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ABSTRACT

Do Female–Owned Employment Agencies Mitigate Discrimination and Expand Opportunity for Women?*

We create a dataset of 14,000 hand-coded help-wanted advertisements placed by employment agencies in three U.S. newspapers in 1950 and 1960, a time when help-wanted advertisements were divided into male and female sections, and collect information on agency ownership. We find that female-owned agencies specialized in vacancies for women, thereby expanding the access of female jobseekers to agency services, including for positions in majority-male occupations. Female-owned agencies advertised more skilled occupations to women than did male-owned agencies, leading to a 5.5% higher wage for women. On the other hand, female-owned agencies had a greater propensity to match male jobseekers to clerical jobs, contributing to 21% lower male wages than for male-owned agencies. The results are consistent with female proprietors having had a comparative advantage in female jobseekers and clerical occupations or with client firms having trusted female proprietors only with vacancies for women and homogeneous, lower-skill occupations. However, in choosing to establish an agency and to specialize in female jobseekers, female proprietors may have sought to mitigate employer discrimination against female jobseekers; their higher propensity to advertise majority-male occupations among professional, technical and managerial advertisements for women may also reflect discrimination mitigation.

JEL Classification: N12, J63, J16

Keywords: job matching, discrimination, gender, employment agencies

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In the twenty years following the Second World War, many private employment agencies in the United States were owned by women, and the number grew as the overall market for employment agencies grew. At this time, it was both legal and standard to specify the desired gender of the job applicant. In such an environment, the study of help-wanted advertisements is an appealing way to study discrimination against female jobseekers, and a number of papers has done so with recent data from outside the United States. One important finding is that prohibiting gender requirements in advertisements leads to more gender integration in hiring.¹

We add a new dimension to this literature by examining help-wanted advertisements posted by employment agencies and assessing whether female-owned agencies are able to mitigate discrimination and increase opportunity for female jobseekers. In this setting, the interactions between employer and agency and between agency and jobseeker mediate any hiring discrimination the employer wishes to practice. Female-owned agencies might mitigate discrimination against female jobseekers simply by providing more placement services to female jobseekers, which should at a minimum reduce search time, or by providing them with better placement services, which could increase their job quality. Employer and jobseeker agency choice should be influenced by agencies' comparative advantage in identifying suitable jobseekers for referral, but could also be affected by their prejudice or preferences concerning female proprietors.

The process by which women and men are matched to jobs is important not only for equity reasons, but because good worker-employer matches are an important component of productivity. Intermediaries such as private employment agencies have the potential to improve the quality and speed of matches. Through their experience with large numbers of jobseekers, vacancies and employers, they learn about market conditions, jobseekers available for a particular vacancy, vacancies available for a particular jobseeker, and hence potential matches and their associated wages.² The rise of online job boards was supposed to have heralded the demise of intermediaries. However, private employment agencies continue to operate, and recruitment services and intermediaries have emerged within online job boards (Davis and de la Parra 2024). Yet there is little research on private intermediaries with the exception of private subcontractors for public

¹ Card, Colella and Lalive (forthcoming) show this for post-2005 Austria, Kuhn and Shen (2021) for China when an online job board removed gender from advertisements. Kuhn and Shen (2012) find that Chinese employers specify gender based on customer discrimination and social perceptions. See also Hellester, Kuhn and Shen (2020) and Kuhn Shen and Zhang (2020). Severson (1939) examined the incidence of discrimination against Jews and Catholics in help-wanted advertisements in the *Chicago Tribune* from 1872-1937, noting that discrimination was much higher among female advertisements.

² See Davis and de la Parra (2024) and articles cited there.

placement services. A better understanding of private employment agencies is therefore one of the contributions of this paper.³

We have hand coded 25,000 help-wanted advertisements from the *New York Times*, the *Washington Post* and the *Baltimore Sun* in 1950 and 1960, and in this paper we concentrate on the 14,000 advertisements posted by 366 employment agencies. We have collected the ownership type of each agency, and the owners' names for sole proprietorships and partnerships. Female ownership is relatively common: 21% of our advertisements are posted by female-owned agencies representing 31% of agency-year pairs (some agencies change ownership), while 38% of advertisements are posted by male-owned agencies representing 37% of agency-year pairs. The remaining agencies are predominantly corporations. Most of these agencies primarily sought permanent placements for workers while a few specialized in temporary jobs. The agencies operated in the context of an increase in the national female labor force participation from 33.8% in 1950 to 37.8% in 1960 and unemployment rates of 5.2% in 1950 and 5.5% in 1960.⁴

We do find that female-owned agencies offered women opportunities they would not have had in the absence of these agencies. They specialized in vacancies for women (61% of their advertisements compared to 32% for male-owned agencies), and had they not existed, all else equal 31% of women who found their job through an agency would have had to search without the help of agency services. If the agencies had instead been owned by men and remained the same size, the fraction of agency ads for females would have decreased by $(.21)(.61-.32)=6$ percentage points. Since 42% of the agency posted jobs were for females, this loss imply that $(.06)/(.42)=14\%$ of female jobseekers would have lost access to agency services. The specialization in vacancies for women was accomplished by considerable specialization in clerical occupations, but also by advertising for 12–23 percentage points more women than male-owned agencies within each major aggregate occupational category, and 7 percentage points more women even within detailed occupations. The specialization in vacancies for women meant female-owned agencies also

³ Stanton and Thomas (2016) find that intermediaries on a spot contract online platform raise job-finding rates and wages of inexperienced, high-quality workers. Studies of the effect of public employment agencies and unemployment durations are numerous and include Gregg and Wadsworth (1996) for the U.K. Behaghel et al. (2013), Carcagno, Cecil and Ohls (1982) and Georges (2007) examine subcontracting of public services for the unemployed and Kuhn and Skuterud (2004, 2014) investigate online job search, albeit without considering intermediaries. Clark (1981) estimates a cost function with 1976 data for a private employment franchise. We cite an older literature on U.S. private employment agencies in the next section.

⁴ Statistics for ages 16 and older. See <https://fred.stlouisfed.org/series/LNS11300002> for the labor force participation rate and <https://fred.stlouisfed.org/series/UNRATE> for the unemployment rate, accessed February 13, 2024.

expanded services to female jobseekers for positions in majority–male professional, technical and managerial occupations, which would have had better career prospects. And it is important to note that female owners also afforded themselves the opportunity to work in a majority–male occupation.

In addition to expanding the quantity of matching services for women, female–owned agencies also advertised better quality jobs to women than did male–owned agencies. Although somewhat specialized overall in clerical occupations, among vacancies for women they advertised a 15 percentage point higher share in professional, technical and managerial occupations than did male–owned agencies. For these vacancies, they were 10 percentage points more likely to advertise majority–male occupations to women than male–owned agencies (significant at the 10% level). Overall, female–owned agencies paid a wage premium of 5.5%, due in large part to a more lucrative mix of aggregate occupations as well as detailed occupations within aggregate occupations. Smaller contributing factors were job requirements with a higher return and a lower share of trainees.

Most female–owned agencies also posted advertisements aimed at male jobseekers. Female–owned agencies’ specialization in clerical vacancies was associated with a higher share of their male advertisements being in clerical occupations compared to male–owned agencies, which contributed to wages in male advertisements being 21% lower in our preferred estimates than for advertisements posted by male–owned agencies. The mix of detailed occupations and other (non–wage) advertisement characteristics explained the rest of the gap. Among clerical job advertisements, there was no female–owned agency wage disadvantage.

The establishment of the female agencies may have reflected in part a general practice of minorities escaping discrimination by setting up their own firm either to employ members of their minority (including themselves) or to serve customers from their minority.⁵ At least one female proprietor was pushed to start her own agency after herself encountering difficulties returning to the labor market. She took a particular interest in mature women returning to the labor market, jobseekers considered difficult to place.⁶ If widespread, such a motivation could explain a specialization in vacancies for women. However, other narratives we have found suggest alternative motivations for women founding agencies. One other female proprietor was motivated by a business opportunity unrelated to gender, and another, in a slightly later period, viewed her agency’s main contribution

⁵ For example, Wald (2008) describes the emergence of Jewish law firms in New York City in response to anti–semitism, while Halperin (2012) describes the founding of Jewish hospitals in the United States.

⁶ *New York Times* (1955).

as helping employers find scarce administrative workers.⁷

The occupation specialization results for female advertisements could also be a response to discrimination, with female agency proprietors mitigating sexism on the part of employers. Male owners might underestimate female jobseekers due to prejudice or ignorance while female owners might recognize their true potential and be able to influence employers or identify employers with similar views. This would lead to the hiring of more women through female-owned than male-owned employment agencies and in more skilled occupations, both of which we observe. Client firms did seek guidance from employment agencies on what wage to pay, which might have influenced other firm decisions, such as the gender of the hire.⁸ Discrimination theory predicts that if employers are profit-maximizing, any occupational upgrade would not be accompanied by a wage increase, as employers would seek to benefit from paying the discriminatory wage. This we do not observe.⁹

We believe that theories focusing on comparative advantage or preferences of client firms better encompass the results for both male and female advertisements. Female owners may have had a comparative advantage in female jobseekers and/or clerical occupations. This could be due to skills and abilities they already had when opening or buying their agency: they and any staff they hire might be better able to assess the skills and qualities of female jobseekers, or their prior experience in personnel, as an employee at an agency or in a regular job might give them more insight into clerical occupations. Alternatively, female owners might have developed such a comparative advantage after founding an agency: female jobseekers may have been attracted to female-owned agencies because they were taken more seriously and treated with more respect than at male agencies. Female jobseekers may have even more to fear than disrespect: New York City banned sofas in employment agencies the fear of jobseeker seduction.¹⁰ Given such comparative advantage, client firms would have known to direct their female vacancies and clerical vacancies for either men or women to female-owned agencies.

The equilibrium we observe could instead originate with employers, rather than with

⁷ *Christian Science Monitor* (1940) and authors' interview of 1970s employment agency owner.

⁸ *New York Times* (1951). A former employment agency owner who began in the industry in 1976 told us that client firms chose wages and other conditions, but that the agency would tell firms wages these were out of line with the market as evidenced by wages for their similar vacancies.

⁹ Becker (1957). Black and Strahan (2001) show empirically that competition influences discrimination. The empirical discrimination literature has not always found Black people and women to discriminate less against Black people and women respectively. See Ayres and Siegelman (1995) for car salespeople and Edelman, Luca and Svirsky (2017) for Airbnb hosts. Not all hiring discrimination disfavors women: Neumark, Bank and Van Nort (1996) finds men are disfavored for low-wage jobs.

¹⁰ New York Court of Appeals Records (1939).

agencies or jobseekers. Client firms, predominantly run by men, might not trust female-run agencies with the search for more skilled workers in occupations requiring a bundle of skills that are possibly scarcer and harder to measure. They might only entrust female-owned agencies with lower-skill occupations typically filled by homogeneous women or trainee men. The result of this could be that female owners develop a comparative advantage in these vacancies, or simply that female owners are limited to these vacancies despite having no comparative advantage in them. The small size of female-owned agencies and the fact that the small size is almost entirely due to having fewer male advertisements is consistent with the latter explanation, though also with a combination of female proprietor preferences for matching women and greater difficulties in raising capital.

We conduct further analysis to distinguish among these possibilities. A testable implication of female proprietors' influencing advertisement content to favor women and disfavor men is that the agency differences in male and female wages and in the probabilities of posting a vacancy in a majority-male occupation should remain using only within-agency variation based on pooled male and female vacancies. Overall, we find that most (for majority-male occupations) or all (for wages, in our preferred specifications) variation is between agencies, lending credence to theories of comparative advantage or discrimination by client firms. However, we do find that female agencies' higher propensity to advertise majority-male occupations among professional, technical and managerial advertisements to women stems from within agency variation, leaving some role for discrimination mitigation.

1 Background

Prior to the Civil Rights Act of 1964, it was not only legal but standard for firms posting help-wanted advertisements to specify the desired gender of the applicant. In newspapers with large help-wanted sections, there were separate male and female sections. Employers open to applications from either gender could note this in the advertisement and/or post separate advertisements in the male and female sections. However, an advertisement posted in only one section stating that both men and women could apply would be unlikely to be seen by jobseekers of both genders.¹¹

In the newspapers we analyze, many help-wanted advertisements were placed by em-

¹¹ This is presumably a reason why newspapers helped delay the implementation of the Civil Rights Act's help-wanted provisions on gender until 1973. See Pedriana and Abraham (2006) for other explanations.

ployment agencies. These advertisements specified occupation, wage or wage range and frequently worker skills or attributes, but never the ultimate employer and rarely the industry. The agencies in our sample generally advertised permanent white collar jobs of all types, but some agencies specialized in certain industries or occupations. For example, agencies specializing in medical placements might place both secretaries and doctors for the industry, while engineering agencies would advertise only for engineers. Some agencies specialized in laborers and operatives, but these did not typically place help-wanted advertisements, instead relying on jobseekers visiting the agency office.¹² Employment agencies were variously sole proprietorships (which could have more than one owner), partnerships, corporations (including regional or national franchise chains), public entities or non-profit corporations.

Agencies serving white-collar workers did not rely entirely on help-wanted advertisements for filling vacancies, but rather did considerable business from jobseekers' visiting the office: agencies selected particularly attractive vacancies to advertise in the newspaper, hoping to draw jobseekers to the agency without having to pay to advertise all vacancies. Beyond help-wanted advertisements, agencies publicized themselves (to firms as well as jobseekers) with the sign on the building, their listing in the city business directory, newspaper and yellow-pages advertisements, and word of mouth. To further increase foot traffic, agencies clustered near major subway stops and near one another, often in the same building: one set of agencies advertised their building, vaunting its large number of agencies. Employment agencies actively established relationships with client firms by cold calling or by using prior contacts: some former agency employees took client firms with them to open their own agency or had contacts in through prior job in a personnel department. Once relationships were established, firms would contact the agency with a request for a referral, but agencies did not necessarily have the exclusive right to a vacancy. Some jobseekers and most firms were repeat clients.¹³

As part of their job-matching service, agencies would interview the jobseeker and might administer a test, check references, or give guidance on interview technique and

¹² As noted in Rees (1966) for Chicago, consistent with the small number of such advertisements in our data. This appears to have been true for public employment agencies too.

¹³ For newspaper advertising: Skeels (1969) and authors' interview of 1970s employment agency owner. We see the clustering in the agency addresses in our help-wanted advertisements, and Rees (1966) notes clustering for Chicago. For subway information: authors' interview of 1970s employment agency owner. For cold calling: Martinez (1976), referring to practices in 1964. For former employees leaving to start an agency: New York Court of Appeals Records (1939). For exclusive rights: authors' interview of 1970s employment agency owner. For repeat clients: Authors' interview of 1970s employment agency owner; U.S. Senate Committee on Public Health, Education, Welfare and Safety (1962) p.187.

writing a resume. The jobseeker would pay a fee if placed in a job, and these fees were regulated in New York state but not in Maryland or Washington D.C.; regulated or unregulated fees were a share of the wage or salary, with the share increasing in steps as the salary increased. In many cases, the employer would offer to pay the fee of the successful candidate.¹⁴

The earliest data on the importance of private employment agencies for job seekers (and therefore employers) pertain to 1972, and are from a supplement to the January 1973 Current Population Survey questioning workers who had started a new job in 1972. Although the private employment agency sector grew over time, it was larger in New York City than elsewhere in 1950 and 1960 (see below), so the later national figures may be informative for this paper. Among new job holders in 1972, 22.4% of women and 19.9% of men had used a private employment agency as part of their search, and 7.9% of women and 3.8% of men had found their job through a private employment agency. These shares were much higher for white collar workers. For example, 16.6% of female clerical workers including 20.7% of female stenographers, typists and secretaries had found their job through a private employment agency, while 7.1% of male professional and technical workers including 13.6% of male engineers and 10.7% of male managers and administrators had done so. 46% of offers found through private employment agencies were turned down, the highest of any search method.¹⁵

Private employment agency activity was greatly concentrated in Manhattan compared to surrounding areas, as shown by the 1954 Census of Business. Table 1 shows figures for greater New York City (panel A), for the counties within New York City proper except for Staten Island (panel B), for several New York counties close to New York City (and included in greater New York City) whose agencies are represented in our data (panel C) and for Washington D.C. (panel D). 467 agencies were located in New York County (Manhattan) (column 1), 64% of the greater New York City total, and 78% of greater New York City agencies' receipts were in Manhattan (column 4; 12,183/15,615). This compares to only 38 establishments in Washington D.C. with receipts only 3.3% of Manhattan's, and receipts in King's County (Brooklyn) and Queens each about 5% of Manhattan's.

Entry to the private employment agency business was relatively easy, which may

¹⁴ For agency functions: Authors' interview with 1970s agency owner; U.S. Senate Committee on Public Health, Education, Welfare and Safety (1962), p.276; Kiplinger Magazine (1961); Thal-Larsen (1968) pp.153-159, pp.167-168 with retrospective data for 1960, pp.269-280. For fees: U.S. Senate Committee on Public Health, Education, Welfare and Safety (1962), p.249. For employer paying fee: Many help-wanted advertisements specified this; the 1970s employment agency owner's client firms universally paid the fee; Thal-Larsen (1968) notes variation among California agencies.

¹⁵ U.S. Department of Labor (1975).

account for the high rate of female ownership. In the states of principal interest for this paper, a license was required but was cheap and obtained by filling in forms (the cost in Washington D.C. in 1962 was \$100 per year) and showing good character (except Washington D.C.), only a small bond was required (\$1000 in Washington D.C. in 1962), and capital requirements were low.¹⁶ Agency “counselors” were paid on commission, so when business was slack, payroll was low.¹⁷ Agencies were surprisingly small and numerous given the obvious network returns to scale (see below).

Some agency names such as Better Agency, Best Agency, Verybest Agency or ACME Agency were selected to inspire confidence, while others were based on founder family names (sometimes anglicized). A small number of owners and CEOs gave their full name to the agency when it was founded, thus generally revealing their gender, while a smaller number of owners and CEOs used their family name and first initials. In one case the two female owners combined their family names to yield an ostensibly male-owned agency (Allen O’Brien Personnel Service), in another case a male owner gave one of his agencies a female name (Betty Gray), while in a third case a male-owned agency bore an ambiguous name (Chris A. Tobison).

A common background for female (and male) owners of employment agencies was in the personnel office of a large private firm, the military, or the public sector, or as an employee of another employment agency.¹⁸ Some women inherited the agency upon the death of their husband. Owners had very varied educations: among the 60 mostly female owners in our data whom we have identified in the 1940 or 1950 census, education ranges from high school dropout to college graduate.

A particularly successful female owner in our data was Maude Lennox, born in 1904, who immigrated from Denmark as a child and completed high school in St. Louis. Lennox moved to New York City after (she claimed) expanding the Philadelphia Regional Planning Board’s personnel department from just herself to three hundred people. She decided to open an eponymous employment agency to help exhibitors at the 1939 World’s Fair, and became “one of the city’s leading personnel experts” thanks to “her ability to judge jobs and people”, with an office in the prestigious Rockefeller Center building (*Christian Science Monitor* 1940). The agency incorporated in 1953, but she was described as

¹⁶ Skeels (1969); U.S. Senate Committee on Public Health, Education, Welfare and Safety (1962), p.39 and pp.250ff.

¹⁷ Skeels (1969), authors’ interview with 1970s agency owner; U.S. Senate Committee on Public Health, Education, Welfare and Safety (1962), p.176; Thal-Larsen (1968) p.278.

¹⁸ 27% of personnel job advertisements in our sample are for women. As late as 1921, personnel service was considered a growing opportunity for women (Miller and Coghill 1964).

“operating” the agency in 1956, when she was presumably president of the corporation (*Philadelphia Inquirer* 1956). She was interviewed in newspapers regarding the evolution of the labor market (*Christian Science Monitor* 1940, *New York Times* 1949, *Louisville Courier–Journal* 1954) and how to prepare for a career in personnel (*Pittsburgh Sun–Telegraph* 1949). A female member of her Home Economics Division spoke about job opportunities to Home Economics majors at Cornell (*Ithaca Journal*, 1946). Her staff were high quality if Priscilla Cole, holding a bachelor’s degree in psychology, was typical.¹⁹ Lennox married a Philadelphia tax lawyer in 1946 (apparently her second husband), separated from him in 1956 amid a lawsuit concerning a post–dated cheque for \$75,000, and died in 1982 (*Philadelphia Inquirer* 1956, ancestry.com; 1940 U.S. Census).

In the period we study, labor market discrimination based on gender by employers and therefore by employment agencies seems to have been taken for granted by all. The New York City authorities did attempt to draw the line at the seduction of female jobseekers in employment agencies, as mentioned. A 1955 *New York Times* article examining obstacles to older women finding employment did mention employer “prejudices”, before going on to note that the prejudices were often based in fact.²⁰ Discrimination based on religion was a more current issue, and some agency owners defended the right to refer jobseekers to client firms based on religious considerations, even if the firm had not made its preference explicit for the particular vacancy involved (New York Court of Appeals Records 1939). These agencies emphasized that their job was to make a good match and not to waste both jobseeker and client firm time. Among the plaintiffs in a 1942 New York State case concerning religion was Maude Lennox, who refused to reveal the names of the employers who had illegally requested Christian workers for defense industry work (New York Court of Appeals Records 1942). Race discrimination was also a current issue, and employment agencies were not in the vanguard of progress here either. In 1950, 60 New York City agencies objected to a rule prohibiting a pre–employment inquiry as to the complexion of an applicant or asking for his or her photograph.²¹ Among our *New York Times* advertisements, the only ones explicitly requesting a particular demographic other than male/female are in the section for domestic servants, where race is frequently (and illegally) specified. Race is specified more frequently in advertisements in the *Washington*

¹⁹ <https://www.reflectionsmemorialservices.com/obituaries/Priscilla-Mueller/#!/Obituary>, accessed March 22, 2023.

²⁰ *New York Times* (1955). By 1971, when help–wanted advertisements still specified gender, the U.S. Solicitor of Labor criticized private employment agencies as being among the sources of discrimination against women (Berger 1971).

²¹ *New York Times* (1950).

Post, where some agencies specialized in placing Black jobseekers, and the *Baltimore Sun*.

Most New York City agencies had paid employees, though the share was lower in the other locations we study. Table 1 based on the 1954 Census of Business shows that for New York County (Manhattan), 74% of agencies had payroll (i.e. paid employees, column 2); for agencies with payroll, 47% of receipts went to payroll (column 6); and average payroll per paid employee was \$51 (column 7). The latter is only the weekly salary of typist in our 1950 job advertisements, taking into account inflation and general wage growth, but may be skewed by part-time workers. Manhattan agencies with paid employees had six on average (column 9). The 2092 Manhattan paid employees represented 83% of the greater New York City total, and compares to 97 paid employees in Queens, the highest of the non-Manhattan locations (column 8).

Owners did not necessarily hire only counselors of their own gender. For example, George F. Roberts launched the employment agency Hoyt and Roberts after working for Maude Lennox (New York Herald Tribune 1962) and Ruth Osborne Ahrens, manager of the Betty Gray agency in Washington D.C. owned by Robert Graebner, described her office as an “all-girl office”.²² As late as 1968, some employment agencies still had male and female desks (Thal-Larsen 1968 p.273).

2 Data and sample

For the background section above including information on owners in our sample, we read newspaper accounts archived in newspapers.com, court and congressional documents, and journal articles; searched for owners in decennial censuses and other databases on ancestry.com; and interviewed a woman who began working at an employment agency in 1976 and bought it in 1978. In this section, we describe the sources of the help-wanted advertisements and the agency ownership, and describe the sample of the merged data that we analyze in the paper.

2.1 Help-wanted advertisements

We have hand coded all help-wanted advertisements published in the *Washington Post* on the first Sundays in January and May in 1950 and in December 1960; in the *Baltimore Sun* on the first Sundays in January and May in 1960; and in the *New York Times* on the first Sundays in May in 1950 and 1960. We have not used computerized textual analysis

²² U.S. Senate Committee on Public Health, Education, Welfare and Safety (1962), p.260.

because the pdfs we have affordable access to can only be machine-read with many errors. We chose Sunday because in all three newspapers, this was the day of the week with the most help-wanted advertisements. We chose the first week in May as the week with the largest number of help-wanted advertisements in the *New York Times*, containing advertisements for new graduates and summer activity.

We have collected whether the job advertisement is posted by a firm, an agency or a household; the wage or wage range posted, if any, and the periodicity of the wage if given; the detailed occupation; the desired experience, education and age, if mentioned; and whether the job comes with fringe benefits, a commission or a bonus or includes meals or room and board. Among other possible job attributes or skills desired, we have collected whether the job involves training; involves management or supervision; is an assistant or junior position; involves mathematics or statistics; requires a worker who is good at figures; requires typing or stenography or use of a bookkeeping machine or computer; involves travel or the use of a foreign language; has opportunity for advancement; or is for a company whose product or service is associated with women or children. We note the gender desired or whether either is acceptable (the latter represents a tiny fraction of advertisements)²³; whether any of various physical traits is required, whether any of various personality traits is required, and whether interaction with customers is involved. Generally, we include advertisement characteristics as covariates if at least one percent of advertisements mentioned them. Industry is rarely provided in the advertisements and we use no industry information. We also note whether one, two or many identical positions are advertised. The Data Appendix provides more information on the collection of the job advertisement information.

2.2 Agency ownership

Separately, we have collected information on ownership of the agencies in 1950 and 1960, restricting our attention to agencies with more than one advertisement in our data. The primary source for ownership is the Office of the New York County Clerk, whose paper records contain entries for each registration of a business as a sole proprietorship or partnership in Manhattan, and for changes in owners or partners of these businesses, providing owner or partner names and the agency name and address. Via the agency name, the computer system provides the dates of these events and the number of the correspond-

²³While we have identified some advertisements for the same vacancy placed in both male and female sections without saying the vacancy is open to either gender, even with a more systematic attempt at matching, we do not expect to be able to identify confidently advertisements open to women only.

ing paper file, as well as the date a business is incorporated. The only information on events from before 1926 is that the business was registered before that date, and we were unable to identify the owners of a few businesses whose owners (or incorporation status) appeared not to have changed since that date. We add information for a few additional agencies found in the New York State Corporation and Business Entity database online; for the two relevant sole proprietorships in Bronx County, N.Y., from the staff at the Bronx County Clerk’s Office; and for two of the three relevant sole proprietorships in Essex County, N.J., from the staff at Essex County Clerk’s Office in Newark. Finding agencies in all other jurisdictions was more difficult, as we describe in the Data Appendix.

A female-owned agency is a sole proprietorship or partnership whose ownership is entirely female, and a male-owned agency is defined correspondingly. A mixed-gender agency is a sole proprietorship or partnership with at least one male and at least one female owner (typically one of each with the same family name, apparently typically a married couple). Ambiguous names (e.g. Chris Tobison) are identified by newspaper searches. We identify the non-profit corporation from a newspaper search, while the identity of the state and federal employment agencies are obvious.²⁴

While most help-wanted advertisements are placed by agencies whose address is in the state (or in the case of the *New York Times* the county) of the newspaper in question, each newspaper has some help-wanted advertisements from agencies with addresses in neighboring states and much more rarely in non-neighboring states. These appear to advertise jobs in the location of the agency. Some agencies, typically franchises, have offices in more than one city. We elected not to seek the identities of the franchisees, but instead to group these franchises with other corporations corporations, since franchisees might be more constrained in their behavior than sole proprietors.²⁵ An agency is defined by its name and city.

2.3 Sample

The *New York Times* represents the majority of our help-wanted advertisements, accounting for 69% of the 25,960 vacancies before we extract a sample posted by employment agencies (Table 2 columns 1 and 2). Of these *New York Times* advertisements, more than three quarters are posted by employment agencies, while the share is lower in the *Wash-*

²⁴The U.S. Employment Agency, the New York State Employment Agency, and the National Employment Exchange, a corporation.

²⁵ Guidance given to franchisees of an agency in 1969 is described in New York Times (1969); Clark (1981) reports that franchises provided training to franchisees.

ington Post and as low as 11% for the *Baltimore Sun* in May 1960 (column 3). We have established ownership information for 77% of agency advertisements (column 4). Because this share is higher for the *New York Times*, the final sample for the paper is more heavily weighted towards the *New York Times* than the overall sample of advertisements, with 26% of observations coming from the May 7, 1950 *New York Times* and 67% from the May 1, 1960 *New York Times* (columns 5 and 6).

In terms of occupational distribution, our final sample is similar to the full set of advertisements, though not representative of all occupations in the economy. In the full data (Table 3 columns 1 and 2), the largest aggregate occupations are clerical positions (42%), professional and technical positions (28%) and sales positions (14%). It is clear that firms do not use help-wanted advertisements as a major hiring tool for blue-collar workers, as the shares for craftsmen and operatives/laborers are 4% and 1% respectively. There are also very few advertisements for teachers and nurses (this not displayed in the table). Columns 3 and 4 of Table 3 indicate that the agency subsample (18,421 observations) has a very similar aggregate occupational distribution. We form the final sample by excluding advertisements from agencies whose ownership is unknown or for whom we have only one advertisement; excluding the very few advertisements with no wage information; and excluding advertisements for operatives and laborers (152) and for domestic workers (98), due to their small numbers. This leaves a sample of 14,216 advertisements posted by 366 agencies, whose occupational distribution (columns 5 and 6) is slightly more concentrated in clerical occupations (46%) than the full data. Compared to the distribution of white collar jobs in greater New York City in the 1950 and 1960 censuses, there are considerably fewer managers/officials (see Appendix Table 1). The distribution of detailed occupations in the sample is given in Appendix Table 2 and of other advertisement characteristics in Appendix Table 3.

The average wages by occupation in 1960 dollars are shown in Table 3, Column 7. As described in the Data Appendix, we have adjusted posted wages to reflect full-time weekly wages (most posted wages are weekly). Professional and technical jobs are the best paid, followed by sales and managerial jobs. Jobs in services, jobs whose occupation is not given in the vacancy posting, and especially jobs in clerical occupations are poorly paid. There is a dramatic difference in the distributions of log wages in positions open to women and in positions closed to women. Figure 1 shows that female real wages are not only much lower than male wages in both 1950 and 1960, but also display much lower variance. Mean real wages in the sample rose 33% for men and 51% for women between

1950 and 1960, consistent with economy-wide real wage growth of 33% over this period.²⁶

Of our 366 agencies, 108 were female-owned in at least one year, compared to 146 male-owned in at least one year. 99 agencies are present in our data in both 1950 and 1960 (“stayers”), 60 are present in 1950 but not subsequently (“exit”), while 207 are present in 1960 but not earlier (“enter”). Of the 99 stayers, 25 change ownership type. Among female-owned agencies, 30 stayers remain female-owned, 9 stayers cease being female-owned and 4 stayers become female-owned, while 26 agencies exit and 52 enter. Among male-owned agencies, 24 stayers remain male-owned, 9 stayers cease being male-owned and 5 stayers become male-owned, while 21 agencies exit and 87 enter.

3 Methods

We first analyze whether female-owned agencies (FA_j) are more likely to place advertisements open to women than male-owned agencies (the omitted ownership in the regressions). After examining descriptive statistics, we investigate mechanisms using the linear probability model

$$Y_{ijt} = \beta_0 + \beta_1 FA_j + \beta_2 CA_j + \beta_3 XA_j + \beta_4 NA_j + \beta_5 X_{ijt} + \beta_6 Z_{jt} + \gamma_t + \delta_c + \epsilon_{ijt}, \quad (1)$$

where $Y = F_{ijt}$ is a dummy for an advertisement open to women, i indexes job advertisements, j indexes employment agencies, γ_t represents a dummy for 1950 and two month dummies, and δ_c represents two city dummies. The coefficient β_1 is the coefficient of principal interest, and CA_j is a dummy for a corporate agency, XA_j a dummy for an agency with mixed-gender ownership, and NA_j a dummy for a non-profit or public agency. Z_{jt} is the log of the number of job advertisements an agency posts (by year) in our full sample of advertisements, a proxy for agency size.

The X_{ijt} covariates include dummies capturing all the non-wage features mentioned in the data section, in addition to dummies for whether the job advertisement gives a wage range rather than a single wage; whether more than one worker was sought in the advertisements; the interaction of assistant and management (task, not occupation) dummies; and the interaction of clerical job with the 1950 year dummy, to allow for structural change in the labor market. Standard errors are clustered by employment agency.²⁷

²⁶ <https://fred.stlouisfed.org/series/COMPRNFB>, accessed February 20, 2024.

²⁷ The distribution of agency sizes, and hence cluster sizes, has a fat right tail and seems to violate

In this regression and subsequent regressions, we are uncertain how to interpret β_2 , the coefficient on the corporate agency dummy (CA): some agencies are founded as corporations and have many shareholders and regional or national franchises, while others have transitioned from sole proprietorship or partnership and are closely held, possibly differing little in organization from sole proprietorships or partnerships.²⁸ If the owners of agencies belonging to at least one man and at least one woman ($XA_j = 1$) all participate in running the agency, we might expect them to behave in a manner intermediate between female-owned and male-owned agencies, but since there are only 21 mixed-gender agencies the results may suffer from small sample bias. For conciseness we report only the coefficients regarding female-owned agencies.

We have not used weighting in any of our regressions, although some advertisements are for one worker and some for many: in unreported regressions where advertisements for more than one worker are counted as two observations, results are similar. For most of the sample, we observe the founding date of the agency, but its coefficient is always statistically insignificant when included in regressions, so we do not shrink the sample to include it.

We explore identifying effects in equation (1) from changes in ownership status, by controlling for agency dummies ω_j . In most circumstances, this would be a more convincing way of identifying the effect of ownership type, but in our case it is unclear. Presumably the purpose of taking over an existing agency, which we define as a change of ownership with no change in agency name and city, is that the new owners take over the files and contacts of the previous owners and seek to maintain the same connections with jobseekers and firms. A reorientation of an agency is likely to happen only slowly. It is possible in some cases that the purpose was merely to obtain a coveted agency name. Even were this typical, the problem remains that few agencies are observed to change ownership between 1950 and 1960 and most changes are not directly between female and male ownership. Fourteen sole proprietorships or partnerships incorporate and six corporations become sole proprietorships or partnerships. But only one agency transitions from female to male ownership and only two from male to female ownership, so the effect of

the condition set by Sasaki and Wang (2022) for the normal clustering formula to be valid. However, the authors' solution involves weighting and changes coefficients as well as standard errors, so we opt not to implement their method.

²⁸ For instance, Jessie Brinkley testified in a New York court in 1939 that neither the 150 "lady" stockholders of her corporation nor the nine-woman board had any interest in managing the company while she was the president (New York Court of Appeals Records 1939, p.748.) This was, however, an unusual corporate structure in which the shareholders were clients of the agency, which specialized in domestic servants.

transition between male and female ownership is in large part identified from the indirect effects of moves into and out of corporate status.

Our next question is whether female-owned agencies are able to advance women by helping them secure jobs in majority-male occupations. We define as majority male, occupations for which more than 50% of all posted advertisements (not only those posted by agencies) are aimed at men. We estimate equation 1 with the outcome $Y = P(\textit{Female ad for majority male occupation})$, and test whether cross-ownership type distinctions are explained simply by the share of female advertisements they handle, adding a dummy for an advertisement aimed at women (F_{ijt}). We then split the sample into advertisements open to women and those for men only, and estimate equation 1 regressions with $Y = P(\textit{Majority male occupation})$. In this way, we also examine the propensity of female-owned agencies to advertise majority-male vacancies to male jobseekers, and assess the degree to which cross-ownership type gaps are explained by advertisement characteristics and firm size.

Finally, we examine wages. We begin by estimating equation 1 with $Y = \log w_{ijt}$, separately for job posts open to women and those aimed at men. We perform a Gelbach decomposition (Gelbach 2016) for these two sets of wage regressions: this method estimates a base specification and a specification augmented with more covariates, and calculates the contribution of the additional covariates to changes in the coefficients from the base regression. We supplement OLS analysis with median regression.

If female-owned agencies are able to influence the gender or occupation advertised for a given vacancy in favor of female jobseekers and/or against male jobseekers, the ownership differences will be observable within agency, while if female agencies merely specialize in majority-female occupations, the ownership differences will not be observable within agency. To test this, we pool advertisements aimed at men and women, and include a dummy for an advertisement aimed at women (F_{ijt}) and its interactions with the agency ownership dummies and year. The equation estimated is

$$\begin{aligned}
 Y_{ijt} = & \phi_0 + \phi_1 F A_j F_{ijt} + \phi_2 C A_j F_{ijt} + \phi_3 X A_j F_{ijt} + \phi_4 N A_j F_{ijt} + \phi_5 F_{ijt} \\
 & + \phi_6 F A_j + \phi_7 C A_j + \phi_8 X A_j + \phi_9 X_{ijt} + \phi_{10} Z_{jt} \\
 & + \omega_j + \phi_{11} F_{ijt} 1950 + \gamma_t + \delta_c + \nu_{ijt},
 \end{aligned} \tag{2}$$

where the coefficient of interest is ϕ_1 . With agency fixed effects ω_j , ϕ_1 captures the within-agency effect. In these specifications, the coefficient on $N A_j$ is no longer identified because the public/non-profit agencies do not change status between 1950 and 1960. The

city dummy is still identified as some agencies operate in more than one city. We estimate this equation with $Y = \log w_{ijt}$ and $Y = P(\text{Majority male occupation})$.

We have also examined the probability of an agency's surviving from 1950 to 1960, but as the estimation of all coefficients was very imprecise, we do not report the analysis.

4 Results

4.1 Agency sole-proprietors and partners

One way in which employment agencies expand opportunity for women is by providing the opportunity to own one. Of our 366 agencies, 108 were female-owned in at least one year, compared to 146 male-owned in at least one year. However, female-owned agencies were much smaller than male-owned agencies, due to lower numbers of advertisements for men. Panel A of Table 4 shows female-owned agencies posted a mean of 34 advertisements in a given year of our data, compared to 89 for male-owned agencies and 122 for incorporated agencies. Correspondingly, the sum of the wages posted in an agency's advertisements averaged only \$3211 for female-owned agencies compared to \$10,866 for male-owned agencies and \$14,118 for incorporated agencies. Because agencies' revenue comes from fees which are proportional to posted wages, these figures give an idea of agency revenue, though the profit differentials are likely to be smaller since larger agencies would have larger payroll. It is also possible that male and female agencies differed in the proportion of jobs postings that they advertised in newspapers. But from the data we have, it seems like although women surely benefited from the opportunity to open an agency, they may have benefited less than male owners.

We have manually searched for 124 female proprietors in the censuses through 1950 and found 55 of them in the 1940 and 1950 censuses. The educational attainment of these women is very varied, ranging from eighth grade to post-college. Although the 1950 census asks for self-employment income, because it asks only sample line respondents (a random sample) and because some of our proprietors had not yet set up their employment agencies, we only have income for three (\$750 for a partner who would have shared the agency income, \$2500 and \$5000) and the income for a married couple who were joint owners (\$4600, reported for the husband only). We have found the income for one of our male proprietors (\$3900). For comparison, a full-time full-year executive secretary in our 1950 advertisements earned \$3300 and an accountant \$5000.

4.2 Agency gender specialization

A crude measure of the degree to which female-owned agencies helped jobseekers and client firms is their share of posted advertisements or advertised wages. This measure relies on the counterfactual that vacancies handled by female-owned agencies would not be handled by any employment agency and the operations of corporate and previously mixed-gender agencies would be unchanged. Female-owned agencies posted 21% of all advertisements and 18% of advertised wages, but were more influential for female jobseekers, posting 31% of female advertisements and wages (Table 4 panel B). As many as 31% of female jobseekers using agency services might therefore have been deprived of them in the absence of female-owned agencies.

In a more conservative counterfactual, female-owned agencies would be the same size but owned by men. Because female-owned agencies specialize in vacancies for women while male-owned agencies specialize in vacancies for men, this would still imply fewer agency services for women. Panel C of Table 4 shows that 61% of female-owned agencies' vacancies were for women, compared to 32% for male-owned agencies (and 36% for corporate agencies). Since overall 42% of advertisements were aimed at women, female-owned agencies were more specialized in their own gender than male-owned agencies. Under this counterfactual, more male jobseekers would have benefited from agency matching services, but $(.21)(.615-.323)/.42 = 14\%$ of the female jobseekers benefiting from agency services would have lost them.

We investigate the mechanics of agency specialization by jobseeker gender in linear probability regressions in Table 5. Female-owned agencies are 26.6 percentage points more likely to advertise for a woman (panel A column 1) than male-owned agencies, in a specification with only time and city controls (we shall refer to these as basic controls). 6.0 percentage points of this gap are explained by controlling for characteristics of the job advertisement other than occupation, leaving a gap of 20.6 percentage points in column 2. The gap is reduced a further 6.5 percentage points through the addition of aggregate occupation dummies and the interaction of clerical occupation and year in column 3; by a further 5.6 percentage points through the replacement of aggregate occupation dummies with 76 detailed occupation dummies in column 4; and by 1.3 percentage points through the addition of (log) agency size in column 5. This leaves female-owned agencies a statistically significant 6.9 percentage points more likely than male-owned agencies to designate a similar job advertisement as being open to women. Because one quarter of advertisements contain no information other than the occupation and wage, some of this

remaining gap is likely to be picking up some unreported differences in the jobs, however.²⁹

In column 6, we identify effects from changes in ownership status, by adding agency dummies to the simple specification of column 1. The point estimate on the female-owned agency dummy is a small and statistically insignificant 1.2 percentage points. The enormous contrast with the 26.6 percentage point coefficient in column 1 suggests to us that identification based on ownership transitions is not informative.³⁰

The result that female-owned agencies advertised for more women, even within occupation, could mean that they advertised for even more women in mostly female occupations. However, the fact that the detailed occupation dummies explain little more of the coefficient on female-owned agency than aggregate occupation dummies shows that female-owned agencies were advertising for women in better paid and possibly more male aggregate occupations. Furthermore, panels B, C and D show that female-owned agencies advertised for more women not only among clerical occupations, but among other major aggregate occupations: the combination of professional/technical and managers/officials, and sales. For the professional, technical and managerial sample in panel C, the female-owned agency's propensity to advertise for more women is not explained by advertisement covariates nor agency dummies. We next study advertisement occupations directly.

4.3 Occupations

The occupations to which female-owned agencies match female jobseekers is another measure of opportunities provided by female-owned agencies to female jobseekers. Table 6 shows the occupational distribution of advertisements by agency type (dropping public/non-profit to save space), by gender of the jobseeker sought. Female-owned agencies specialize in clerical occupations, accounting for 61% of their advertisements (panel A column 1), compared to 39% for male-owned agencies and 43% for corporate agencies, and commensurately had disproportionately few advertisements for professional and technical jobs (21%), compared to 35% for male-owned agencies and 29% for corporate agencies.

The occupational distribution is more similar across agencies among advertisements for women than among advertisements for men. The share of female advertisements in clerical positions is clustered in the range 82–85%, with the share lowest for female-owned agencies (panel B). Female-owned agencies advertised the lowest share of professional and technical jobs to men (36%, compared to 47% for male-owned agencies) and the highest

²⁹ Agencies did not put all the job information into the advertisement: authors' interview with 1970s agency owner.

³⁰ It also possible that the founding ownership status could be what matters most.

share of clerical jobs to men (27% compared to 19% for male-owned agencies), as panel C shows. Female-owned agencies thus advertised better occupations to women and less good occupations to men, compared to male-owned agencies.

Returning to Panel C of Table 4, we see that 10.2% of female-owned agency advertisements were for women in majority-male detailed occupations, compared to only 5.0% for male-owned agencies and 5.5% for corporate agencies.³¹ The female-owned share is twice the male-owned share principally because the share of female-owned vacancies that is for women is almost double: the shares of female vacancies that are in majority-male occupations are not very different at 16% for female-owned agencies and 15% in male-owned vacancies (not tabulated).

We nevertheless examine the propensities of advertisements of different agency types to advertise for women in majority-male occupations. Columns 1–3 of Table 7 panel A confirm the raw means: controlling for basic covariates (column 1), advertisement characteristics other than occupation and wage (column 2) or even aggregate occupation dummies (column 3), there is only a slightly higher propensity (a statistically insignificant 2.7 percentage points in column 1) for female-owned agencies compared to male-owned agencies. The differential is close to zero in both panel B specifications using the sample of clerical advertisements. The point estimates for professional, technical and managerial advertisements in panel C are quite different. Female-owned agencies are 10 percentage points (significant at the 10% level, column 1) more likely to advertise in a majority-male occupation than are male-owned agencies (80% of advertisements compared to 70%); additional covariates reduce the point estimate to 7.5 percentage points (statistically insignificant). Combined with the (untabulated) facts that 32% of female-owned agency advertisements in this aggregate occupational grouping are in majority-male (detailed) occupations compared to 9% for male-owned agencies, these figures explain why 25% of female-owned agency advertisements in this aggregate occupational grouping are for majority-male occupations compared with 6% for male-owned agencies.

We perform symmetric analysis for male advertisements in columns 4–6, analyzing the propensities of advertisements of different agency types to advertise for men in majority-female occupations, which are likely to be dead-end jobs. We recode the close to gender-balanced composite occupations of “other clerk” and “other clerical occupation” to be male for the purposes of these regressions. They include some majority-male occupations

³¹ The major examples of narrowly defined occupations that have somewhat balanced gender (between 25% and 75% female) are cashier, accounting clerk, bookkeeper, market researcher, clothes salesman, teacher, recreation worker, personnel worker, technician, copywriter, and editor/reporter. Some more vaguely defined (office worker) or very small occupations are also integrated.

we considered too small to categorize separately, such as stock clerk, mail carrier and mail clerk, which means that a man in these two composite occupations is likely not to be in in a dead-end job. Column 4 panel A shows that female-owned agencies are a statistically significant 4.0 percentage points more likely to advertise a female job to men; column 5 shows that the advertisement content other than occupation and wage explain half of this; while column 6 shows that aggregate occupation dummies explain the rest. Panels B (for clerical occupations) and panel C (for professional, technical and managerial occupations) yield no coefficients large in absolute value.

To test whether the effects of interest in Table 7, principally for female advertisements in professional, technical and managerial occupations and for male advertisements generally, are the result of female agency proprietors changing the content of vacancy advertisements in women’s favor we explore whether the effects are caused by within rather than between-agency variation. We pool male and female advertisements and focus on the coefficient on the interaction of female-owned agency and female advertisement, focusing first on the probability of advertising a majority-male occupation (Table 8 panel A). With basic covariates (and as yet no agency dummies), the gender gap in the probability of advertising a male occupation is ten percentage points higher for female-owned agencies than male-owned agencies (column 1). When the sample is restricted in column 2 to advertisements in agencies advertising to both genders, those that will identify a within-agency effect, the coefficient is essentially the same. However, in column 3, the addition of agency dummies reduces the gender-gap differential from a statistically significant 10.9 percentage points to a statistically insignificant 3.7 percentage points: thus, only one third of the differential remains when measured within agency. Adding further non-occupation covariates in column 4 does not change the coefficient much.

In panel B, we examine the probability of advertising a majority-female occupation, with “other clerk” and “other clerical occupation” recoded to be majority-male. As would be expected based on Table 7, the column 1 coefficient of -0.056 is less than half of the panel A coefficient. Restricting the sample in column 2 increases the coefficient to a statistically significant -7.5% while adding agency dummies cuts it approximately in half. Both panels suggest that some of the difference between female-owned and male-owned agencies in the types of occupation advertised to men versus women is within-agency variation, though this component is not statistically significant.

We examine professional, technical and managerial occupations in panel C, where column 1 shows a statistically significant higher gender gap in the probability of advertising a male occupation of 12.2 percentage points. This gap increases somewhat to 15.7

percentage points with the restricted sample in column 2, and falls only slightly to 12.8 percentage points (statistically significant) with the additional of agency dummies in column 3, indicating that 80% of the variation is within agency. Together, the panels suggest that while the male disadvantage associated with female-owned agencies seen in column 1 is mostly due to between-agency variation, the female advantage within the professional, technical and managerial class could reflect female owners' securing occupational upgrades for women.

4.4 Wages

We next examine wages to test whether female owners appear to influence them in favor of female jobseekers or attract better vacancies for women than men, or whether female owners advertise a different quality of job to both genders. Table 9 panel A shows that corporate agencies advertise the highest wages to women on average: \$79, 4% above the average of \$76. Female-owned agencies advertise jobs paying the average, while male-owned agencies advertise jobs paying \$75 on average. For male wages, panel B shows more of a gap between female-owned and male-owned agencies, with jobs for the former paying \$128, or 6% below the average of \$136, and jobs for the latter paying \$139. Statistics on the ratio of female to male average wages by ownership type are provided in panel C of Table 9: compared to the average of 56%, female-owned agencies have a female/male ratio of 60%, better than the male ratio of 54% and slightly better than the corporate ratio of 57%. Caution should be exercised in interpreting the ratios in the table however, as average wages rose 30% in the United States from 1950 to 1960, and the share of advertisements aimed at men as well as the share of advertisements posted by male-owned agencies both rose considerably.

A richer picture of wages for female and male-owned agencies is conveyed by the distributions in Figure 2, which are shown for 1950 (panels A and C) and 1960 (panels B and D) separately. The two upper panels show that for jobs open to women, wages at female-owned agencies (in gray) are slightly shifted to the right compared to those of male-owned agencies (in black) in both years. At first glance, 1950 and 1960 also look similar in the lower panels for jobs open to men only: the tails of the female and male-owned agency distributions look similar, but the median is distinctly lower for female-owned agencies. However, close examination reveals that in 1950, the female-owned agency distribution has a thicker right tail and a thinner left tail than the male-owned agency distribution, and in fact in this year the mean wage for men is higher at female-

owned agencies.³²

We pursue the investigation of the quality of jobs posted by female-owned and male-owned agencies by studying wages in detail. First, in Table 10, we estimate wage regressions for women using OLS (columns 1–3) with key coefficients shown in panel A and the corresponding Gelbach decomposition shown in panel D. Column 1 panel A shows that with only basic covariates, female-owned agencies posted wages a statistically significant 5.5% higher than those posted by male-owned agencies. Column 2 panel A shows that half of this premium may be explained by agency size and advertisement characteristics using only aggregate occupation dummies, leaving a marginally significant 2.8% premium, and column 3 shows more may be explained by replacing aggregate occupation dummies with detailed occupations, leaving a statistically insignificant 1.9% premium.

The first row of panel D shows the change in the coefficient of interest between columns 1 and the next two columns (5.5-1.9=3.6 log points for column 3; 2.6 log points for column 2), while the subsequent rows decompose this change into contributions by (groups of) covariates. The largest contributor is the detailed occupation dummies, which explain more than half the column 3 change (2.0 log points, statistically significant). The contribution of aggregate occupation dummies is less than half as large (0.9 log points in column 2), showing that the female-owned agency premium is due in part to the detailed occupations advertised and not just the mix of aggregate occupations. The contributions of other advertisement characteristic groups are smaller, with the next largest, at 0.5 log point, being the statistically significant contribution of covariates capturing required job tasks. The dummy for whether training is provided on the job also makes a statistically significant contribution of 0.3 log point: training reduces wages and female-owned agency vacancies have less training than those posted by male-owned agencies. Of course, a wage gain from lack of training would not imply a long-run wage gain.³³

In panels B and C we repeat the panel A regressions for clerical occupations, and for professional/technical and managers and officials separately. These regressions reveal a female wage premium for female-owned agencies in both categories, but while the small premium among clerical occupations is explained by the covariates, the larger professional/technical/managerial premium is a marginally significant 8.2% conditional on

³²We have manually examined the low male wages and the advertisements in which they appear and can find no errors. Several are for painters at \$20 (1950 \$), which cannot be an hourly wage though it is very low for a full-time male weekly wage. A few are for boys, including one for a bellhop who might be expected to earn tips.

³³Tasks are dummies for the following job requirements: needing math or statistics, being good at figures, needing to manage or supervise, being an assistant or junior, the interaction of managing and being an assistant, typing, stenography, travel and language.

covariates including detailed occupations. We do not present the results of the corresponding Gelbach decompositions because none of the components is statistically significant, but note that female-owned agencies' professional, technical and managerial wages were a marginally significant 1.9 log points higher due to their having less training.

In columns 4 and 5, we present the coefficients from median regressions. The female-owned agency premium (conditional on basic covariates, column 4) is only slightly lower than with OLS, at 4.7%. Regressions do not converge with full controls, but the premium conditional on detailed occupation dummies and agency size is zero (column 5). The difference between OLS and median regression will be more interesting for men-only advertisements.

As noted in conjunction with men-only advertisements in Figure 2, in 1950 the difference between female-owned and male-owned agencies is different at the median (a clear premium for male-owned agencies, as in 1960), and at the mean (a slight premium for female-owned agencies, contrary to 1960). To analyse male wages, we therefore first present median regressions, since we can pool the two years. Column 1 of Table 11 shows there is an enormous, statistically significant 19 log point wage (20%) disadvantage in advertisements posted by female-owned agencies, which falls to 7.3% (statistically significant at the 10% level) when all advertisement characteristics except occupation are controlled in column 2. The disadvantage falls to 2.4% (statistically insignificant) when instead aggregate occupation dummies are controlled in column 3 and to -0.1% when they are replaced with detailed occupation dummies in column 4 (regressions do not converge if we control for full covariates). Thus, unlike for female advertisements, for male advertisements the female-owned agency wage differential is principally due to the mix of aggregate occupations – more clerical and less professional/technical – rather than the detailed occupations within them.

The analysis in panel B of Table 11 shows that there is indeed no wage difference between agency types within the clerical occupation category, conditionally or unconditionally. Conversely, there is an 11% professional/technical wage disadvantage associated with female-owned agencies in the first column, only half of which is explained by covariates in later columns, including agency size in column 5.

We examine the effects at the mean for men-only advertisements separately for 1950 and 1960, and present the coefficients (panel A) and the corresponding Gelbach decompositions (panel D) in Table 12. Column 1 shows that the female-owned agency premium of 3.7% in 1950 is not in fact statistically significant, and that the premium grows somewhat conditional on covariates to a statistically insignificant 4.9% (column 2). This change in

coefficient of -1.4 log points is also statistically insignificant, as are all its Gelbach components (panel D). Focusing nevertheless on the component point estimates shows that these are the only regressions in which occupations play only a minor role.

For 1960, the female-owned wage disadvantage is 12.1 log points (13%) with only basic covariates (Panel A column 3), reduced to only 2.2% with the addition of all covariates with aggregate occupation dummies, and to a not much smaller 1.0% with the aggregate occupation dummies replaced by detailed occupation dummies. The contribution to the change in coefficient is 5.8 log points for aggregate occupation dummies (panel D, column 4) compared to 7.2% for detailed occupation dummies (column 5), each explaining more than half of the change in coefficient. This confirms the importance of the mix of aggregate occupations and specialization in clerical occupations for female-owned agencies' low male wages.

For completeness, we present the results for the samples of clerical occupations and professional/technical and management occupations in panels B and C, which are consistent with those of the median regressions in the previous table. We do not present the Gelbach decompositions, since all components are statistically insignificant, but note two marginally significant components for the sample of professional, technical and managerial occupations: compared to male-owned agency wages, female-owned agency wages are reduced by 3.9 log points due to a less lucrative detailed occupation mix and by 2.8 log points due to a large share of advertisements for (poorly paid) trainees. Thus, for both female and male jobs, training has more influence on the wage gap between female and male-owned agencies in the sample of professional, technical and managerial occupations, but has opposite effects for female and male jobs because female-owned agency advertisements have a low share of trainees for female jobs and a high share of trainees for male jobs, both overall and among jobs in professional, technical and managerial occupations.

In Table 12, we have not probed to see whether the gender wage gaps by ownership are the same within-agency as they are overall. We now turn to within-agency gender wage gaps, returning initially to Table 9. In panel D, we calculate ratio of average female to average male wages, as in panel C but for a sample restricted to advertisements posted by agencies posting both jobs aimed at women and jobs aimed at men, an adjustment we make in order to better compare with the average (calculated at the advertisement level) within-agency wage ratios. These ratios are slightly higher than in panel C, but female-owned agencies retain a clearly higher ratio. Panel E displays the average of the agency female-male wage ratios, showing that the within female-owned agency ratio is little higher than the within male-owned agency ratio (78% versus 77%), and that both

are higher than the ratios for other ownership types.

We examine the within–agency gender wage gap in Table 13, using median regression given the differences between 1950 from 1960 for male wages. In panel A column 1, we simply pool male and female advertisements and focus on the coefficient on the interaction of female–owned agency and female advertisement using basic covariates, a female advertisement dummy and the female advertisement interacted with year dummy (without agency dummies initially). The median gender wage gap for female–owned agencies is 24 log points (27%) higher than in male–owned agencies, as would be expected based on Tables 9 and 11.

In column 2 we restrict the sample to advertisements from agencies advertising to both genders, which cuts the coefficient by 40% to a marginally statistically significant 14.5 log points; unreported regressions indicate this is due to the dropping of agencies advertising for men only. This 40% of the female–owned agency relative female wage advantage (driven by an absolute disadvantage for male wages) is therefore mechanically due to the high wages advertised by agencies posting job for men only, which specialize in professional/technical jobs and are disproportionately male–owned.³⁴

We control for aggregate occupations in panel A in column 3, which shows that of the column 2 14.5 log point relative female advantage for female–owned agencies, almost half is due to female–owned agencies’ advertising clerical rather than professional jobs to men (the regression does not converge with detailed occupations). Finally, in column 4, instead of occupation dummies, we control for agency dummies, which shows that there is no within–agency gender wage gap. Within clerical occupations (panel B) there is no relative female advantage for female–owned agencies in any specification, while for professional, technical and managerial occupations (panel C), there is a large relative advantage that also disappears when agency dummies are added in column 4. This is evidence against female owners influencing wages in women’s favor.

4.5 Role of agency name

Possible explanations for our results other than the discrimination mitigation theory rely on jobseekers and/or client firms knowing the gender of the agency owner. Client firms would likely discover the owner gender when initially exploring the establishment of business relations no matter the name of the agency. Jobseekers would be more likely to

³⁴ Many of the agencies for which we see advertisements for one gender only are agencies for which we observe very few advertisements, and may not be as specialized as they seem.

know the owner’s gender if the agency’s name indicated it. We have therefore rerun the regressions to see if the results found above for female-owned agencies are even stronger for the minority of female-owned agencies with recognizably female names, which would support the theory that female-owned agencies specialize in women’s vacancies because they attract female jobseekers. Consistent with this, we find that female-named agencies specialize even more in vacancies for women than other female-owned agencies (and that male-named agencies specialize even more in vacancies for men than male-owned agencies); see Appendix Table 4. The results are qualitatively similar for the probability of a male occupation for women and for women’s wages, albeit the relevant coefficients are statistically insignificant (Appendix Tables 5 and 6). A qualitative difference among female-owned agencies is that those with female names have the same share of male advertisements in clerical occupations as male-owned agencies. Nevertheless, the results support the theory that female-owned agencies develop a comparative advantage in jobs for women because female jobseekers are attracted to female-owned agencies.

5 Conclusion

Our study of help-wanted advertisements in the United States in 1950 and 1960 provides evidence that female-owned employment agencies expanded opportunities for women. They expanded agency services available to female jobseekers by specializing in vacancies for women, achieving this specialization through a specialization in clerical occupations and by advertising for more women within each aggregate occupational category. By expanding services to female jobseekers, they also expanded agency services to more female vacancies in majority-male occupations. Not least, female proprietors gave themselves the opportunity to work in a majority-male occupation.

Female-owned agencies also advertised higher quality jobs to women, advertising a higher share of their female vacancies in professional, technical and managerial occupations than did male-owned agencies; advertised more lucrative occupations within aggregate categories; and advertised higher wages. Among professional, technical and managerial vacancies for women, female-owned agencies were much more likely to advertise in a majority-male occupation. By contrast, the specialization of female-owned agencies in clerical occupations led to much lower advertised wages for men than wages posted by male-owned agencies.

Because most of these results are generated by between-agency variation, we believe the patterns are best explained either by female proprietors exploiting a comparative ad-

vantage in female and/or clerical occupations, or by their being subject to discrimination by client firms who do not trust them to fill high-skill and therefore more specialized vacancies. However, mitigation of employer discrimination against women may play a role in the establishment of the female-owned agencies and their specialization in female vacancies, as well as in their higher propensity to advertise majority-male occupations among professional, technical and managerial advertisements for women.

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6 Data Appendix

6.1 Wages

Wages are converted to weekly wages assuming 40 hours per week, 4.33 weeks per month and 50 weeks per year (most part-time jobs specify hourly wages, while for some that do not we coded the part-time status in the advertisement). Most wages are given without any frequency. It is generally clear if the wage is hourly or annual, but there is overlap between weekly and monthly wages for advertisements in which the frequency is given. Reasonable cutoffs are made based on examination of separate distributions for New York and Washington/Baltimore for 1950 and 1960 by major occupation. We manually inspected weekly wages in the tails of the distribution, including checking the original advertisements, and corrected the frequency if appropriate, or, more rarely, the raw wage itself. If the advertisement provides an upper and a lower bound for the wage, the log of the average of the two is used.

6.2 Occupations

The occupation of an advertisement was coded by first choosing one of eight aggregate occupations (or the ninth option: not described), and then either one of the 239 specified detailed occupations, writing in another occupation, or indicating that the detailed occupation was not described. The detailed categories were mostly based on the standard occupational categories of the time, but also included some categories seen often in the data e.g. secretaries could be executive, legal, medical, advertising or other.

Considerable cleaning of the results raw data is required before collapsing the entries to 77 occupations we refer to as “detailed” in the text. Often an advertisement names two or more detailed occupations for the same job. We define two common pairs of occupations as separate occupations: clerk-typist and secretary-stenographer. Some other combinations were coded as the principal or first-mentioned occupation (e.g. mechanic-machinist as machinist), with the second occupation sometimes reflected in another field e.g. bookkeeper-stenographer coded as a bookkeeper whose required skills include stenography. In other cases, more than one detailed occupation was recorded. We group occupations with small samples into categories such as “other clerk”. We make the occupations mutually exclusive by choosing the occupation with the highest wage (as measured using occupation categories that are not mutually exclusive).

6.3 Ownership

No names of owners of sole proprietorships and partnerships are available online, though dates of incorporation of some agencies were found in state online databases for New York and Maryland.³⁵ As described in the body of the text, obtaining owner names from New York N.Y., Bronx N.Y. and Essex N.J. counties was straightforward. We have not

³⁵ New York: <https://apps.dos.ny.gov/publicInquiry/>. Maryland: egov.maryland.gov/businessexpress.

attempted to obtain the owner names for a dozen agencies from the county clerks of Long Island counties, Westchester County N.Y., other New Jersey counties, and counties in Connecticut and Virginia.

A handful of agencies give a Brooklyn address in the job advertisement: the Office of the Brooklyn County Clerk has paper records similar to those of New York County, but without the computer system to find the file number, making looking up these agencies impractical. We paid an official at the Office of the Queens County Clerk to search several years of microfiche for two agencies, without result.

While the Office of Licensing and Consumer Protection of the District of Columbia says all the relevant information is in an online database, we found in it almost no pre-1961 information on Washington agencies and the records do not appear to exist on paper either. Our main source is therefore congressional records on agencies operating in the District of Columbia in 1962 (U.S. Senate Committee on Public Health, Education, Welfare and Safety 1962): we assume the owners in 1962 also owned their agencies in 1960.

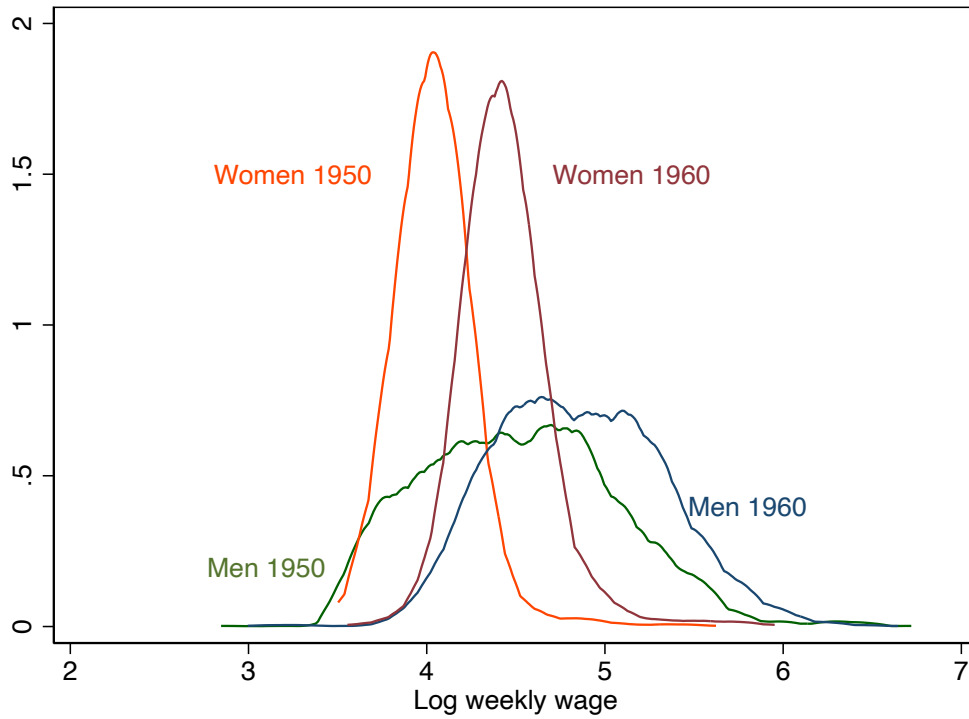
For both Washington D.C. and Maryland-based agencies we have obtained several owner names from articles archived in newspapers.com (in a few cases we may have mistaken a corporation president for a sole proprietor), but obtaining official records from Baltimore City Clerk (or any other Maryland office) requires a request under the Maryland Public Information Act, which we have not accomplished.

6.4 Sample

We originally intended to code advertisements for four dates in 1950 and 1960 for all three newspapers but transcribing was much slower than anticipated. A small number of our advertisements are placed by temporary help agencies.

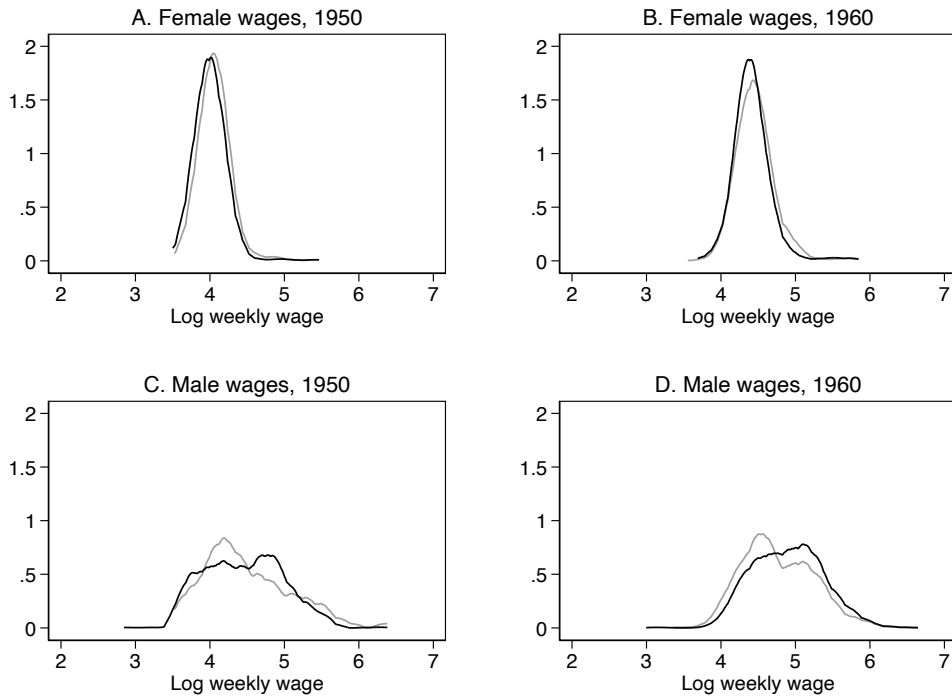
The sample used is advertisements posted by (named) employment agencies which have a valid wage. Some advertisements do not specify an occupation, and a few are too unclear to be coded, but these advertisements are not dropped: rather, a dummy for unknown occupation is used when occupation is controlled for. There are no missings for other advertisement characteristics either. This is to some degree necessitated by the fact that a research assistant who coded a large share of the advertisements left blank the education, experience and age fields if they were not mentioned, rather than coding that they were not mentioned. Blank fields for characteristics are therefore coded as not having been mentioned rather than as missing. Advertisements with no agency or company name were coded as being (non-agency) firms.

Figure 1: Kernel density distributions of wages in advertisements by gender and year



Notes: Wages are in 1960 dollars, and for the purposes of the figure only, log wages of 7 or more are omitted. “Female” advertisements are those open to applications from women, while “male” advertisements are those aimed at men only. The bandwidth is 0.1, the kernel is Epanechnikov.

Figure 2: Distributions of log wages for female-owned and male-owned agencies



Notes: Each figure plots in gray the distribution for female-owned agencies, and in black the distribution for male-owned agencies. Wages are in 1960 dollars. “Female” wages are posted in advertisements open to applications from women, while “male” wages are from advertisements aimed at men only. The bandwidth is 0.1, the kernel is Epanechnikov.

Table 1: Census of Business statistics for private employment agencies in New York City and Washington D.C., 1954

	Establishments		Sole propri- -etors	Receipts (000 \$)	Payroll			Paid employees	
	No	% with payroll			(000 \$)	As % of receipts	Per paid employee (\$, week of Nov 15)	Week of Nov 15	Per establishment with paid employees
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A. New York City	730	67.1	706	15,615	6,218	44.8	50.3	2,519	5.1
B. NYC counties									
New York	467	73.9	454	12,183	5,228	46.7	51.5	2092	6.1
Queens	38	47.4	39	645	190	38.9	40.8	72	4.0
King's	54	51.9	56	606	165	35.3	35.6	97	3.5
Bronx	14	71.4	10	211	79	38.9	62.1	30	3.0
C. Other counties									
Nassau	39	48.7	37	362	71	29.8	57.3	26	1.4
Westchester	25	52.0	19	222	71	37.4	57.2	25	1.9
Suffolk	4	100.0	2	14	4	28.6	38.3	3	0.7
D. Washington	38	36.8	33	403	126	42.4	61.4	55	3.9

Notes: Statistics refer to private employment agencies, excluding agencies for temporary workers. "Week of Nov 15" refers to the workweek ended nearest Nov 15. "New York City" refers to the New York Standard Metropolitan Area, which includes in addition to New York City counties includes the New York counties of Nassau, Rockland, Suffolk and Westchester and the New Jersey counties of Bergen, Essex, Hudson, Middlesex, Morris, Passaic, Somerset and Union. Statistics on Richmond County NY (Staten Island) are not separately available. Payroll as a % of receipts in column 6 uses receipts for establishments with payroll. "000 \$" means thousands of dollars. "Sole proprietors" means active proprietors of unincorporated establishments, includes partnerships; unincorporated establishments may have more than one proprietor.

Source: 1954 Census of Business, Vol VI, Selected Services Area Statistics, U.S. Bureau of the Census; Part 1 U.S. Summary, Alabama to Mississippi; Part 2 Missouri to Wyoming, Alaska and Hawaii

https://upload.wikimedia.org/wikipedia/commons/5/5f/1954_Census_of_Business_Selected_Service_Trades_Area_Statistics_%28IA_1954censusofbusi61unse%29.pdf, accessed February 1, 2024.

https://books.google.ch/books?id=EHAoAAAAMAAJ&printsec=frontcover&hl=fr&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false accessed February 1, 2024

Table 2: Help-Wanted Advertisements by Newspaper and Date

Newspaper	Year	Month	Day	Share ads	Ads	Agency?	Agency ownership	Final sample	
				(%)		(%)	known? (%)	Share ads	Ads
				(1)	(2)	(3)	(4)	(5)	(6)
Baltimore	1960	January	3	2.5	644	31.2	79.6	1.3	160
		May	1	2.7	690	11.0	32.9	0.2	25
Washington	1950	January	8	1.4	356	65.7	35.9	0.6	84
		May	7	1.3	342	64.9	40.1	0.6	89
	1960	January	3	3.6	937	41.6	42.8	1.2	167
New York	1950	May	7	12.1	6000	82.5	75.1	26.1	3713
		May	1	57.1	14,824	76.8	83.5	66.9	9506
	1960	May	1	57.1	14,824	76.8	83.5	66.9	9506
All	--	--	--	100.0	25,960	71.0	77.1	100.0	14,216

Notes: All dates are Sundays. Baltimore data are from the *Baltimore Sun*, Washington data are from the *Washington Post*; New York data are from the *New York Times*. The final sample contains advertisements for which a wage is posted by an agency whose ownership type is known. Ownership was collected only for agencies posting at least 2 advertisements.

Table 3: Distribution of aggregate occupations across samples

Occupation	All advertisements		Agency advertisements		Final sample ads		
	% (1)	Ads (2)	% (3)	Ads (4)	% (5)	Ads (6)	Wage (7)
Clerical	42.0	10,889	45.3	8350	46.3	6630	74
Craftsmen	4.0	1033	2.3	429	2.1	303	105
Household/domestic	1.3	326	0.5	98	--	--	--
Managers/officials	4.6	1196	4.8	888	4.7	671	139
Operatives/laborers	1.3	346	0.8	152	--	--	-
Professional/technical	27.9	7155	29.1	5353	29.9	4186	154
Sales	13.9	3601	13.4	2471	13.5	1924	144
Services	3.1	818	1.7	323	1.6	224	86
Not described	2.3	596	1.9	357	2.0	278	91
Total	100.0	25,960	100.0	18,421	100.0	14,216	111

Note: The final sample contains advertisements for which a wage is posted by an agency whose ownership is known. The wage in column 7 is the mean weekly wage in 1960\$.

Table 4: Descriptive statistics for outcomes by agency ownership

	All agencies (1)	Female owned (2)	Male owned (3)	Corporate (4)	Mixed gender (5)	Non-profit (6)
A. Agency size						
Advertisements per agency	87 (92)	34 (20)	89 (76)	122 (121)	72 (52)	41 (14)
Female advertisements	25	19	21	32	35	33
Male advertisements	62	15	68	90	38	8
Advertised wages per agency (1960\$)	10,063 (12,551)	3211 (2499)	10,866 (12,225)	14,118 (15,359)	6981 (6024)	3211 (679)
B. Agency shares (%)						
Advertisements	100	21.1	37.8	34.3	5.9	1.0
Advertised wages	100	18.1	40.1	35.9	5.1	0.8
Female advertisements	100	31.2	29.4	30.0	7.6	1.8
Female advertised wages	100	31.0	28.7	31.1	7.4	1.7
C. Ad characteristics (%)						
Female	41.6	61.5	32.3	36.4	53.6	75.2
Female in majority-male occupations	6.5	10.2	5.0	5.5	7.3	17.0
Observations	14,216	2994	5372	4870	839	141

Notes: Means with standard deviations in parentheses, unless otherwise indicated. Mixed agencies have both male and female sole proprietors or partners, generally two proprietors sharing a surname. Two of the three non-profit agencies are public agencies, while the third is a corporation. Agency characteristics are measured separately by year (for agencies present in both 1950 and 1960). An occupation is majority male if more than 50% of all posted advertisements (not only those posted by agencies) in pooled years in the detailed occupation are aimed at men.

Table 5: Determinants of advertising position open to women

	(1)	(2)	(3)	(4)	(5)	(6)
A. All occupations (14,216 obs)	0.266*** (0.046)	0.206*** (0.036)	0.138*** (0.028)	0.081*** (0.020)	0.069*** (0.020)	0.012 (0.146)
R-squared	0.10	0.29	0.47	0.60	0.60	0.37
B. Clerical occupations (6630 obs)	0.130*** (0.040)	0.098*** (0.036)	--	0.056** (0.025)	0.041 (0.025)	-0.030 (0.122)
R-squared	0.04	0.17	--	0.40	0.40	0.30
C. Professional/technical and managerial occs (4857 obs)	0.232*** (0.042)	0.200*** (0.036)	--	0.124*** (0.026)	0.114*** (0.027)	0.245* (0.126)
R-squared	0.08	0.23	--	0.40	0.40	0.36
D. Sales (1924 obs)	0.116*** (0.039)	0.109*** (0.035)	--	0.075** (0.033)	0.075** (0.034)	0.055 (0.210)
R-squared	0.03	0.13	--	0.20	0.20	0.38
Ad covariates except occs	--	Yes	Yes	Yes	Yes	--
Aggregate occ dummies	--	--	Yes	--	--	--
Detailed occ dummies	--	--	--	Yes	Yes	--
Agency size (log)	--	--	--	--	Yes	--
Agency dummies	--	--	--	--	--	Yes

Notes: Coefficient on female-owned agency from linear probability for the probability of a position being open to women; standard errors clustered by agency in parentheses. All regressions include dummies for mixed-gender owned, corporate and non-profit agency, two city dummies, a year dummy and two month dummies. The 36 non-occupation covariates are listed in the data section (they do not include wage). Aggregate occupation controls are 6 dummies and the interaction of the aggregate clerical occupation with the year dummy; detailed occupation controls are 75 dummies and the interaction of the aggregate clerical occupation with the year dummy. Column 6 includes 365 agency dummies. *** p<0.01, ** p<0.05, * p<0.1

Table 6: Aggregate occupation distribution by gender and type of agency (%)

	Female owned (1)	Male owned (2)	Corporate (3)	Mixed gender owners (4)
A. All advertisements				
Clerical	61.0	39.3	43.0	62.0
Craftsmen	1.0	3.1	2.0	0.4
Managers/officials	4.5	4.5	5.3	3.5
Professional/technical	20.9	35.1	28.5	28.3
Sales	9.1	14.4	17.3	4.4
Services	1.4	1.5	2.0	0.5
Not described	2.1	2.0	2.0	1.1
Total	100.0	100.0	100.0	100.0
Observations	2994	5372	4870	839
B. Female advertisements				
Clerical	82.2	83.3	85.1	84.9
Craftsmen	0.3	0.5	0.1	0.2
Managers/officials	1.7	0.7	2.0	0.7
Professional/technical	11.6	10.1	7.1	12.0
Sales	2.5	2.7	3.0	1.1
Services	0.6	1.1	1.2	0.4
Not described	1.1	1.5	1.6	0.7
Total	100.0	100.0	100.0	100.0
Observations	1841	1737	1774	450
C. Male advertisements				
Clerical	27.1	18.2	18.9	35.5
Craftsmen	2.1	4.3	3.0	0.5
Managers/officials	9.1	6.3	7.1	6.7
Professional/technical	35.8	47.1	40.8	47.0
Sales	19.6	20.0	25.4	8.2
Services	2.6	1.7	2.5	0.5
Not described	3.6	2.3	2.2	1.5
Total	100.0	100.0	100.0	100.0
Observations	1153	3635	3096	389

Table 7: Determinants of advertising a position in a majority opposite-gender occupation

	Female advertisements			Male advertisements		
	(1)	(2)	(3)	(4)	(5)	(6)
A. All occupations	0.027 (0.027)	0.015 (0.022)	0.010 (0.008)	0.040** (0.019)	0.021 (0.024)	0.003 (0.010)
Observations	5908	5908	5908	8308	8308	8308
R-squared	0.03	0.19	0.19	0.01	0.30	0.43
B. Clerical occupations	-0.004 (0.006)	-0.001 (0.007)	--	-0.014 (0.044)	-0.015 (0.031)	--
Observations	4929	4929	--	1701	1701	--
R-squared	0.01	0.04	--	0.03	0.35	--
C. Professional, technical, managerial	0.104* (0.057)	0.075 (0.049)	--	0.019** (0.010)	0.010 (0.010)	--
Observations	676	676	--	4181	4181	--
R-squared	0.03	0.27	--	0.01	0.10	--
Other ad covariates	--	Yes	Yes	--	Yes	Yes
Agency size (log ads)	--	Yes	Yes	--	Yes	Yes
Aggregate occ dummies	--	--	Yes	--	--	Yes

Notes: Coefficient on female-owned agency from linear probability regression for the advertisement being for a majority-male occupation; standard errors clustered by agency in parentheses. An occupation is majority male if more than 50% of all posted advertisements (not only those posted by agencies) in pooled years in the detailed occupation are aimed at men. An occupation is majority-female if at least 50% of all posted advertisements (not only those posted by agencies) in pooled years are open to women, except for the occupations “other clerk” and “other clerical” which are coded as majority male. For professional occupations this adjustment is irrelevant. All regressions include dummies for mixed-gender owned, corporate and non-profit agency, two city dummies, a year dummy and two month dummies. The 36 non-occupation covariates are listed in the data section (they do not include wage). Aggregate occupation controls are 6 dummies and the interaction of the aggregate clerical occupation with the year dummy. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 8: Determinants of advertising in a majority-male or female occupation, with agency dummies

	(1)	(2)	(3)	(4)
A. All occupations:	0.104 ^{***}	0.109 ^{***}	0.037	0.039
P(Majority-male occupation)	(0.035)	(0.033)	(0.036)	(0.029)
Observations	14,216	11,675	14,216	14,216
R-squared	0.49	0.45	0.56	0.61
B. All occupations:	-0.056 [*]	-0.078 ^{**}	-0.046	-0.043
P(Majority-female occupation)	(0.031)	(0.032)	(0.032)	(0.027)
Observations	14,216	11,675	14,216	14,216
R-squared	0.48	0.45	0.54	0.60
C. Professional, technical, managerial:	0.122 ^{**}	0.157 ^{***}	0.128 ^{**}	0.083 [*]
P(Majority-male occupation)	(0.056)	(0.058)	(0.054)	(0.044)
Observations	4857	2841	4857	4857
R-squared	0.15	0.14	0.32	0.38
Ads from agencies with both female, male ads only	--	Yes	--	--
Other ad covariates except agency size and occupations	--	--	--	Yes
Agency dummies			Yes	Yes

Notes: Coefficient on female-owned agency x female advertisement from linear probability regression; standard errors clustered by agency in parentheses. An occupation is majority male if more than 50% of all posted advertisements (not only those posted by agencies) in pooled years in the detailed occupation are aimed at men. An occupation is majority-female if at least 50% of all posted advertisements (not only those posted by agencies) in pooled years are open to women, except for the occupations “other clerk” and “other clerical” which are coded as majority male. For professional occupations this adjustment is irrelevant. All regressions include dummies for mixed-gender owned, corporate and (in columns 1 and 2) non-profit agency; their interactions with a dummy for female advertisement; a dummy for female advertisement and its interaction with the year dummy; two city dummies; a year dummy; and two month dummies. The 36 non-occupation covariates are listed in the data section (they do not include wage). Columns 3 and 4 include agency dummies: 365 in panels A and B, 162 in panel C. *** p<0.01, ** p<0.05, * p<0.1

Table 9: Comparison of female and male wages by agency type

Agency ownership:	All	Female	Male	Corporate	Mixed gender	Non- profit
	(1)	(2)	(3)	(4)	(5)	(6)
A. Weekly female wage (1960\$)	76 (28)	76 (29)	75 (29)	79 (25)	74 (22)	72 (34)
Observations	5908	1841	1737	1774	450	106
B. Weekly male wage (1960\$)	136 (74)	128 (77)	139 (75)	138 (73)	123 (65)	140 (93)
Observations	8308	1153	3635	3096	389	35
C. Ratio of mean female and male wages (%)	56.0	59.6	53.7	57.4	60.2	51.5
D. Ratio of mean female and male wages in agencies with both (%)	58.8	63.9	56.5	58.2	62.6	64.8
E. Mean agency female-male wage ratios (%)	73.1	77.5	76.5	67.4	72.4	66.7
Observations (panels D and E)	11,675	2407	4272	4153	760	83

Notes: Means with standard deviations in parentheses, unless otherwise indicated. The number of observations in panel C is the sum of the observations in panels A and B. The number of observations in panels D and E reflects missing values for agencies which advertised for only one gender in a given year. The agency groups vary by the type of ownership. Non-corporate, for-profit agencies are sole proprietorships (sometimes with two proprietors) or partnerships. Where agencies have both male and female proprietors, there are generally two proprietors sharing a surname.

Table 10: Determinants of wages in vacancies open to women

	Ordinary least squares			Median regression	
	(1)	(2)	(3)	(4)	(5)
Regression results					
A. All occupations (5908 obs)	0.055*** (0.021)	0.028* (0.015)	0.019 (0.012)	0.047** (0.022)	0.000 (0.010)
R-squared	0.42	0.59	0.69	0.42	0.63
B. Clerical occs (4929 obs)	0.037** (0.013)	--	0.006 (0.008)	0.001 (0.016)	0.000 (0.010)
R-squared	0.51	--	0.74	0.51	0.70
C. Professional, technical, managerial occs (676 obs)	0.049 (0.065)	--	0.082* (0.042)	0.001 (0.052)	0.063 (0.041)
R-squared	0.23	--	0.58	0.22	0.41
Ad covariates except occs	--	Yes	Yes	--	--
Aggregate occ dummies	--	Yes	--	--	--
Detailed occupation dummies	--	--	Yes	--	Yes
Agency size (log ads)	--	Yes	Yes	--	Yes
D. Gelbach decomposition of change coefficient on female agency – all occupations					
$\Delta\beta$ compared to base	--	0.026** (0.011)	0.036** (0.013)	--	--
Ad covariates except tasks, occupations, training	--	0.006 (0.005)	0.004 (0.003)	--	--
Training provided	--	0.003** (0.002)	0.003** (0.001)	--	--
Tasks	--	0.005** (0.002)	0.005*** (0.002)	--	--
Detailed or aggregate occupations	--	0.009 (0.006)	0.020** (0.010)	--	--
Agency size (log ads)	--	0.004 (0.004)	0.004 (0.003)	--	--

Notes: Panels A-C coefficients on dummy for female-owned agency in OLS (columns 1-3) or median (columns 4-5) regression; standard errors clustered by agency in parentheses. All regressions include dummies for mixed-gender owned, corporate and non-profit agency, two city dummies, a year dummy and two month dummies. The 36 non-occupation covariates are listed in the data section (they do not include wage). Aggregate occupation controls are 6 dummies and the interaction of the aggregate clerical occupation with the year dummy; detailed occupation controls in panel A are in principle 75 dummies and the interaction of the aggregate clerical occupation with the year dummy, but 11 detailed occupations are never advertised to women. The first row in panel D gives the difference between the coefficient on female-owned agency in the column's specification compared to the base specification from panel A (all occupations). Subsequent panel D values are the components of this change. Tasks are dummies for the following job requirements: needing math or statistics, being good at figures, needing to manage or supervise, being an assistant or junior, the interaction of managing and being an assistant, typing, stenography, travel and language. *** p<0.01, ** p<0.05, * p<0.1

Table 11: Determinants of wages in vacancies aimed at men – median regression

	(1)	(2)	(3)	(4)	(5)
A. All occupations (8308 obs)	-0.186** (0.094)	-0.073* (0.045)	-0.024 (0.039)	-0.008 (0.025)	-0.011 (0.025)
R-squared	0.07	0.38	0.36	0.44	0.44
B. Clerical occupations (1701 obs)	-0.000 (0.029)	-0.007 (0.025)	--	-0.007 (0.024)	-0.007 (0.024)
R-squared	0.30	0.54	--	0.44	0.44
C. Professional, technical, managerial occs (4181 obs)	-0.109* (0.060)	-0.079** (0.035)	-0.086 (0.057)	-0.068 (0.049)	-0.051 (0.040)
R-squared	0.06	0.32	0.07	0.24	0.25
Ad covariates except occupations	--	Yes	--	--	--
Aggregate occupation dummies	--	--	Yes	--	--
Detailed occupation dummies	--	--	--	Yes	Yes
Agency size (log ads)	--	--	--	--	Yes

Notes: Coefficients on dummy for female-owned agency from median regression; standard errors clustered by agency in parentheses. All regressions include dummies for mixed-gender owned, corporate and non-profit agency, two city dummies, a year dummy and two month dummies. The 36 non-occupation covariates are listed in the data section (they do not include wage). Aggregate occupation controls are 6 dummies and the interaction of the aggregate clerical occupation with the year dummy; detailed occupation controls in panel A are in principle 75 dummies and the interaction of the aggregate clerical occupation with the year dummy, but 3 detailed occupations are never advertised to men. *** p<0.01, ** p<0.05, * p<0.1

Table 12: Determinants of wages in vacancies aimed at men - ordinary least squares

	1950			1960	
	(1)	(2)	(3)	(4)	(5)
Regression results					
A. All occupations	0.037 (0.125)	0.049 (0.036)	-0.121* (0.063)	-0.022 (0.026)	-0.009 (0.021)
Observations	0.03	0.68	0.01	0.50	0.58
R-squared	1615	1615	6693	6693	6693
B. Clerical occupations	0.123** (0.057)	0.058 (0.047)	-0.060* (0.032)	--	-0.025 (0.023)
Observations	440	440	1261	--	1261
R-squared	0.03	0.59	0.02	--	0.50
C. Professional, technical, managerial	-0.009 (0.083)	-0.012 (0.063)	-0.132** (0.057)	--	-0.017 (0.028)
Observations	767	767	3414	--	3414
R-squared	0.01	0.50	0.02	--	0.47
Ad covariates except occs	--	Yes	--	Yes	Yes
Aggregate occupation dummies	--	--	--	Yes	--
Detailed occupation dummies	--	Yes	--	--	Yes
Agency size (log ads)	--	Yes	--	Yes	Yes
B. Gelbach decomposition of change coefficient on female agency – all occupations					
$\Delta\beta$ compared to base	--	-0.011 (0.107)	--	-0.099** (0.046)	-0.112** (0.051)
Ad covariates except tasks, occupations, training	--	-0.024 (0.027)	--	-0.008 (0.011)	-0.006 (0.010)
Training	--	-0.002 (0.008)	--	-0.013 (0.010)	-0.012 (0.010)
Tasks	--	0.007 (0.014)	--	-0.010 (0.009)	-0.011 (0.009)
Occupations (aggregate or detailed)	--	-0.002 (0.079)	--	-0.058** (0.026)	-0.072** (0.033)
Agency size (log ads)	--	0.010 (0.014)	--	-0.011 (0.008)	-0.011 (0.007)

Notes: Coefficients on dummy for female-owned agency from OLS regression; standard errors clustered by agency in parentheses. All regressions include dummies for mixed-gender owned, corporate and non-profit agency, one (1950) or two (1960) city dummies, and one (1950) or two (1960) month dummies. The 36 non-occupation covariates are listed in the data section (they do not include wage); however, no job advertisements for men in 1950 required mathematical skills. Aggregate occupation controls are 6 dummies and the interaction of the aggregate clerical occupation with the year dummy; detailed occupation controls in panel A are in principle 75 mutually exclusive dummies and the interaction of the aggregate clerical occupation with the year dummy, but nine detailed occupations in 1950 and four in 1960 are never advertised to men. *** p<0.01, ** p<0.05, * p<0.1

Table 13: Determinants of wages for men and women, median regression with agency dummies

	(1)	(2)	(3)	(4)
A. All occupations	0.237*** (0.081)	0.145* (0.079)	0.055 (0.054)	-0.018 (0.064)
Observations	14,216	11,675	11,675	11,675
R-squared	0.35	0.33	0.49	0.49
B. Clerical occupations	-0.038 (0.041)	-0.033 (0.040)	--	-0.012 (0.054)
Observations	6630	5293	--	5293
R-squared	0.43	0.43	--	0.49
C. Professional, technical, managerial occs	0.109 (0.077)	0.130 (0.096)	--	-0.038 (0.065)
Observations	4857	2841	--	2841
R-squared	0.19	0.21	--	0.40
Ads from agencies with both female, male ads only	--	Yes	Yes	Yes
Aggregate occ dummies	--	--	Yes	--
Agency dummies	--	--	--	Yes

Notes: Coefficients on female-owned agency x female advertisement from median regression; standard errors clustered by agency in parentheses. All regressions include dummies for mixed-gender owned, corporate and (in columns 1 and 2) non-profit agency; their interactions with a dummy for female advertisement; a dummy for female advertisement and its interaction with the year dummy; two city dummies; a year dummy; and two month dummies. The 36 non-occupation covariates are listed in the data section (they do not include wage). Aggregate occupation controls are 6 dummies and the interaction of the aggregate clerical occupation with the year dummy. Columns 3 and 4 include agency dummies: 365 in panel A, 308 in panel B and 315 in panel C. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Appendix Table 1: Distribution of white-collar occupations, New York City Standard Metropolitan Area, 1950 and 1960

Occupation	%
Clerical	38.4
Managers/officials	21.7
Professional/technical	24.3
Sales	15.6
Total	100.0

Notes: Aggregated data from 1950 and 1960 Census of Population self-reported occupations. U.S. Census Bureau, 1963, Table 74, p. 34-271; U.S. Census Bureau, 1952, Table 35, p. 32-100.

Appendix Table 2: Detailed occupations and their share of the sample (%)

Clerical		Managers and Officials		Professional Technical		Sales	
Typist	3.7	Purchasing agent	0.9	Tabulating machine	0.4	Stock	0.4
Stenographer	2.1	Building manager	0.6	Teacher	0.1	Financial	0.3
Switchboard	1.4	Plant manager	0.2	Programmer	1.1	Real estate	0.2
Messenger	0.2	Foreman	0.5	Doctor	0.2	Medical	0.3
IBM operator	0.6	Credit man	0.7	Pharmacist	0.1	Insurance	2.1
Collector	0.2	Other	1.9	Personnel	1.3	Household	0.4
Bank teller	0.4			Model	0.1	Food	0.8
Agent	0.3			Technician	0.7	Electric	0.4
Keypunch	0.8			Librarian	0.3	Construction	0.3
Comptometer	0.6			Lawyer	0.4	Clothes	0.3
Cashier	0.5			Financial executive	0.5	Chemical	0.5
Office worker	3.2			Financial analyst	0.5	Auto	0.2
Other secretary	5.9			Estimator	0.5	Advertising	2.2
Advertising sec'y	0.7			Copywriter	0.6	Other sales	4.8
Legal secretary	0.9			Nurse	0.2	Market research	0.4
Executive sec'y	1.8			Editor/reporter	0.9		
Receptionist	3.8			Draftsmen	1.0		
Other clerk	5.5			Dietician	0.1		
Clerk-typist	2.1			Designer	1.3		
Shipping clerk	1.2			Scientist	2.5		
Accounting clerk	1.1			Engineer	6.6		
Filing clerk	0.8			Author	0.3		
Ass't bookkeeper	1.3			Assistant accountant	0.9		
Bookkeeper	3.0			Accountant	4.7		
Secretary-Steno	2.4			Artist	1.2		
Other	1.8			Other	3.2		

Note: 14,216 observations. The aggregate categories of Craftsmen (2.2%), Services (1.6%) and Not described (2.0%) are not subdivided into detailed occupations and are all majority male. Occupations that are majority male are in bold. The share of male advertisements in each occupation is calculated on the full sample, including non-agency advertisements, and both years.

Appendix Table 3: Help-wanted advertisement characteristics and their means (%)

Education, age, experience		Payment, advertisement		Tasks	
High school	2.3	Fringe benefits	3.1	Math, statistics	0.8
Some college	1.7	Commission	0.4	Good at figures	1.0
College	7.4	Bonus	0.1	Management	10.5
No experience	3.0	Board	0.7	Assistant, junior	10.5
Some experience	22.5	Lunch	0.6	Both assistant, management	1.3
Much experience	2.0	Opportunity for advancement	2.3	Typing	11.2
Young	4.2	Training provided	10.4	Stenography	7.1
Mature	2.6	More than one job in ad	13.1	Travel	1.3
Min age <20	0.5	Wage range given	21.4	Language	1.1
Min age 20-24	1.1	Wage range	3.9		
Min age >24	1.6	Customer interaction	17.3		
Max age <45	3.6	Female product or service	3.8		
Max age >45	0.0	Personality trait	0.6		
Both min, max age	1.2	Looks or physical trait	2.0		

Note: 14,216 observations. All variables except wage range are dummies; wage range is difference in upper and lower bound of log wage. 24.6% of advertisements have none of the above mentioned, while 59.0% do not mention education, age or experience.

Appendix Table 4: Determinants of advertising position open to women including agency name type

	(1)	(2)
Female-owned agency	0.223*** (0.048)	0.060*** (0.022)
Female-named agency	0.123*** (0.047)	0.077*** (0.026)
Male-named agency	-0.136** (0.058)	-0.054** (0.027)
Initials-named agency	0.170*** (0.041)	0.033 (0.032)
R-squared	0.11	0.60
Ad covariates except occupations	--	Yes
Detailed occupation dummies	--	Yes
Agency size (log)	--	Yes

Notes: 14,216 observations. Coefficients from linear probability for the probability of a position being open to women; standard errors clustered by agency in parentheses. An initials-named agency is one whose name includes an initial or initials followed by a surname. All regressions include dummies for mixed-gender owned, corporate and non-profit agency, two city dummies, a year dummy and two month dummies. The 36 non-occupation covariates are listed in the data section (they do not include wage). Detailed occupation controls are 75 dummies and the interaction of the aggregate clerical occupation with the year dummy. *** p<0.01, ** p<0.05, * p<0.1

Appendix Table 5: Determinants of advertising a position in a majority opposite-gender occupation including agency name type

	Female advertisements		Male advertisements	
	(1)	(2)	(3)	(4)
Female-owned agency	0.024 (0.029)	0.012 (0.024)	0.044*** (0.021)	0.026* (0.014)
Female-named agency	0.034 (0.043)	0.014 (0.035)	-0.010 (0.021)	-0.011 (0.015)
Male-named agency	-0.030 (0.039)	-0.060* (-0.031)	0.016 (0.013)	0.029** (0.013)
Initials-named agency	-0.137*** (0.032)	-0.056** (0.026)	-0.012 (0.043)	-0.007 (0.036)
Observations	5908	5908	8308	8308
R-squared	0.03	0.19	0.01	0.30
Other ad covariates	--	Yes	--	Yes
Agency size (log ads)	--	Yes	--	Yes

Notes: Coefficients from linear probability regression for the advertisement being for a majority-male occupation; standard errors clustered by agency in parentheses. An initials-named agency is one whose name includes an initial or initials followed by a surname. An occupation is majority male if more than 50% of all posted advertisements (not only those posted by agencies) in pooled years in the detailed occupation are aimed at men. An occupation is majority-female if at least 50% of all posted advertisements (not only those posted by agencies) in pooled years are open to women, except for the occupations “other clerk” and “other clerical” which are coded as majority male. For professional occupations this adjustment is irrelevant. All regressions include dummies for mixed-gender owned, corporate and non-profit agency, two city dummies, a year dummy and two month dummies. The 36 non-occupation covariates are listed in the data section (they do not include wage). *** p<0.01, ** p<0.05, * p<0.1

Appendix Table 6: Determinants of wages in vacancies open to women including agency name type

	Female advertisements		Male advertisements	
	(1)	(2)	(3)	(4)
Female-owned agency	0.046** (0.022)	0.004 (0.009)	-0.189** (0.079)	-0.026 (0.026)
Female-named agency	0.034 (0.025)	0.000 (0.012)	0.151 (0.094)	0.086** (0.043)
Male-named agency	0.068* (0.036)	0.038 (0.017)	0.143* (0.085)	0.090** (0.039)
Initials-named agency	0.042 (.037)	-0.019 (0.020)	-0.037 (0.100)	-0.009 (0.048)
Observations	5908	5908	8308	8308
R-squared	0.42	0.63	0.08	0.45
Detailed occupation dummies	--	Yes	--	Yes
Agency size (log ads)	--	Yes	--	Yes

Notes: Coefficients from median regression; standard errors clustered by agency in parentheses. An initials-named agency is one whose name includes an initial or initials followed by a surname. All regressions include dummies for mixed-gender owned, corporate and non-profit agency, two city dummies, a year dummy and two month dummies. Detailed occupation controls in panel A are in principle 75 dummies and the interaction of the aggregate clerical occupation with the year dummy, but 11 detailed occupations are never advertised to women and 3 never advertised to men. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$