvantage persists in the face of a substantial set of controls for education, the job's skill requirements, and occupation as well as indicators of motivation. It is also notable that while contract company employees are worse off than standard employees on all dimensions they do receive orientation and workplace behavior training at relatively high rates. This is important to observe because it implies that the organization (the worksite) is aware of the contract company employees and is consciously making policy with respect to them.

Informal training is likely to differ because of its social nature. Many accounts of ILMs have emphasized the role of workgroups and social relationships and, as we have indicated,

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previous scholars of temporary work have studied the interactions of the standard and the non-standard workforce (Davis-Blake and Broschak, 2010; Pedulla, 2013). Indeed, the disadvantage faced by contract company employees is muted and our initiative variables play a more important role in moderating the impact of contract employee status.

We find that race and ethnicity play a role in determining who enters into contract work and these also prove important for informal training. Most strikingly the significance of racial differentials with respect to informal training adds to the literature (Small and Pager, 2020; Storer, Schneider, and Harknett, 2020) that demonstrates that racial attitudes are carried over into the workplace.

Finally we address two additional complications. First we observe that contract company employees may also receive training from their legal employer as well as from the site where they are assigned. This additional training does not affect our conclusions regarding the trajectory of ILMs but it does narrow the gap with standard employees and has economic welfare implications. This pattern also reinforces the observation from the earnings patterns regarding heterogeneity within the category. However even so the training gap persists after controls for demographic and educational variables.

Our focus on ILMs and training connects to but is also distinct from two other important frameworks, precarity and fissuring, for thinking about the evolution of employment. Precariousness (Kalleberg, 2009; Kalleberg and Vallas, 2018) refers to a broad range of insecurities and contingencies which have increased for employees. Scheduling variability (Storer, Schneider, and Harknett, 2020; Lambert, 2008), low pay, and insecure employment are examples of concerns that fall under the rubric of precarity. The contrast between this idea and non-standard work is, as others have pointed out (Smith, 1997; Cappelli and Keller, 2013;

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National Academy, 2020), that a great deal of standard work is also precarious along various dimensions. On the flip side a subset of contract company employee may have a long term well paid relationship with the contracting firm and hence not be in a precarious situation.

This said it seems clear that the concepts are complementary given that contract company work, while certainly heterogeneous, is more precarious on average than standard work. On average contracting represents a disadvantage relative to standard work. Earnings are lower and access to training is reduced. On the standard five point scale of job satisfaction 30.2 percent of contract company employees report themselves as very satisfied compared to 41.5 of standard employees and 42.7 percent of main job freelancers.

A second broad and important concept, fissuring (Weill, 2014), refers to changes in the organizational structure of employment. Contract company employment is consistent with fissuring but the idea also incorporates practices such as franchising or physically outsourcing activities (such as shifting IT tasks to the Amazon Cloud). These developments are certainly important for understanding the evolution of the labor market but are outside the concept of contract company employment. As is true for precariousness contract company employment may be a component of fissuring but is not coterminous with the idea.

Conclusion

The research presented here has moved us forward in our understanding of non-standard work, both with respect to measurement and consequences. Nevertheless one concern might be that the survey while large with respect to much of the literature is much smaller than the Contingent Worker Survey. Improvements of the sort suggested by the National Academy of Sciences (2020) will eventually provide more reliable measures of incidence however for now this survey offers the best available estimates of incidence. Nonetheless even with

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improvements in measurement the CWS will be ill suited for the kind of organizational analysis undertaken here and by other scholars in the literature. Because the CWS is a component of the Current Population Survey it will not provide rich measures of job characteristics, skill requirements, and outcomes along multiple dimensions.

Related to the data issues is the fact that the present survey is cross-sectional and hence limits opportunities for longitudinal assessments. However another feature of the survey is that it was collected in January, 2020 just prior to the COVID crisis. The advantage of this is that it captures the “normal” labor market prior to the COVID emergency and, importantly, because NORC can recontact respondents, it will be possible to relate pre-COVID employment circumstances to post-COVID outcomes.

Additionally while we have addressed the fraying of internal labor markets it is also true that other developments outside the scope that we have established speak to that question. A particular concern is outsourcing as emphasized in the fissuring literature (Weil, 2014). Put concretely, if a hotel brings in contract company employees to do the laundry we have captured this but if it send the laundry out to another location to be done by another firm we have not. It is possible that the jobs at this outside firm are good ones and not problematic and this might the case with firms that outsource some of their IT to cloud computing but it seems unlikely in the case of laundry. This is a topic that needs more work. We have also paid limited attention to some employment arrangements, such as part-time work or on-call work which are standard as we have defined the term but are still important to study.

Finally there is an active public policy discussion regarding non-standard jobs. Important themes include mis-classification, the importance of portable benefits, and joint employer responsibility (i.e. whether the host firm should bear some responsibility for

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employment standards of contract company employees and freelancers). It is worth observing that the heterogeneity document in earnings and training complicates public policy efforts to address issues such as joint employment because there is variation in the interests of both the workforce and the organizations that utilize them. Nonetheless the evidence in this paper suggests that the scope of non-standard employment is substantial and that these public policy questions are indeed important.

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Table 1: Sample and Benchmark

	2019 Census ORG Age 24-64, Employed	Survey Unweighted	Survey Weighted
Percent women	46.9%	43.2%	47.4%
Mean age	42.7	42.4	42.8
Percent White	61.5%	61.4%	61.7%
Percent African-American	11.7%	11.8%	11.6%
Percent Hispanic	17.6%	17.7%	17.5%
Percent Asian	7.0%	4.5%	3.8%
Percent less than high school	5.6%	2.9%	5.1%
Percent High school only	26.1%	22.7%	31.7%
Percent Some College	26.5%	25.5%	21.3%
Percent College Degree	41.6%	48.9%	41.9%

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Table 2: Means and Standard Deviations

	Mean	Standard Deviation
Contractor	.108	.310
Freelancer first job	.077	.267
Traditional self-employed	.034	.182
Formal training	.549	.497
Orientation	.758	.427
Workplace behavior training	.757	.428
Tuition benefit	.324	.468
Informal training	.485	.499
Gender (1=woman)	.474	.499
Age	42.84	11.65
Experience (age-years of education-6)	22.8	11.9
High School or Less	.370	.483
College Degree	.419	.493
Married or partnered	.615	.486
African-American	.116	.321
Hispanic	.175	.380
Asian	.038	.193
Skill scale	4.09	2.03
Physical work	.404	.490
Tenure1: 1 Year or less	.174	.379
Tenure2: more than one year, less than two	.123	.328
Tenure3: more than two years, less than five	.225	.417
Tenure4: more than five years, less than ten	.170	.376
Tenure5: ten years or more	.304	.460
Part time	.179	.383
Union coverage	.156	.363
Unemp: U-6 rate	.069	.164
Initiative: want more	.645	.478
Initiative: sought out training past year	.195	.396
Usual hours	37.56	10.19
Annual weeks worked	45.00	13.53
Total annual earnings	\$51,726	\$38,193

Table 3: Percent of Workforce In Each Employment Status

	PERCENTAGE OF WORKFORCE WHOSE MAIN JOB IS
Standard	81.4%
Freelance	7.7%
Contractor	10.8%
Temp in main job	2.1%
Gig in Main job	0.9%
Percent traditional self-employed in main job	
Percent standard in main job, who are freelancers in second job	5.7%

Source: American training survey.

Traditional self-employed are included in this table as standard employees. Temp jobs are a subset of contract company employees who are assigned to their worksite for a month or less. Gig workers are a subset of freelancers who obtain their work via an online platform.

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Table 4 : Occupational Distribution of Standard and Contract Company Employees

	Standard Employees		Contract Company Employee
Management	11.9%		4.6%
Computers and Engineering	9.4		6.9
Science	0.7		0.8
Legal and Professional	0.9		0.8
Social Services	2.0		1.3
Education	11.1		9.8
Arts and Entertainment	1.2		2.0
Health Practitioner	6.1		3.2
Health Support	5.1		8.2
Protective Services	2.4		7.7
Food and Accommodations	5.1		7.6
Buildings and Grounds	1.5		3.1
Personal Services	3.5		4.4
Sales	10.1		7.2
Office Administration	10.2		5.7
Construction	1.5		6.9
Production and Installation	12.2		14.0
Transportation	4.5		5.0

Source: American Training Survey. First job freelancers excluded.

Table 5: Characteristics of Each Employment Status

	Standard in main job	Freelancers In main job	Contract Company Employee in main job
Women	48.7%	45.3%	39.1%
Men	51.3%	54.7%	60.8%
Whites	64.3%	65.9%	39.3%
African-Americans	11.1%	7.7%	18.3%
Hispanics	15.6%	16.6%	32.3%
Asians	3.9%	4.2%	3.3%
High school or less	35.0%	37.5%	52.5%
Some College	21.4%	21.2%	15.1%
College degree	43.4%	41.3%	31.3%
Age 35 or younger	32.0%	26.1%	46.3%
Age 50 or older	33.5%	43.1%	18.3%

Source: The American Training Survey. Traditional self-employed are included as standard employees

Table 6: Selection Models: Main Job

	Standard	Freelance	Contract Company Employee
Female	.039** (.013)	-.005 (.009)	-.033** (.009)
Age 35-44	.007 (.016)	-.002 (.013)	-.004 (.011)
Age 45-54	.017 (.017)	.026** (.012)	-.043 (.013)
Age 55-64	-.011 (.018)	.057*** (.012)	-.046** (.014)
High School or Less	-.045** (.016)	-.004 (.012)	.050*** (.012)
College Degree	.004 (.015)	-.005 (.010)	.0009 (.012)
African-American	-.072** (.019)	-.005 (.015)	.078 (.013)
Hispanic	-.084** (.016)	-.007 (.013)	.091 (.010)
Asian	-.028 (.030)	-.0004 (.022)	.028 (.022)
Married or partnered	-.0001 (.012)	-.003 (.009)	.003 (.009)
Unemployment rate	-.008** (.004)	.0002 (.002)	.008 (.003)
N	3,522		
Log likelihood	-2044.175		
Pseudo R2	.041		

Source: American Training Survey. Multinomial logit. Traditional self-employed excluded. The base status is a standard job. Coefficients are marginal impacts at the means for all variables. Standard errors in parentheses. *p<.10 **p<.05 ***p<.01

Table 7: Total Annual Earnings

Contractor	-.067* (.035)	-.021 (.034)
Experience	.007** (.001)	.006** (.0009)
High school or less	-.115** (.034)	-.051 (.033)
College Degree	.375 ** (.030)	.277 ** (.030)
Female	-.232** (.023)	-.243 ** (.022)
African-American	-.187** (.035)	-.147 ** (.034)
Hispanic	-.102 ** (.030)	-.082 ** (.029)
Asian	.187** (.054)	.148 ** (.052)
Skill scale	--	.080 ** (.006)
Physical work	--	-.150 ** (.023)
Usual hours	.031 ** (.001)	.027 ** (.001)
Annual weeks worked	.018 ** (.0009)	.017 ** (.0008)
Constant	8.422** (.070)	8.389 ** (.070)
R-squared	.472	.511
F	F(10, 2817) = 252.75	F(12, 2815) = 245.88
N	2,828	2,828

Source: American Training Survey. Dependent variable is ln(total annual earnings).

Ordinary Least Squares. Standard errors in parentheses. Freelancers and traditional self-employed excluded

*p<.10 **p<.05 ***p<.01

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Table 8: Total Annual Earnings
Contract Company Employees Only

Experience	.0006 (.003)
High school or less	.074 (.111)
College Degree	.387 ** (.108)
Female	-.257 ** (.078)
African-American	-.207 * (.106)
Hispanic	-.019 (.086)
Asian	.149 (.176)
Skill Scale	.058 ** (.017)
Physical Work	-.193 ** (.074)
Usual Hours	.025 ** (.003)
Annual weeks	.014 ** (.002)
Constant	8.633 ** (.204)
R-squared	.465
F	F(11, 308) = 24.41
N	320

Source: American Training Survey. Dependent variable is $\ln(\text{total annual earnings})$.
Ordinary Least Squares. Sample limited to contractors. Standard errors in parentheses.
* $p < .10$ ** $p < .05$ *** $p < .01$

Table 9: Access to Worksite Training: Standard Employees and Contract Company Employees

	Standard Employee	Contract Company Employees
Further skills training past 12 months	59.0%	33.5%
Informal training past 12 months	51.0%	35.1%
General orientation training, (employed/ worked at the site one year or less)	75.9%	64.3%
Workplace behavior training,	74.6%	62.6%
Education tuition benefit currently available to respondent	35.9%	13.5%

Source: American Training Survey. First job freelancers and traditional self-employed excluded. For those who have multiple jobs the data refers to their first or main job.

Table 10: Formal worksite skills training

Contractor	-.186*** (.028)	-.134 *** (.030)	-.137*** (.031)
Gender (1=woman)	-.017 (.018)	-.017 (.021)	-.022 (.021)
Age	.0001 (.0008)	-.0007 (.0008)	-.0002 (.0008)
High School or Less	-.045* (.024)	.0004 (.026)	.003 (.026)
College Degree	.069*** (.021)	.015 (.024)	.015 (.024)
African-American	-.036 (.027)	-.018 (.029)	-.026 (.030)
Hispanic	-.101*** (.023)	-.088*** (.025)	-.090*** (.025)
Asian	-.045 (.043)	-.053 (.046)	-.063 (.046)
Skill scale		.042*** (.005)	.038*** (.005)
Physical work		-.025 (.022)	-.031 (.022)
Part time		-.018 (.027)	-.013 (.027)
Union coverage		.108 *** (.027)	.104*** (.027)
Specific industry		.126*** (.024)	.114*** (.024)
Specific anywhere		-.028 (.020)	-.037 (.021)
Initiative: want more			.062 ** (.020)
Initiative: sought out training			.144*** (.024)
Occupation fixed effects	no	Yes	Yes
Industry Fixed effects	no	Yes	yes
N	3,229	3,193	3,169
Log likelihood	-2133.112	-1987.272	-1951.093
Pseudo R2	.027	.082	.092

Source: American Training Survey. Logit models. Traditional self-employed and freelancers excluded. Coefficients are marginal impacts at the means for all variables. Standard errors in parentheses. *p<.10 **p<.05 ***p<.01

Table 11: Additional Worksite Organizational Policy Training Outcomes

	Behavior	Educational Benefit	Orientation
Contractor	-.064** (.021)	-.229*** (.036)	-.030 (.034)
Gender (1=woman)	-.014 (.016)	.006 (.020)	-.016 (.035)
Age	.0009 (.0006)	.001 ** (.0008)	-.0001 (.001)
High School or Less	-.010 (.019)	-.091 *** (.027)	.019 (.042)
College Degree	.016 (.018)	.034 (.023)	.057 (.041)
African-American	.034 (.023)	.059** (.028)	-.001 (.040)
Hispanic	-.002 (.018)	-.044* (.025)	.0008 (.038)
Asian	.008 (.036)	-.069* (.043)	-.037 (.074)
Skill scale	.024*** (.004)	.032*** (.005)	.007 (.008)
Physical work	-.001 (.016)	-.012 (.021)	.048 (.035)
Part time	-.047** (.019)	-.153*** (.030)	-.002 (.039)
Union coverage	.147 (.024)	.107*** (.025)	.006 (.046)
Specific industry	.063*** (.017)	.063** (.024)	.091** (.036)
Specific anywhere	.0242 (.016)	.039* (.019)	-.041 (.034)
Occupation fixed effects	Yes	Yes	Yes
Industry Fixed effects	Yes	yes	Yes
N	3,184	3,186	840
Log likelihood	-1513.980	-1857.350	-453.908
Pseudo R2	.090	.117	.068

Source: American Training Survey. Logit models. Traditional self-employed and freelancers excluded. For orientation the sample is limited to people hired or assigned to site in the past year. Coefficients are marginal impacts at the means for all variables. Standard errors in parentheses. *p<.10 **p<.05 ***p<.01

Table 12: Informal Worksite Training

Contractor	-.069** (.029)	-.009 (.032)
Gender (1=woman)	-.011 (.018)	-.006 (.022)
Age	-.001* (.0008)	-.001 (.0009)
High School or Less	-.085*** (.025)	-.049* (.027)
College Degree	.136*** (.021)	.078** (.024)
African-American	-.060** (.028)	-.042 (.031)
Hispanic	-.093*** (.024)	-.091*** (.026)
Asian	-.079 (.044)	-.111** (.047)
Skill scale		.028*** (.005)
Physical work		-.007 (.022)
Part time		.021 (.029)
Union coverage		-.0001 (.028)
Specific industry		.134*** (.025)
Specific anywhere		-.007 (.021)
Initiative: want more		.181*** (.021)
Initiative: sought out training		.136*** (.024)
Occupation fixed effects	no	yes
Industry Fixed effects	no	yes
N	3,221	3,161
Log likelihood	-2152.773	-1978.412
Pseudo R2	.034	.096

Source: American Training Survey. Logit models. Traditional self-employed and freelancers excluded. . Coefficients are marginal impacts at the means for all variables. Standard errors in parentheses. *p<.10 **p<.05 ***p<.01

Table13:Formal Skills Training All Employer Sources Including Legal Employer

Contractor	-.058** (.027)	.005 (.030)
Gender (1=woman)	-.020 (.018)	-.024 (.021)
Age	-.0002 (.0008)	-.0007 (.0008)
High School or Less	-.035 (.024)	.015 (.026)
College Degree	.074*** (.021)	.021 (.024)
African-American	-.038 (.027)	-.029 (.029)
Hispanic	-.091*** (.023)	-.078 ** (.025)
Asian	-.046 (.043)	-.065 (.045)
Skill scale		.036*** (.005)
Physical work		-.028 (.021)
Part time		-.013 (.027)
Union coverage		.105*** (.027)
Specific industry		.111 *** (.024)
Specific anywhere		-.032 (.020)
Initiative: want more		.057 ** (.020)
Initiative: sought out training		.138*** (.024)
Occupation fixed effects	No	Yes
Industry Fixed effects	No	yes
N	3,229	3,169
Log likelihood	-2143.396	-1964.906
Pseudo R2	.014	.079

Source: American Training Survey. Logit models. Traditional self-employed and freelancers excluded. . Dependent variation is formal training from either worksite or legal employer. Coefficients are marginal impacts at the means for all variables. Standard errors in parentheses. *p<.10 **p<.05 ***p<.01

Appendix

The Survey

NORC describes the survey as follows: "Funded and operated by NORC at the University of Chicago, **AmeriSpeak®** is a probability-based panel designed to be representative of the US household population. Randomly selected US households are sampled using area probability and address-based sampling, with a known, non- zero probability of selection from the NORC National Sample Frame. These sampled households are then contacted by US mail, telephone, and field interviewers (face to face). The panel provides sample coverage of approximately 97% of the U.S. household population. Those excluded from the sample include people with P.O. Box only addresses, some addresses not listed in the USPS Delivery Sequence File, and some newly constructed dwellings. While most AmeriSpeak households participate in surveys by web, non-internet households can participate in AmeriSpeak surveys by telephone. Households without conventional internet access but having web access via smartphones are allowed to participate in AmeriSpeak surveys by web." [https://amerispeak.norc.org/about-amerispeak/Pages/default.asp%](https://amerispeak.norc.org/about-amerispeak/Pages/default.asp%0)

The Survey Questions Defining Standard, Contractor, and Freelance Jobs

For the main job the first step was asking:

Most people's job falls into one of two buckets. Please read these definitions carefully to see which one applies to your main job, i.e. the job in which you spend the most time.

Employee: You work for an employer who takes taxes out of your pay

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Self-employed: This means working for your own business such as a store or company that you own. This also means working as a freelancer or as an independent contractor. Self-employment also includes doing farm work, or raising livestock for either your own or your family's ranch, or commercial fishing.

Then, if people described themselves as an employee they were asked:

However some employees are contract company employees This means you work for a firm that pays you and takes taxes out of your pay, but the firm assigns you to work at the location of another organization. You could be assigned to that location either briefly or for a long time, but your paycheck comes from the firm that gives you work assignments and takes your taxes from your pay and not from the organization where you work Based on this description, are you a contract company employee.

If people described themselves as self-employed in the opening question they were asked:

Do you consider yourself a freelancer or independent contractor? Some freelancers obtain customers on their own or maybe by an online app. It may also mean working on an individual contract basis for an organization. A key to work as a freelancer or independent contractor is that whoever hires you for work does not take out your taxes when paying you and does not consider you to be a regular employee. Although many examples might have you working in multiple locations, it is possible to be hired and work in one location regularly. Based on this description are you a freelancer?

This sequence was repeated for a second job if people reported having one.

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ⁱNORC describes the survey as follows: "Funded and operated by NORC at the University of Chicago, **AmeriSpeak**[®] is a probability-based panel designed to be representative of the US household population. Randomly selected US households are sampled using area probability and address-based sampling, with a known, non- zero probability of selection from the NORC National Sample Frame. These sampled households are then contacted by US mail, telephone, and field interviewers (face to face). The panel provides sample coverage of approximately 97% of the U.S. household population. Those excluded from the sample include people with P.O. Box only addresses, some addresses not listed in the USPS Delivery Sequence File, and some newly constructed dwellings. While most AmeriSpeak households participate in surveys by web, non-internet households can participate in AmeriSpeak surveys by telephone. Households without conventional internet access but having web access via smartphones are allowed to participate in AmeriSpeak surveys by web." <https://amerispeak.norc.org/about-amerispeak/Pages/default.asp%>

ⁱⁱ In a two stage least squares linear model in which desire1 is instrumented the coefficient on contractor status is minus .127(.051) and in which desire2 is instrumented minus .165(.030).