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Search Costs and the Determinants of Job Search

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Emily A. Beam
University of Vermont and IZA

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IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

Search Costs and the Determinants of Job Search*

This paper examines how individuals select into job search in terms of their individual qualifications and perceptions and measures how recruiting additional applicants with a modest job-search subsidy affects selection. I use experimental evidence to examine individuals' decisions to attend and participate in a job fair. Thirteen percent of invited but unsubsidized respondents attend the job fair, and they are positively selected from the overall distribution of respondents. While the subsidy attracts those who are less qualified and less confident in their ability to find work abroad, the least qualified do not search intensively. Although the subsidy does not lead to any additional offers, it induces individuals with a high degree of uncertainty about their likelihood of job-finding to apply with recruitment agencies. These results demonstrate the importance of imperfect information about the returns to search and highlight how reducing search costs can increase search effort among those most uncertain about their prospects.

JEL Classification: O15, J64, D83, C93

Keywords: recruitment, job search, perceived returns, migration, field experiment

Corresponding author:
Emily A. Beam
Department of Economics
University of Vermont
233 Old Mill
Burlington, VT 05405
USA

E-mail: emily.beam@uvm.edu

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1. Introduction

Labor market frictions generated by high search costs can lead to higher rates of non-participation and worse-quality matches between firms and workers (McCall 1970; MacMinn 1980). These costs, and their impacts, are often heterogeneous across populations, affecting those who are geographically remote or credit constrained in particular (Abebe et al. 2020). However, search costs are not necessarily harmful; they could help screen out unqualified or uninterested candidates, as Kuhn and Skuterud (2004) and Hadass (2004) find in internet job search and as Alatas et al. (2016) find in the realm of social protection programs. Understanding the empirical correlates of job-search decisions is important in order to understand the potentially heterogeneous nature of search costs and labor market frictions. Additionally, understanding who responds to reduced search costs, and how that affects program effectiveness more broadly, has important implications for determining optimal recruitment strategies by firms, as well as for labor market program design (Heckman and Smith 2004).

This paper examines the determinants of job-search decisions and the role of search costs on selection into search. I ask, how do individuals' backgrounds and perceptions affect their job-search decisions, and how does incentivizing search affect these determinants? I consider the decision to look for work abroad in the rural Philippines, where the overseas labor market is large but job search is costly. I combine survey data from 860 individuals ages 20-35 with a novel dataset of overseas labor demand to measure how the perceived benefits and costs to search, based on individuals' qualifications, labor-market perceptions, and past exposure to the overseas labor market, affect their decisions to attend and apply for work at a nearby job fair for overseas work. Job and career fairs are commonly used by employers across both developed and developing countries (Abebe et al. 2018; Chang 2009), and they are a popular means of recruitment in the Philippines for both domestic and overseas positions (Esguerra et al. 2001).

I experimentally reduce search costs by offering individuals from randomly selected neighborhoods a modest incentive to attend this nearby job fair. Specifically, they receive a gift certificate to a local fast-food restaurant conditional on job-fair attendance. The randomized incentive to attend a job fair reduces search costs relative to respondents' outside option by offsetting the time and transportation costs of attending. I show that the cash value of the voucher is greater than the estimated time costs of traveling to the fair for most participants.[1] Although its value is not perfectly fungible, it will, at a minimum, offset the cost of one meal for approximately four people. Because all respondents are invited to the fair, it should not play an informational role. The incentive is similar in spirit to door prizes or giveaways that employers or coordinating organizations commonly used to entice job-seekers to attend job and career fairs.

The survey team hosted this fair in partnership with the municipality, and it attracted more than 750 participants, roughly 30 percent of whom were survey respondents. Enumerators tracked individuals' attendance and participation at the job fair, including interviews with employers and their outcomes, and I

[1] This measure does not account for the time cost of preparing for the fair and any potential psychological costs of search.

matched this administrative data with survey responses to compare the characteristics of those who search with and without the subsidy and to compare how those who stay and participate in the fair differ from those who leave immediately after retrieving their incentive.

Under standard job-search models, individuals will look for work if the expected benefits exceed the expected costs. Those with higher expected benefits from working abroad are more likely to attend the fair, which could include individuals who are more qualified for overseas work or who are more likely to successfully deploy overseas conditional on receiving a job offer. However, more-qualified workers may also have higher opportunity costs of searching and migrating, inducing negative selection on qualifications and education levels. Ultimately, the distribution of underlying relative returns to search, which reflect qualification levels, individuals' outside options, and the costs of search, will determine the overall pattern of selection (Roy 1951; Borjas 1987). The presence of imperfect information further complicates selection into job search if individuals' perceived returns to searching do not reflect their actual returns. Individuals may over- or underestimate their own qualifications, or they may be highly uncertain about their prospects (Diagne 2010; Falk et al. 2006a,b). Consequently, labor market perceptions may directly play an important role in the decision to search for work.

I expect that incentivizing attendance should bring more people to the job fair, but heterogeneous search costs mean that incentives also may affect selection into search, with the net impact ultimately depending on the relationship between search costs and ability (Abebe et al. 2020). Additionally, the impact on actual applications is potentially ambiguous, as it also will depend on the costs and benefits of applying conditional on attendance.

Among my study sample, 13 percent attend a job fair for overseas work. Of those, 79 percent apply and roughly 50 percent are invited for a final interview. These individuals are positively selected not only in terms of their qualifications for work, but also in their perceived likelihood of job-finding. However, perceived wages are not an important predictor of attendance or participation. A randomly assigned incentive dramatically increases attendance regardless of underlying qualifications, but the least qualified leave immediately after receiving their incentive, preventing potential crowd-out during the fair. Only those who are highly uncertain about their overseas job prospects stay to apply for work, indicating that the marginal applicant may use job search as a tool to learn about his or her own labor market prospects. In aggregate, however, the incentive does not increase the number of final interview offers.

This paper uses data from the same experiment described in Beam (2016), although the two papers differ in their temporal and topical focus. Beam (2016) examines the impact of job-fair attendance on employment outcomes and labor-market perceptions in the months following the fair, using randomized voucher assignment to instrument for attendance. That paper finds that while attending a job-fair does not lead to overseas migration, it does affect how individuals look for work. Specifically, attendance increases the likelihood of looking for work outside the region and being employed in the formal sector in the months following the fair, indicating that job fairs may help job-seekers learn about their labor market prospects. It

also discusses the impact of providing information about overseas wages and about qualifications for overseas work, which affect individuals' labor market perceptions but not their labor market outcomes.

In contrast, this paper unpacks that initial decision of *whether* to attend a job fair. Specifically, I focus on examining selection into attendance and participation and how reducing search costs with an incentive affects that selection into search. I also expand the set of predictors beyond standard characteristics like age and education by including labor-market perceptions, estimated search costs, and a proxy measure of qualifications for overseas work.

This paper joins a growing literature on the causal impact of reducing job-search frictions. Transportation subsidies increase the number of job matches (Phillips 2014; Abebe et al. 2018), and Abebe et al. (2020) find that incentivizing job applications leads to higher employment, particularly from those more likely to be credit constrained or face high search costs. Conversely, subsidizing job search in South Africa led to no change in employment or wages (Banerjee and Sequeira 2020), and a job-matching program in Jordan effectively yielded no matches (Groh et al. 2015). In the more general realm of program participation, Duflo and Saez (2003) find that incentivizing employee attendance at a retirement savings plan enrollment fair yields large increases in attendance, but those induced to attend are no more likely to enroll.

Additionally, this paper contributes to the literature on subjective expectations about labor-market prospects. These expectations play an important role in job-search and migration decisions (Sjaastad 1962; Harris and Todaro 1970; Diamond 1982; Mortensen and Pissarides 1994). Biases in expectations have been documented across multiple contexts and tend to be particularly strong in developing countries, where labor market frictions can be high (Nguyen 2008; Jensen 2010; Arcidiacono et al. 2012; Attanasio and Kaufmann 2014; Banerjee and Sequeira 2020). I find that the perceived likelihood of job-finding, as opposed to wage expectations, is particularly important in the decision to look for work. This complements McKenzie et al. (2013), who find that (male) potential Tongan migrants underestimate the likelihood of employment and wages they would earn, and Baseler (2020), who finds that families underestimate domestic migrant earnings. However, unlike McKenzie et al. (2013), who find that expected earnings are associated with higher migration application rates, I find that only the perceived likelihood of job-finding matters for the decision to search.[2]

2. Background

The Philippines is one of many nations, alongside countries such as Nepal and Bangladesh, that sends a large share of their workforce overseas as guest workers on temporary, largely formal, contracts. The pool of overseas Filipino workers (OFWs) is large and growing: approximately nine percent of Filipinos are living overseas, and nearly half of those abroad are on temporary work contracts. The Philippines deploys an average of 1.7 million temporary workers annually (CFO 2009; POEA 2013). On an individual

[2]As discussed later, one potential reason for this contrast is that McKenzie et al. (2013) calculate expected earnings unconditional on perceived job-finding likelihoods.

level, migration can bring large income gains for migrants and their families (Clemens et al. 2009; Adams and Page 2005), and in aggregate, total remittances have more than doubled over the past eight years to US$21.4 billion in 2012, accounting for roughly 8 percent of total GDP (BSP 2012).

Despite high demand abroad for both low- and high-skilled workers, the benefits of migration have been more difficult to access for rural Filipinos, who face greater search frictions than their urban counterparts in the form of higher informational and financial overseas search costs.[3] In the study location, the nearest overseas recruitment agency branch office is more than a two-hour bus ride away, although most interested applicants instead travel to metro Manila, which takes approximately 12 hours by bus, where there is a higher density of agencies, incurring substantial time and financial costs.[4]

Just like other labor markets with high search costs, limited access to job search opportunities mean that there are few opportunities for applicants to look for work abroad or even to learn about potential returns to search. The overseas labor market in Sorsogon Province therefore provides a useful context in which to examine individuals' self-selection into search: non-migrants are highly interested in working overseas, yet few who want to work abroad have taken steps to apply. In the study sample, of the 26 percent who reported they were "strongly interested" in working abroad, fewer than half had ever applied. Although job fairs are the main way agencies recruit in rural areas, and most larger municipalities of the province hold fairs roughly once a year, only 14 percent of respondents, and 24 percent of "strongly interested" individuals, had ever attended a job fair for overseas work. Expanding access to job fairs by incentivizing attendance may provide those with limited information or high opportunity or transport costs with additional opportunities to learn about their prospects and apply for work abroad.

At typical job fairs, a small share of applicants is offered a job "on-the-spot"; more commonly, successful applicants receive invitations to the agency's office, usually located in metro Manila or another major city, for a final interview with the employer or additional testing (Tubeza 2011). For overseas employment, recruitment agencies can only recruit for job orders registered with the Philippine Overseas Employment Administration (POEA), the government agency charged with overseeing the recruitment and deployment of Filipino workers. However, agencies may also conduct "manpower pooling," in which they note those applicants who are qualified for positions that may arise in coming months. In general, the number of positions available at a given fair far exceeds the number of applicants, and the manpower pooling option ensures that all qualified applicants are likely to be considered for vacancies, rather than fair applicants competing against each other. Consequently, encouraging job-fair attendance is more likely to lead to additional hires than to shift offers from less- to more-qualified applicants.

[3] Beam et al. (2016) document substantial attrition throughout the migration process, even among highly interested searchers.

[4] Among the 11 percent of respondents who had ever visited a recruitment agency to apply for overseas work, nearly 80 percent applied in metro Manila.

3. Data and experimental design

3.1. Survey data

In early 2011, enumerators surveyed 860 residents of Bulan, Sorsogon Province. They collected data on individuals' qualifications and labor market perceptions from a randomly selected sample of individuals ages 20-35 who had never worked overseas. I use a sample frame of seventeen *barangays*.[5] These include all ten *barangays* in Bulan classified as "urban" by the Philippine Statistics Authority (PSA, formerly the National Statistics Office), as well as seven that I randomly selected from the remaining list of rural *barangays*. I randomly selected 99 out of the 107 neighborhoods.

I used recent household rosters provided by *barangay* captains to randomly order households with at least one man aged 20-35 listed on the household roster and to randomly order households with at least one woman aged 20-35. Enumerators targeted five women and five men per neighborhood. They visited each household in order and screened the first potentially eligible member, selected randomly from the list of same-gendered respondents within the target ages of 20-35 in that household. To be eligible, the respondent must also have had a cellphone number and not previously worked overseas. Ineligible respondents were replaced with eligible respondents in the same household, and if the household had no eligible members, the enumerator would proceed to the next randomly selected household.

Unlike other studies about job-search costs, I do not screen based on whether the individual is currently employed, and one feature of the study is that it considers both individuals who are and are not currently employed, as each group may face different outside options and constraints. In the context of overseas migration, searching, or at least initiating search, for work overseas is particularly common while an individual is employed, because the process of finding work can be prolonged (one exception might be if a jobseeker needs to travel within the country specifically to look for work). Studies about job-search costs within domestic labor markets typically focus on non-working individuals because they are more likely to face credit constraints in search (Abebe et al. forthcoming) and because the duration dependence associated with spells of unemployment observed in many contexts makes their search decisions particularly critical (Kroft et al. 2013).

In the survey, I collected detailed information on individuals' qualifications for overseas work, primarily through their education and work history, which included both their position and the number of years worked at each job. I use this history to generate individual-level measures of years of relevant work experience. Additionally, I collected data on individuals' labor market expectations, including their expected wages and perceived likelihood of job finding overseas, based on Dominitz and Manski (1997). For expected wages, I ask "What is the most likely (monthly) salary you would be offered to work overseas?" To measure the perceived likelihood of job-finding, each respondent used a scale from 0-100 to answer the question: "Suppose

[5]The *barangay* is the smallest administrative unit in the Philippines. The municipality of Bulan has 63 *barangays*. In Bulan, each *barangay* has between three and ten *puroks*, or neighborhoods.

you submit an application for overseas work today. How likely is it that you will be offered overseas work in the next 12 months?" (See Appendix B for more details.) Figure 1 shows that responses are fairly evenly divided between a less than 50-percent chance (33 percent), 50-percent chance (30 percent), and more 50-percent chance (36 percent). I refer to this measure as the "perceived likelihood of job-finding abroad."

To estimate individuals' search costs, I multiple each individual's round-trip walking time by the estimated value of his or her time. I use Google's Distance Maps API to calculate walking time from each respondent's residence to the job fair.[6] The median respondent lives 1.2 miles from the job fair and the median one-way walking time is 25 minutes, but there is substantial variation across the sample: while the bottom ten percent live within one-half mile, the top ten percent live more than 5 miles away.

I use respondents' reported wages and work hours to calculate the value of their time, which is not available for individuals engaged in subsistence farming, childcare, or other non-remunerated tasks. To account for these tasks, I predict median regional wages based on individuals' age group, gender, and education level using the January 2011 LFS. Because the average person who only attends spends 20 minutes at the fair, and the average applicant spends 127 minutes, the average estimated cost of attendance is P54 (US$1.23) and the cost of application is P108 (US$2.47). Figure 3 shows the distribution of job-fair travel costs and of application costs, with a mean of P45(US$1.03) and P109 (US$2.49), respectively.[7]

Columns 1 and 2 of Table 1 report demographic characteristics of the sample respondents. Half of respondents are female (reflecting stratification by gender), 57 percent are married, and the mean age is 27 years. Roughly three-fourths of respondents reported completing at least high school, and 16 percent are college graduates. Thirty-six percent reported they were working at baseline, defined as "currently working for pay." roughly 50 percent had worked in Manila previously. While relatively few had applied abroad in the past (28 percent), exposure to overseas Filipino workers (OFWs) through family connections is high: 68 percent had at least one family member work abroad since 2005.

To assess how well this sample represents the broader Filipino population, I report demographic characteristics from the 2011 Philippine Labor Force Survey, excluding household members who were currently working overseas. The sample in columns 5 and 6 of Table 1 consists of all individuals ages 20 through 35, excluding the National Capital Region, which is highly urbanized. Columns 7 and 8 include all individuals from the Bicol Region, where Sorsogon Province is located. The samples are similar on most dimensions, such as the mean age and the share who are female, are married, and have worked for pay in the past.

Members of the sample are less likely to report they are currently working for pay at baseline compared with a more representative sample (36 percent vs 56 percent in areas outside the capital, after excluding those subsistence farmers).[8] These differences likely reflect lower labor force participation rates in rural

[6]Respondents who live farther away may further optimize by taking a tricycle, public jeepney, or private motorcycle to travel more quickly and comfortably. I rely on walking distance as I do not have data on mode of transport or on public transport rates for specific routes.

[7]This and all subsequent currency conversions are based on the average exchange rate from January to February, 2011, of 1 US$= 43.7976 PH (OANDA 2012).

[8]The overall labor force participation rate outside the capital is 64 percent, but I code LFS respondents whose primary

parts of the region, possible under-reporting of self-employment in the baseline sample, and replacement of respondents whose work schedules did not permit surveying with a different eligible household member.

3.2. Online job-posting data

In order to measure labor demand, I collected data from the most popular online job-finding database for overseas Filipino workers, workabroad.ph, on minimum educational and experiential requirements from 24,300 job-postings, representing roughly 230,000 vacancies.[9] I linked this data by education, years of relevant experience, and gender to respondents' backgrounds to measure the share of overseas jobs for which they are potentially qualified. I use a measure that reflects the likelihood of job-finding rather than wages because the returns to migration are high even for relatively low-paying overseas jobs.[10]

I collected data during the last two weeks of October 2010 on all current job postings. In addition to providing a description of the position, each recruitment agency or employer reports the minimum educational requirements, the minimum number of years of related experience, and for which genders the position is open.[11] I classify occupations based on name using two-digit codes from the International Standard Classification of Occupations, or ISCO-08 (ILO 2007). Appendix Table A.1 shows the characteristics of the top twenty occupation postings in their requirements, which represent 94 percent of posted positions matched to ISCO-08 codes. Using occupation-specific years of experience rather than total years of experience generates a more accurate measure of qualification level, and it is particularly important in this setting, as work experience in a specific position is often a main qualification for technical and vocational positions.[12]

Appendix Figure A.1 shows that there is a wide distribution of the number of overseas jobs for which respondents are potentially qualified, using two-digit ISCO-08 codes. I normalize this measure among respondents, separately by gender, in order to generate a relative measure of qualification levels, which I use throughout the paper. Appendix Figure A.2 shows the normalized distribution separately by education level, using a smoothed kernel density function.[13] Education correlates highly with the share of jobs for which respondents are qualified, but there is substantial heterogeneity after conditioning on educational attainment.[14]

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occupation is "worked without pay on own-family operated farm or business" as not working to be more consistent with the baseline survey, which asks only whether people "worked for pay."

[9]Competitors include jobsdb.com and jobstreet.com. However, workabroad.ph was most referenced by recruitment agencies as their main source for online recruits, and it averages the greatest number of job postings.

[10]The average overseas worker earned P28,500 (US$650) monthly in 2011-adjusted pesos (McKenzie et al. 2014), and for relatively less-skilled overseas domestic helpers, the Philippine government set a minimum wage of US$400 monthly. In contrast, the median wage of a permanent wage/salary worker in Manila was P404 daily in 2011, roughly US$185 per month with 20 work days. Outside the capital, the median wage was about P273 daily (US$125 monthly).

[11]Like the domestic Philippine labor market (Beam et al. 2020), overseas positions are highly sex segregated.

[12]Appendix Table A.2 details the work experience of respondents matched to ISCO-08 codes and the education, experience, and gender distribution of respondents in each occupation.

[13]Appendix Figure A.3 shows a high correlation between qualification levels using two-digit versus three-digit occupational codes. However, for some occupations, there are relatively few opportunities within the three-digit code but many within the two-digit code. For example, individuals with experience in the three-digit occupation of "sales shopkeeper" are likely qualified for other three-digit occupations within the broader two-digit grouping "salesperson." Because the two-digit code seems to correspond more closely to a job definition of "relevant experience," I prefer these more general codes.

[14]Only eight percent of vacancies have minimum educational requirements but do not require any relevant experience.

3.3. Job-fair outcomes

In partnership with the municipality of Bulan, the survey team hosted a job fair for overseas work on March 1 and 2, 2011, that was advertised broadly through fliers and radio. It attracted more than 750 participants, 29 percent of whom were survey respondents.[15] Participating agencies funded their own travel expenses, indicating their expectations that the fair would lead to successful placements. Enumerators tracked individuals' attendance and participation at the job fair to generate outcomes measures.

I consider four outcomes of interest: whether respondents attend the fair, participate in the fair by interacting with an information booth or applying, apply with a recruitment agency, and receive a final interview offer. A survey respondent is recorded as "attending" the fair if he or she registered his name at the entrance and received a number. Some attendees left immediately after exchanging their vouchers for the restaurant gift certificate; others attended both days of the fair and applied at several recruitment agencies. Respondents who enrolled in an online job-finding website, visited a passport information booth, or visited a recruitment agency booth are recorded as "participating."[16] Those who visited a recruitment agency booth are also recorded as "applying." The application rate is 11 percent from the entire sample, or 46 percent among those who attended the job fair. Roughly half of those who applied were invited to attend a final interview, and a few were offered a job on the spot; these respondents are recorded as having received a "final interview offer."

The job fair was not successful in directly leading to employment for attendees. Of the 210 respondents who attended the fair, at most two were eventually employed by a recruiter at the fair. However, nearly 50-percent of applicants passed the first-round interview, indicating that additional barriers to migration likely arise later in the process, which is also consistent with Beam et al. (2016), who find multiple barriers to overseas migration.

3.4. Randomization

I incentivized attendance by assigning respondents in randomly selected neighborhoods to receive a small, in-kind subsidy conditional on attendance. Recipients assigned to the treatment group received a voucher that they could exchange at the two-day job fair for a gift certificate worth P150 (US$3.42) to Jollibee, a popular fast-food franchise.[17] All respondents also received two text message reminders in the days leading up to the job fair to minimize differential salience effects based on the administration date of the survey. Randomization took place at the neighborhood level to reduce spillovers, stratifying at the barangay level. Table 1 shows that I cannot reject the null hypothesis that covariate means are jointly equal between treatment and control groups ($F = 1.35, p = 0.17$).

[15] Advertising indicated that this was a fair for overseas work, although one domestic employer from another province did participate.

[16] Participation is referred to as "attending, search intensely" in Beam (2016). Enrolling in the website could also be thought of as applying for work, but unlike visiting a recruitment agency booth, there is no immediate feedback on one's qualifications or opportunity to learn about potential jobs.

[17] This voucher treatment was cross-randomized with two information treatments, discussed in Beam (2016). I include binary indicators for information treatment assignment in all specifications.

3.5. Empirical strategy

I estimate the following regression specification using ordinary least squares to measure the causal intention-to-treat (ITT) of the voucher treatment on job-fair attendance, participation, application, and final interview offers.

$$Y_{ijk} = \alpha + \beta Voucher_{jk} + X'_{ijk}\gamma + S'_k\delta + \epsilon_{ijk} \quad (1)$$

where individual i from neighborhood j in stratification cell k has binary job-fair outcome Y_{ijk}. The binary variable $Voucher_{jk}$ is equal to one if neighborhood j from stratification cell k is assigned to the incentivized treatment group. X_{ijk} is a vector of individual-level covariates, S_k is a set of stratification cell dummy variables, and ϵ_{ijk} is the individual-specific error term. I cluster standard errors at the neighborhood level.

4. Results

4.1. Determinants of job-fair participation

Table 2 shows that job-fair attendees and applicants who are not incentivized are positively selected in terms of education and qualifications relative to the general population. Among non-incentivized attendees, 29 percent have completed college and 8 percent have not completed high school, compared with 16 percent and 27 percent of all respondents, respectively. Although attendees have less work experience, likely reflecting more time in education, they are potentially qualified for a larger share of jobs overseas. Additionally, they have greater exposure to the overseas labor market; 14 percent have a passport, 40 percent have applied for work abroad, and 76 percent have at least one extended family member who has worked overseas in the past five years, compared with 5 percent, 28 percent, and 68 percent in the full sample, respectively. Reflecting greater qualifications and overseas labor-market exposure, they are more likely to report they are strongly interested in working abroad (46 percent versus 26 percent), and 59 percent report a greater than 50-percent chance of being offered work abroad, relative to 36 percent in the full sample.

Columns 4 and 6 of Table 2 show that job-fair participants and applicants are progressively more positively selected in terms of their education, work experience, and labor market expectations, but that these differences are more modest. Panel A of Figure 2 shows there is a substantial, rightward shift in jobs qualified between those who attend and do not attend the fair, but the differences in levels of engagement are relatively modest. Column 8 shows that the set of applicants invited for a final interview have all completed at least high school, but they are fairly evenly divided between having some college or vocational training and being a college graduate. They are not necessarily more experienced relative to those who apply, but they are qualified for more jobs. The starkest difference is that those invited to a final interview are much more likely to have a passport (25 percent versus 13 percent of applicants) and to have applied for work abroad before (61 percent versus 48 percent of applicants).

Table 3 uses these covariates to jointly predict attendance, participation, application, and final interview offers, restricting to the pool of respondents who were not incentivized to attend the fair. Consistent with the existing literature finding that spatial search costs matter (Phillips 2014; Abebe et al. 2020), travel costs are a statistically significant, negative predictor of the likelihood of attendance and participation at the fair; a P10 increase in search costs is associated with a 0.5 percentage-point reduction in the likelihood of attending and a 0.4 percentage-point reduction in the likelihood of applying.

Education is a strong predictor of attendance, participation, and application, but the job qualification measure remains statistically significant even after accounting for education and experience. Those who are currently employed may have better outside options, discouraging search for work overseas, and may be more time constrained. Conversely, they may be better able to fund the costs of search. Overall, non-incentivized respondents who are currently working are less likely to attend the fair than those who are not working (12 percent versus 14 percent), but the difference is much smaller and not statistically after controlling for other covariates in Table 3.

A high share of respondents have exposure to work "far from home," either as having personal experience working in Manila (50 percent) or as having extended or immediate family members who have recently worked abroad (68 percent). Indicators for these variables do not predict job-fair attendance or participation in Table 3, but this could be because exposure in turn influences other covariates, such as labor market perceptions and passport holding. Appendix Table A.3 shows that, when paired with sparser controls, being exposed to work away from home is positively associated with greater engagement with the fair, and it is marginally statistically significant.

Even after accounting for respondents' background characteristics, such as education and work experience, labor market perceptions are a strong predictor of search. Specifically, a 10 percentage-point increase in the reported likelihood of being offered an overseas job is associated with a 1.7 percentage-point increase in the likelihood of attendance and of application. Those who report a 50-percent of being offered a job are less likely to attend or apply, though it is only marginally significant in the case of participation and application.

Higher expected overseas wages are not associated with increased attendance or application rates; in fact, they are negatively associated with attendance (statistically significant at the five-percent level) after conditioning on other factors. The lack of a relationship between expected wages and job-search behavior may reflect that overseas wages are many times higher than local wages, and so the perceived probability of being offered a job and being able to deploy overseas are more salient. In 2011-adjusted pesos, the average overseas worker earned P28,500 (US$650) monthly (McKenzie et al. 2014). The median respondent expectations are P20,000 (US$450), more than three times higher than the median wage outside of the capital of P5,460 (US$125). Although these results appear to contrast with McKenzie et al. (2013), who find a positive relationship between wages and the likelihood of migration, one difference is that the authors are considering *unconditional wages*, constructed by multiplying the probability of job-finding by expected wages.

Individual education-level indicators are positively correlated with the likelihood of receiving a final interview offer (column 4), but not statistically significant, reflecting the range of overseas jobs available to those of varying educational backgrounds. Those with a passport are 17 percentage points more likely to be offered a final interview. The benefits of already having a passport are consistent with conversations with recruitment agencies who noted that they prioritize passport holders because they are less likely to face bureaucratic difficulties deploying, and that they interpret having a passport already as a signal that the applicant is committed to working abroad.

Although passports are highly valued by recruitment agencies, most attendees (88 percent) and even most job-fair applicants (79 percent) do not have one. At the time of this study, a passport cost P950 (roughly $US20), one of lowest passport costs globally (McKenzie 2007), but many bureaucratic challenges remain. In addition to paying the application fee, applicants need to obtain multiple documents, including a certified birth certificate and a second form of photo identification. In addition to the challenges of acquiring documentation, they also need to make at least two trips to the regional capital, roughly a two-hour bus ride away, to complete the process. Beam et al. (2016) subsidized passport applications for randomly selected individuals and found that standard out-of-pocket costs ranged between P1,250 to P2,350 ($US 28-52). Any issues with their documentation, such as if their birth was not initially registered or if there are any typographical errors in their birth certificate, add substantial financial costs and delays.

4.2. Impact of subsidy on selection into search

Providing an incentive to attend a job fair increases attendance by 37 percentage points, a 270-percent increase from the 14 percent control-group attendance rate, as column 1 of Table 4 shows. While many of those who attend leave immediately after arriving, the incentive raises participation and application rates (columns 4 and 7, respectively), increasing the likelihood of participating by 10 percentage points and of applying by 4 percentage points. The impact on the likelihood of being offered a final interview (column 10) is close to zero and not statistically significant, indicating that these marginal applicants largely do not pass the first stage of the interview process.

To examine why, despite an increase in applications, is there no change in interview offers, Table 2 compares job-fair attendees from the control group with the incentive group, showing that they differ substantially on multiple dimensions. Incentivized attendees have completed less education, are less likely to be interested in working abroad, report a lower perceived likelihood of job-finding abroad, and are potentially qualified for fewer overseas jobs. Is this because the incentive attracts only the least qualified attendees? The remaining columns of Table 4 suggest that in fact, the voucher attracts individuals regardless of their potential qualifications for overseas work; the interaction between jobs qualified and the voucher is close to zero and not statistically significant.[18]

[18]Because there is high demand for Filipino workers in both low and high-skill positions, using education alone is likely to miss important variation within skill levels that can affect hiring decisions (Appendix Figure A.2). Indeed, Appendix Table A.5 shows the same lack of interaction effects when using binary education indicators.

Because the opportunity cost of time and available resources to initiate job search is likely heterogeneous, the subsidy could affect attendance and application rates differently based on current work status and search costs. Appendix Table A.4 shows, however, that the subsidy does not have differential effects along either dimension.

Table 2 shows that the relatively negative selection on qualifications, perceptions, and interest in work abroad among voucher recipients attenuates substantially for those who stay to apply at the job fair, and who are ultimately offered a final interview. Incentivized participants and applicants are less educated on average, but they are just as likely as control-group participants to report they are interested in working abroad at baseline. Among the 46 respondents invited to a final interview, the treatment group is less educated and less confident about their chance of being offered jobs abroad than the control group, but the gap in perceptions between the two groups is smaller. As before, Table 4 shows that the incentive does not have a differential effect on applications or final interview offers; the incentive increases the likelihood of applying fairly equally, regardless of individuals' underlying qualifications for overseas work, whether measured by the potential number of jobs available in Table 4 or education in Appendix Table A.5.[19]

Figure 2 demonstrates visually how the voucher "undoes" the positive selection among job-fair attendees. Those who attend are no more or less qualified than the full set of members of the voucher treatment group. The distribution shifts rightward among those who visit the information booth and those who apply for work; those who receive final interview offers are more positively selected, though still less so than as compared to the control group attendees.[20] The distribution of qualification levels is fairly similar between those offered final interviews, with a longer left tail for the voucher treatment group members.

4.3. The role of labor market perceptions

Table 2 shows that the perceived returns to search, reflected in the perceived likelihood of job-finding, vary substantially between those who do and do not attend and participate in the fair. These perceptions may incorporate private information that job-seekers hold about their own propensities for job-finding, such as their beliefs about the market, beliefs about their own qualification levels, beliefs about the difficulty of matching with the market, and factors like confidence, self-esteem, and optimism. They do not appear to be correlated with search costs; the correlation between travel costs and the perceived returns of job-finding is -0.051[21] Table 5 shows that, after conditioning on education and number of jobs qualified for, a 10 percentage point increase in the likelihood of being offered a job conditional on applying is associated with a 1.4 percentage point increase in the likelihood of attendance and a 1.2 percentage point increase in applications (columns 1 and 3, respectively). The perceived likelihood of job-finding is also positively

[19] The Table 4 results are unaffected by the use of 3-digit instead of 2-digit ISCO-08 codes, as shown in Appendix Table A.6.

[20] A two-sided Komologorov-Smirnov test rejects the equality of the attendee and applicant distributions ($p = 0.001$ and $p = 0.048$, respectively).

[21] Excluding those who report a 50-percent likelihood of job-finding, $r = -0.055$.

correlated with a final interview offer (column 5), but it is not statistically significant.[22] All specifications include an indicator variable for the approximately one-third of individuals who report a 50-percent chance of being offered a job (see Figure 1). I consider this group separately because it may reflect some additional degree of uncertainty beyond an estimated 50-percent chance. An extensive literature finds that respondents frequently use "50 percent" or "fifty-fifty" to indicate that the answer is beyond their control or that they simply don't know (Bruine de Bruin et al. 2000; Fischhoff and Bruine de Bruin 1999).

Labor market perceptions are likely to be influenced by past labor market exposure. Appendix Table A.3 shows that those without prior exposure to work far from home are most affected by the subsidy, as it has a relatively larger effect on attendance, participation, and even application for this group, although the difference in application rates is not statistically significant.[23]

As before, incentivizing attendance has a broad, positive effect on attendance, but the impact on application is concentrated exclusively among the one-third of respondents who report a 50-percent chance of job-finding; those who are likely to be most uncertain about their job prospects. In the context of overseas job finding, feelings of uncertainty may prevent respondents from applying for work abroad, even if their perceived net benefits are positive. It is only these highly uncertain individuals who use the incentive to attend the fair, participate, *and* apply for work. There is no detectable increase in final interview offers, even for this subgroup, although this could reflect a lack of statistical power.

The results in Table 5 indicate that the perceived likelihood of job-finding abroad reflects more than simply qualification level, and in fact, those with a high degree of uncertainty about their job prospects are more responsive to the voucher. In Table 6, I examine predictors of individuals' reported likelihood of job-finding, as well as predictors of whether they report a 50-percent chance of job-finding abroad. In column 1, I use the full range of perceived likelihood responses as a linear outcome variable, and in column 2, I exclude those who report a 50-percent chance of job-finding. Both columns include standard covariates used in Table 3 that reflect individuals' demographic characteristics and past educational and work experience. Education, interest in working abroad, and past experience applying for work abroad are the strongest predictors of individuals' reported likelihood of job-finding abroad

In column 3, I predict whether individuals report a 50-percent perceived likelihood of job-finding abroad. Individuals who have completed at least high school are more likely to report a 50-percent chance, while those who have worked in Manila are 8 percentage points (26 percent) less likely.[24]

[22]These regressions include controls for whether the respondent is strongly interested in working overseas, which modestly attenuates the coefficient on the perceived likelihood of job finding. However, excluding interest does not qualitatively affect the results.

[23]Including the interaction of voucher assignment with prior exposure to work far from home does not affect the coefficients on labor market perceptions.

[24]Not shown here for conciseness, I also estimate a model that includes indicators for whether the enumerator perceived that the respondent had trouble answering questions and his/her confidence when answering. Neither characteristic is correlated with individuals' likelihood of reporting a 50-percent chance, further indicating that this response pattern is more consistent overall with limited labor market exposure than with their inability to understand or answer the question.

5. Conclusion

In the absence of subsidies, I find that a nearby job fair attracts positively selected individuals in terms of their qualifications and perceptions. Incentivizing attendance using a modest subsidy "undoes" this selection by increasing attendance rates both among more and less qualified searchers, but many of the least qualified individuals then self-select out of participation in the fair, avoiding crowd-out and leaving a pool of applicants that are characterized by a large degree of uncertainty in their job-search prospects abroad. Even so, these marginal applicants are not likely to be offered a final interview.

This paper contributes to our understanding of how individuals select into programs and how reducing search costs affects the direction of that selection. In similar contexts, initiatives to incentivize program participation may have substantial impacts on take-up, and an untargeted subsidy can bring in a range of participants relatively similar to the underlying population. In this context, however, incentivizing job search is not an effective way to increase the quality of their applicant pool nor to facilitate additional matches in the short run.

While this study focuses on one particular job-search opportunity, it speaks more broadly to situations where individuals may have limited information about their job search prospects, perhaps due to the limited search experience, which can be exacerbated by high search costs (Banerjee and Sequeira 2020). These results contrast with Abebe et al. (2020), who find that incentivizing applications does lead to more and better matches, which may reflect differences in the context and nature of the incentive. First, the establishment of a nearby job fair already greatly reduced the cost of searching for work, particularly in comparison to traveling to the capital to search. Second, the study sample is designed to be as representative as possible of the general population, but not necessarily of the population of job-seekers. This distinction is appropriate in the case of overseas migration, as the vast majority of the population is not actively seeking work. As a result, however, a large share of study participants are not intersted in searching for work abroad *ex ante*.

These results also highlight the importance of labor market perceptions as a predictor of job-search behavior. I find that the perceived likelihood of job-findings, rather than perceived wages, is an important driver, consistent with potential applicants already observing high returns to migration. Additionally, the likelihood of job-finding may be especially important in contexts with high unemployment and underemployment or among sub-groups at higher risk of unemployment. The perceived likelihood of job-finding not only predicts search effort, but those who are uncertain about their labor-market prospects are most responsive to reduced search costs. This may be important if low-cost search opportunities allow applicants to gather information about the labor market, as Beam (2016) suggests, given that job-fair attendees later change how they search for work and are more likely to shift to formal-sector employment in the months after the fair.

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6. Figures and Tables

Figure 1: Distribution of perceived likelihood of job-finding abroad

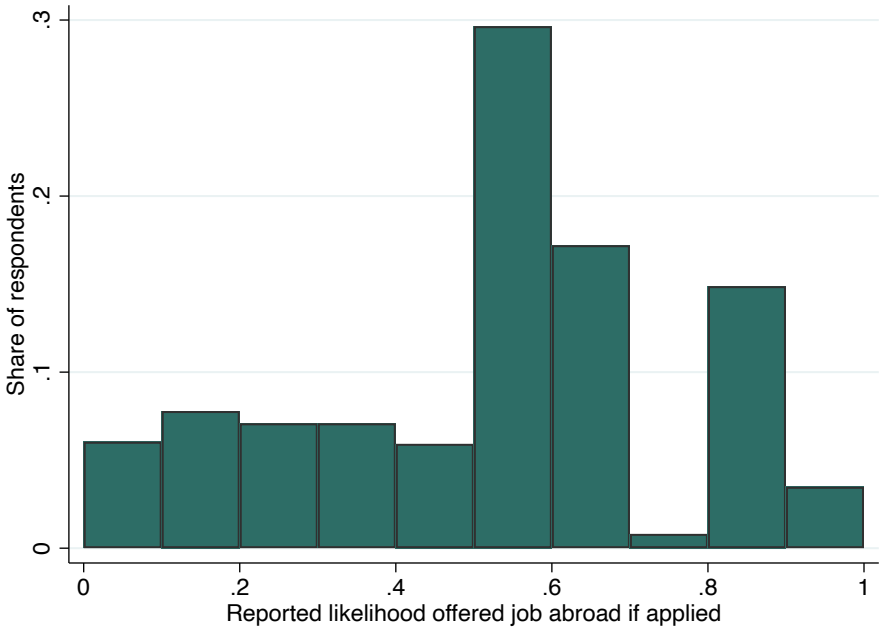
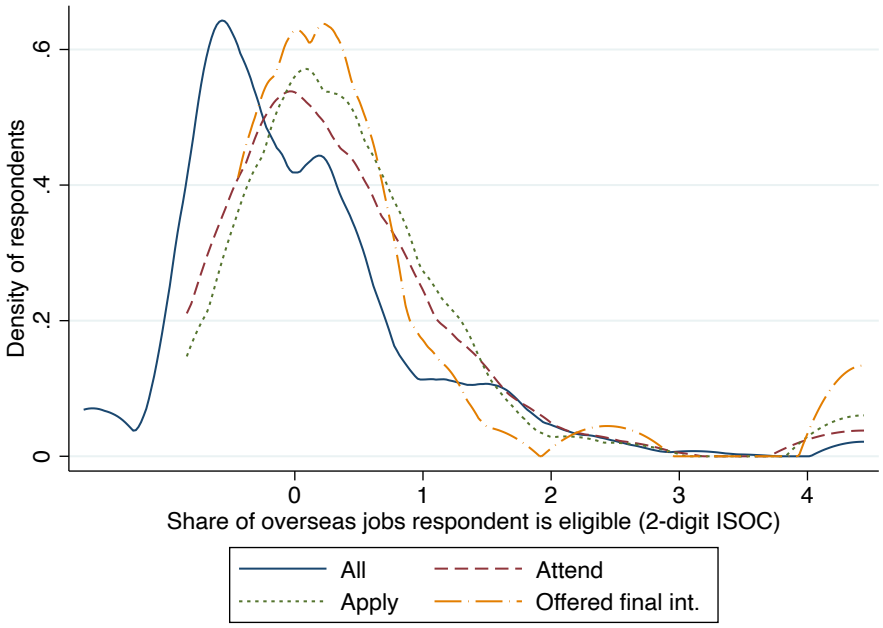
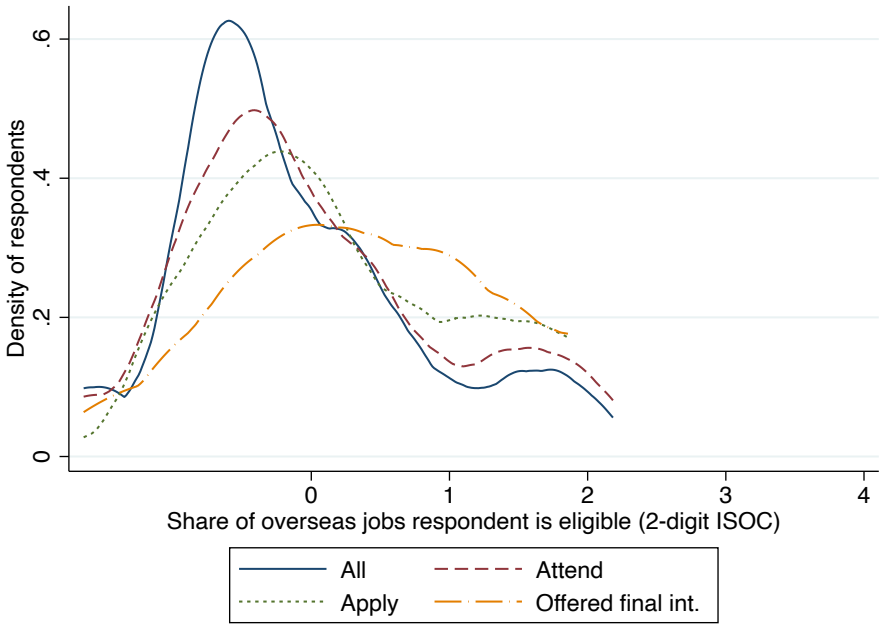


Figure 2: Distribution of overseas jobs for which potentially qualified, by job-fair participation



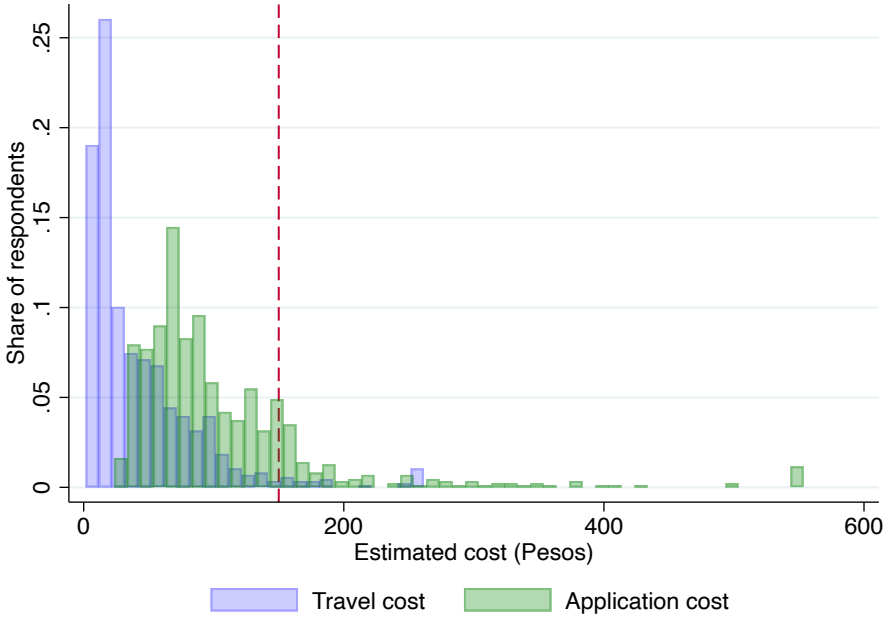
(a) Control group



(b) Voucher group

Notes: Share of overseas jobs eligible is windsorized at the 99th percentile.

Figure 3: Distribution of estimated travel and application costs



Notes: Costs based on estimating value of two-way travel time from residence to job fair, using walking time from Google Distance Matrix API and imputed hourly wages. Imputed wages calculated as the larger of either (a) calculated wages based on reported monthly wages, days worked, and hours worked from primary job or (b) predicted hourly wages based on regional median wages for an individual with the same gender, five-year age bracket, and education, based on the January 2011 LFS. Costs windsorized at the 99th percentile. Dashed line indicates P150 cash value of subsidy.

Table 1: Descriptive statistics and balancing tests

	Bulan sample				LFS, excluding NCR		LFS, Bicol Region	
	Mean	S.D.	P-value	N	Mean	S.D.	Mean	S.D.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	0.50	0.50	0.09*	860	0.49	0.50	0.48	0.50
Age (mean)	27.21	4.44	0.96	860	27.03	4.64	27.19	4.69
Married	0.57	0.49	0.81	860	0.52	0.50	0.54	0.50
Travel cost (hund. pesos)	0.45	0.57	0.36	856				
High school graduate	0.31	0.46	0.77	860	0.30	0.46	0.31	0.46
Some college or vocational	0.25	0.44	0.28	860	0.20	0.40	0.17	0.38
College graduate	0.16	0.37	0.05*	860	0.16	0.37	0.13	0.34
Working at baseline	0.36	0.48	0.69	860	0.56	0.50	0.52	0.50
Ever worked	0.85	0.36	0.48	860	0.87	0.34	0.88	0.32
Ever worked in Manila	0.50	0.50	0.71	669				
Total years experience	4.30	5.27	0.85	860				
Household income (thou. pesos)	5.82	6.58	0.12	860				
Jobs qualified, norm.	0.00	1.00	0.04**	860				
Strongly interested work abroad	0.26	0.44	0.01**	860				
Currently has passport	0.05	0.22	0.57	847				
Ever applied abroad	0.28	0.45	0.22	860				
Any family abroad since 2005	0.68	0.47	0.33	860				
Pr(job offer abroad)	0.50	0.26	0.39	854				
Pr(job offer abroad) = 50	0.30	0.46	0.39	854				
Expected overseas wages (,000 pesos)	26.83	17.27	0.36	839				
Joint test of covariates, p-value			0.168					

*** p<0.01, ** p<0.05, * p<0.10

Notes: LFS data from 2011 Philippine Labor Force Survey, adjusted using population weights. Both samples include individuals ages 20-35 who are not currently working overseas. Columns 5 and 6 include all people outside of the National Capital Region, and columns 7 and 8 include all residents of Bicol Region. The 2011 LFS does not ask about vocational training, so "some college or vocational" is restricted to those who have completed some college. "Currently employed" in LFS data is defined as having worked at least one hour or had a job in the past week, excluding those whose primary occupation is "worked without pay on own-family operated farm or business." Household income top-coded at P40,000. Tests for statistically significant differences in column 3 are clustered at the neighborhood level and include stratification cell fixed effects and indicators for two information treatments. Individual tests for travel costs, passport-holding, whether worked in Manila, perceived likelihood of job-finding, and expected overseas wages abroad exclude missing values.

Table 2: Respondent characteristics conditional on job-fair engagement

	All	Attendees		Participants		Applicants		Final interview	
		Control	Voucher	Control	Voucher	Control	Voucher	Control	Voucher
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Female	0.50	0.45	0.56*	0.43	0.49	0.44	0.57*	0.48	0.54
Age	27.21	26.21	26.77	26.16	26.74	26.21	25.80	26.18	25.38
Married	0.57	0.45	0.62***	0.44	0.53	0.46	0.43	0.42	0.38**
Travel cost (hund. pesos)	0.45	0.35	0.45	0.35	0.47	0.35	0.47	0.36	0.40
Less than high school	0.27	0.08	0.28***	0.04	0.23***	0.03	0.17***	0.00	0.08
High school graduate	0.31	0.24	0.32	0.22	0.32	0.21	0.34**	0.18	0.31
Some college or vocational	0.25	0.40	0.25**	0.44	0.32	0.44	0.37	0.42	0.46
College graduate	0.16	0.29	0.15***	0.29	0.13***	0.31	0.11***	0.39	0.15***
Working at baseline	0.36	0.31	0.34	0.34	0.42	0.34	0.34	0.33	0.54
Ever worked	0.85	0.83	0.88	0.82	0.92*	0.82	0.89	0.88	0.92
Ever worked in Manila	0.50	0.47	0.48	0.51	0.48	0.50	0.50	0.61	0.50
Total years experience	3.24	2.76	2.76	2.75	3.11	2.56	2.37	2.52	2.46
Household income (thou. pesos)	5.82	6.68	5.32	6.41	5.58	6.36	5.79	6.46	8.71
Jobs qualified, norm.	0.00	0.44	0.00***	0.48	0.22	0.56	0.23	0.71	0.42
Strongly interested work abroad	0.26	0.46	0.28***	0.46	0.42	0.49	0.51	0.58	0.77
Currently has passport	0.05	0.14	0.04**	0.15	0.04***	0.13	0.06**	0.25	0.17
Ever applied abroad	0.28	0.40	0.26**	0.47	0.34	0.48	0.40	0.61	0.77*
Any family abroad since 2005	0.68	0.76	0.65*	0.76	0.64*	0.75	0.71	0.76	0.85
<50% chance job offer	0.33	0.15	0.32*	0.15	0.19	0.11	0.11	0.15	0.15
50% chance job offer	0.30	0.26	0.35	0.22	0.38*	0.23	0.46*	0.18	0.31
>50% chance job offer	0.36	0.59	0.34***	0.63	0.43*	0.66	0.43	0.67	0.54
Expected overseas wages	26.83	25.48	25.8	26.81	25.71	27.52	23.71**	27.73	22.92***
Observations	860	80	130	68	53	61	35	33	13
F-test, joint equality of means			4.36***		11.21***		5.51***		14.45***

*** p<0.01, ** p<0.05, * p<0.10

Notes: Tests for statistically significant differences are clustered at the neighborhood level and include stratification-cell fixed effects.

Table 3: Predictors of job-fair attendance, participation, application, and final interview offer

	Attend	Participate	Apply	Final interview offer
	(1)	(2)	(3)	(4)
Female	-0.020	-0.025	-0.010	-0.008
	[0.032]	[0.034]	[0.032]	[0.025]
Age	-0.005	-0.005	-0.004	-0.003
	[0.003]	[0.003]	[0.003]	[0.002]
Married	0.001	-0.005	0.006	0.000
	[0.034]	[0.037]	[0.034]	[0.026]
Travel cost (hund. pesos)	-0.050***	-0.044**	-0.036*	-0.033**
	[0.018]	[0.018]	[0.019]	[0.013]
High school graduate	0.028	0.048	0.026	0.008
	[0.035]	[0.034]	[0.033]	[0.027]
Some college or vocational	0.117***	0.132***	0.104**	0.061
	[0.043]	[0.043]	[0.043]	[0.037]
College graduate	0.142*	0.146**	0.115*	0.089*
	[0.074]	[0.069]	[0.066]	[0.051]
Currently employed	-0.020	-0.002	0.012	0.006
	[0.039]	[0.036]	[0.035]	[0.031]
Ever employed	0.005	-0.019	-0.022	0.002
	[0.051]	[0.040]	[0.040]	[0.027]
Ever worked in Manila	-0.016	0.015	0.006	0.021
	[0.041]	[0.033]	[0.034]	[0.025]
Total years experience	0.001	0.001	-0.000	-0.000
	[0.003]	[0.003]	[0.003]	[0.003]
Household income (thou. pesos)	-0.004	-0.005**	-0.006**	-0.004**
	[0.003]	[0.002]	[0.002]	[0.002]
Jobs qualified, norm.	0.037*	0.030	0.040**	0.024
	[0.022]	[0.019]	[0.018]	[0.020]
Strongly interested work abroad	0.058	0.031	0.050	0.034
	[0.036]	[0.033]	[0.031]	[0.024]
Currently have passport	0.151	0.135	0.078	0.159*
	[0.109]	[0.106]	[0.094]	[0.090]
Family members abroad	0.011	-0.001	-0.008	-0.014
	[0.028]	[0.026]	[0.025]	[0.017]
Applied for work abroad	-0.020	0.024	0.022	0.032
	[0.036]	[0.035]	[0.035]	[0.029]
Pr(job offer abroad)	0.137**	0.132**	0.140**	0.052
	[0.057]	[0.061]	[0.053]	[0.042]
Pr(job offer abroad) = 50	-0.033	-0.053**	-0.045*	-0.033*
	[0.029]	[0.026]	[0.026]	[0.017]
Expected overseas wages	-0.002**	-0.001	-0.001	-0.000
	[0.001]	[0.001]	[0.001]	[0.000]
Observations	587	587	587	587
R-squared	0.146	0.157	0.161	0.152
Dep. variable mean	0.136	0.116	0.104	0.0562

*** p<0.01, ** p<0.05, * p<0.10

Notes: Robust standard errors clustered at the neighborhood level reported in brackets. Sample restricted to the control group. Missing values for travel costs, whether worked in Manila, passport-holding, perceived likelihood of job-finding abroad, and expected overseas wages are coded as zero, and missing data flags are included.

Table 4: ITT impact of voucher on job-fair participation, by qualification level

	Attend			Participate			Apply			Final interview offer		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Jobs qualified, normalized	0.054***	0.051***		0.047***	0.042**		0.047***	0.049***		0.023	0.026	
	[0.018]	[0.019]		[0.016]	[0.018]		[0.015]	[0.017]		[0.016]	[0.018]	
Jobs qualified, above median			0.074**			0.078**			0.071**			0.004
			[0.035]			[0.034]			[0.032]			[0.021]
Voucher	0.364***	0.365***	0.341***	0.103***	0.105***	0.104***	0.043*	0.042*	0.060**	0.001	0.001	-0.004
	[0.035]	[0.036]	[0.045]	[0.026]	[0.027]	[0.031]	[0.023]	[0.023]	[0.028]	[0.016]	[0.017]	[0.016]
Voucher X Jobs qualified, normalized		0.012			0.022			-0.006			-0.011	
		[0.034]			[0.030]			[0.026]			[0.022]	
Voucher X Jobs qualified, above median			0.041			-0.006			-0.041			0.009
			[0.059]			[0.054]			[0.044]			[0.034]
Observations	860	860	860	860	860	860	860	860	860	860	860	860
DV Mean, Control	0.136			0.116			0.104				0.0562	
Interactions jointly zero		0.724	0.485		0.472	0.910		0.824	0.354		0.601	0.784

*** p<0.01, ** p<0.05, * p<0.10|

Notes: Robust standard errors clustered at the neighborhood level reported in brackets. Specifications include individual baseline characteristics from Table 3, along with stratification cell and enumerator fixed effects. Missing values for travel costs, whether worked in Manila, passport-holding, perceived likelihood of job-finding abroad, and expected overseas wages are coded as zero, and missing data flags are included.

Table 5: ITT impact of voucher on job-fair participation, by perceived likelihood of job-finding abroad

	Attend		Participate		Apply		Final interview offer	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pr(job offer abroad)	0.151**		0.118*		0.121**		0.0406	
	(0.0615)		(0.0597)		(0.0525)		(0.0397)	
Pr(job offer) = 50%	-0.0216	0.023	-0.0445*	-0.011	-0.0369	-0.003	-0.0263	-0.018
	(0.0298)	[0.034]	(0.0262)	[0.031]	(0.0250)	[0.029]	(0.0170)	[0.020]
Pr(job offer) > 50%		0.084**		0.064*		0.065**		0.015
		[0.037]		[0.035]		[0.031]		[0.023]
Voucher	0.348***	0.359***	0.0594	0.058	-0.000819	0.001	0.0195	0.004
	(0.0757)	[0.061]	(0.0574)	[0.040]	(0.0381)	[0.026]	(0.0245)	[0.018]
V X Pr(job offer)	-0.00724		0.0477		0.0238		-0.0467	
	(0.126)		(0.116)		(0.0889)		(0.0575)	
V X Pr(job offer) = 50%	0.0636	0.048	0.0666	0.092	0.102**	0.113***	0.0147	0.007
	(0.0753)	[0.089]	(0.0546)	[0.056]	(0.0472)	[0.042]	(0.0285)	[0.028]
V X Pr(job offer) > 50%		-0.031		0.049		0.019		-0.014
		[0.086]		[0.070]		[0.051]		[0.035]
Observations	854	854	854	854	854	854	854	854
DV Mean, Control	0.136		0.116		0.104		0.056	
Interactions jointly zero	0.696	0.647	0.349	0.258	0.043**	0.031**	0.688	0.855

*** p<0.01, ** p<0.05, * p<0.10

Notes: Robust standard errors clustered at the neighborhood level reported in brackets. Specifications include individual baseline characteristics from Table 3, along with stratification cell and enumerator fixed effects. Missing values for travel costs, whether worked in Manila, passport-holding, and expected overseas wages are coded as zero and missing data flags are included.

Table 6: Determinants of perceived likelihood of job-finding abroad

	Chance job offer abroad		50% chance job offer abroad
	All	Excluding 50% chance	
	(1)	(2)	(3)
Female	-0.016	-0.020	0.001
	[0.019]	[0.026]	[0.040]
Age	0.003	0.005*	0.004
	[0.002]	[0.003]	[0.004]
Married	-0.034	-0.048	0.012
	[0.021]	[0.029]	[0.036]
Travel cost (hund. peso)	-0.024	-0.025	-0.060***
	[0.015]	[0.017]	[0.022]
High school graduate	0.107***	0.145***	0.191***
	[0.025]	[0.034]	[0.051]
Some college or vocational	0.150***	0.197***	0.193***
	[0.027]	[0.038]	[0.053]
College graduate	0.207***	0.278***	0.136**
	[0.039]	[0.053]	[0.063]
Currently employed	0.018	0.015	0.016
	[0.022]	[0.032]	[0.045]
Ever employed	-0.024	-0.034	-0.029
	[0.025]	[0.037]	[0.056]
Ever worked in Manila	0.037*	0.050*	-0.080**
	[0.021]	[0.029]	[0.038]
Total years experience	0.002	0.004	0.006
	[0.002]	[0.003]	[0.004]
Household income (thou. peso)	0.001	0.001	0.001
	[0.001]	[0.002]	[0.003]
Jobs qualified, norm.	-0.021	-0.035*	-0.001
	[0.013]	[0.019]	[0.023]
Strong interest working abroad	0.137***	0.181***	-0.061
	[0.019]	[0.026]	[0.041]
Currently have passport	0.012	-0.009	-0.069
	[0.035]	[0.047]	[0.078]
Family members abroad	-0.008	-0.005	0.037
	[0.017]	[0.023]	[0.029]
Applied for work abroad	0.067***	0.090***	-0.024
	[0.018]	[0.026]	[0.039]
Expected overseas wages	0.000	0.000	0.000
	[0.000]	[0.001]	[0.001]
Observations	854	599	854
R-squared	0.255	0.326	0.078
Dep. variable mean	0.498	0.497	0.299

*** p<0.01, ** p<0.05, * p<0.10

Notes: Sample excludes respondents with missing responses to perceived likelihood of job-finding abroad. Stratification cell and enumerator fixed effects included. Missing values for travel costs, whether worked in Manila, passport-holding, and expected overseas wages are coded as zero, and missing data flags are included.

7. Declaration of Interests

Declarations of interest: none

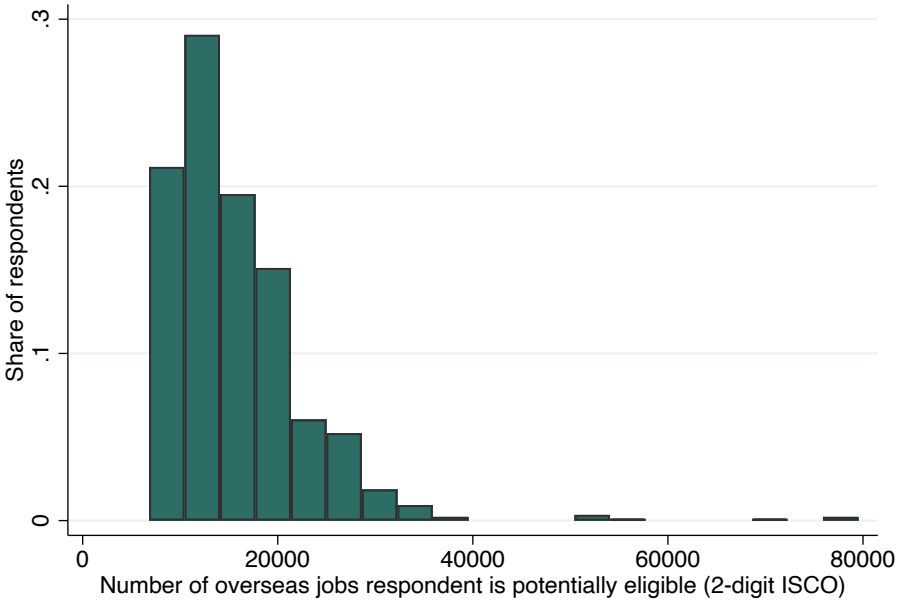
Appendix for "Perceived Returns and Job-Search Selection"

Emily A. Beam

October 13, 2020

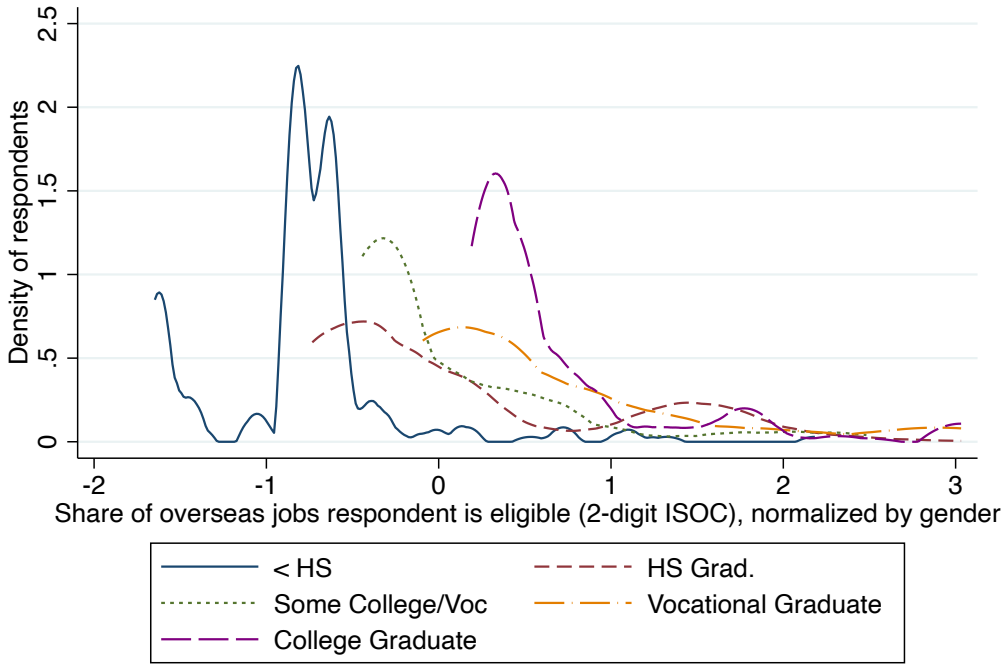
A. Appendix

Figure A.1: Distribution of overseas jobs for which potentially qualified



Share of overseas jobs eligible is windsorized at the 99th percentile.

Figure A.2: Distribution of overseas jobs for which potentially qualified, by education



Share of overseas jobs eligible is windsorized at the 99th percentile.

Figure A.3: Number of jobs potentially qualified, 2-digit vs. 3-digit ISCO-08 relevant experience codes

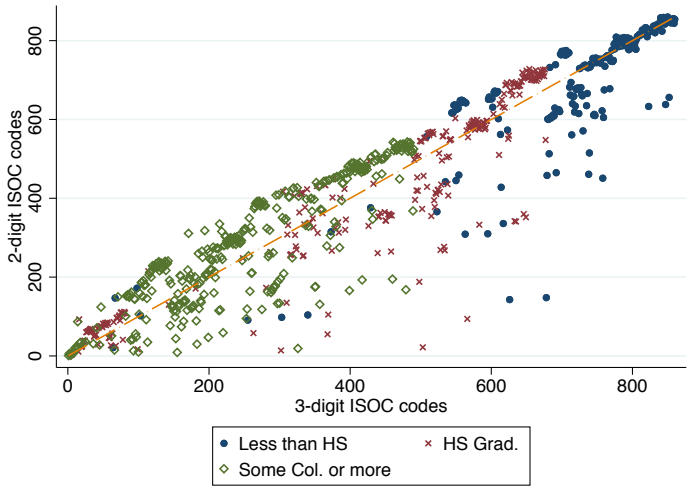


Table A.1: Twenty most common occupation postings on workabroad.ph, by 2-digit ISCO-08 code

Job-title, two digit	Positions		Open to...		Avg. req.	Share	Share
	Total	Share	Men	Women	exper.	require HS diploma	require college
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Science and engineering professionals	24183	0.12	0.99	0.1	4.59	0.90	0.87
Electrical and electronic trades workers	23390	0.12	0.95	0.13	2.97	0.70	0.22
Building and related trades workers	22202	0.11	1.00	0.06	3.00	0.64	0.08
Metal, machinery and related trades workers	22159	0.11	0.99	0.04	3.26	0.62	0.07
Science and engineering assoc. prof.	17807	0.09	0.97	0.09	3.80	0.82	0.48
Drivers and mobile plant operators	11784	0.06	0.97	0.07	2.91	0.57	0.03
Personal service workers	11239	0.06	0.65	0.62	2.07	0.66	0.19
Cleaners and helpers	11134	0.06	0.39	0.73	1.16	0.65	0.06
Health professionals	11013	0.05	0.42	0.92	2.28	0.93	0.9
Sales workers	8043	0.04	0.73	0.61	2.00	0.62	0.24
Legal, social, cultural and related assoc. prof.	4328	0.02	0.89	0.43	2.81	0.54	0.31
Stationary plant and machine operators	3356	0.02	0.89	0.15	2.96	0.67	0.09
Laborers in mining, cons., manufac. & trans.	3297	0.02	0.85	0.25	1.85	0.67	0.11
Food processing, wood working, garment and other craft and related trades workers	2648	0.01	0.89	0.31	2.32	0.65	0.12
Information and communications tech. prof.	2374	0.01	0.99	0.24	4.14	0.90	0.83
Business and administration prof.	2208	0.01	0.85	0.43	3.16	0.87	0.80
Customer services clerks	1907	0.01	0.56	0.83	1.84	0.70	0.38
Business and administration assoc. prof.	1888	0.01	0.85	0.39	3.03	0.78	0.69
Health associate prof.	1875	0.01	0.55	0.68	2.69	0.8	0.58
Production and specialized services managers	1722	0.01	0.99	0.15	5.75	0.91	0.89

Notes: The top 20 positions represent 94 percent of posted positions matched to ISCO-08 codes.

Table A.2: Characteristics of respondents, by 2-digit ISCO-08 code

	Numb. resp.	Avg. yrs. exper.	Avg. jobs qualif.	HS grad. or more	Some col. or more	Share female
	(1)	(2)	(3)	(4)	(5)	(6)
Laborers in mining, construction, etc.	288	3.12	14969	0.66	0.04	0.27
Sales workers	239	2.20	18975	0.89	0.18	0.72
Food preparation assistants	158	2.53	18284	0.56	0.03	0.87
Cleaners and helpers	52	2.69	17051	0.90	0.19	0.56
Refuse and other elem. workers	52	2.27	18408	0.79	0.04	0.58
General and keyboard clerks	43	2.74	16958	0.74	0.16	0.12
Other craft and related trades workers	42	8.28	12810	0.36	0.02	0.00
Legal, social and cultural professionals	41	3.01	13480	0.61	0.02	0.44
Personal service workers	39	2.87	17105	0.97	0.23	0.05
Protective services workers	37	2.2	14368	0.59	0.08	0.89
Skilled forestry, fishery and hunting	35	2.39	20116	0.97	0.69	0.69
Other workers	31	1.62	16467	0.87	0.23	0.52
Drivers and mobile plant operators	31	8.92	11035	0.39	0.00	0.00
Numerical and material rec. clerks	27	2.39	19598	0.96	0.37	0.41
Market-oriented skilled agricultural	24	2.79	18513	1.00	0.79	0.75
Handicraft and printing	16	4.28	23175	0.63	0.06	0.00
Teaching professionals	15	3.93	31836	0.87	0.07	0.00
Health associate professionals	15	5.17	42945	0.87	0.13	0.00
Customer services clerks	14	1.25	20122	0.93	0.57	0.50
Metal, machinery and related trades	13	3.19	30253	0.69	0.15	0.00
Personal care workers	13	3.38	16309	1.00	0.54	0.38
Electrical and electronic trades	10	1.85	22745	1.00	0.10	0.10

Notes: Counts reflect number of total positions reported by respondents, matched to two-digit ISCO-08 codes. Positions restricted to those with at least 10 respondents, reflecting 97 percent of all positions. Average years experience reflect years in that position. Average number of jobs qualified and education reflect averages across individuals with any experience in that job.

Table A.3: ITT impact of voucher on job-fair participation, by exposure to work far from home

	Attend		Participate		Apply		Final interview offer	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Ever worked in Manila								
Ever worked in Manila	-0.042	-0.039	0.004	0.001	0.012	0.011	0.028	0.023
	[0.041]	[0.041]	[0.034]	[0.034]	[0.034]	[0.034]	[0.025]	[0.023]
Voucher	0.347***	0.377***	0.094*	0.119**	0.029	0.054	-0.004	0.013
	[0.058]	[0.056]	[0.049]	[0.047]	[0.043]	[0.042]	[0.026]	[0.025]
Voucher X Ever worked in Manila	0.044	0.005	0.025	-0.004	0.037	0.008	0.009	-0.010
	[0.075]	[0.072]	[0.071]	[0.069]	[0.058]	[0.056]	[0.044]	[0.043]
Voucher + V X Ever Manila = 0	0.000***	0.000***	0.012**	0.013**	0.099*	0.105	0.869	0.906
Panel B: Any family members worked abroad								
Any family abroad	0.036	0.030	0.020	0.010	0.012	0.001	0.005	-0.006
	[0.030]	[0.030]	[0.026]	[0.026]	[0.024]	[0.024]	[0.016]	[0.016]
Voucher	0.403***	0.414***	0.126**	0.134***	0.026	0.034	-0.012	-0.003
	[0.072]	[0.073]	[0.050]	[0.050]	[0.042]	[0.042]	[0.028]	[0.028]
Voucher X Any family abroad	-0.050	-0.050	-0.030	-0.025	0.030	0.033	0.017	0.016
	[0.081]	[0.082]	[0.056]	[0.058]	[0.044]	[0.047]	[0.031]	[0.032]
Voucher + V X Family abroad = 0	0.000***	0.000***	0.0097***	0.0033***	0.091*	0.033**	0.811	0.509
Panel C: Worked in Manila OR Any family members worked abroad								
Far from home	0.038	0.035	0.051*	0.044	0.052*	0.045*	0.027	0.020
	[0.035]	[0.032]	[0.028]	[0.026]	[0.027]	[0.025]	[0.019]	[0.018]
Voucher	0.487***	0.514***	0.221***	0.243***	0.096*	0.119**	0.004	0.027
	[0.083]	[0.083]	[0.064]	[0.062]	[0.054]	[0.053]	[0.043]	[0.044]
Voucher X Far from home	-0.138*	-0.156*	-0.134**	-0.147**	-0.058	-0.073	-0.006	-0.022
	[0.082]	[0.083]	[0.065]	[0.065]	[0.048]	[0.049]	[0.043]	[0.045]
Voucher + V X Far from home = 0	0.000***	0.000***	0.010**	0.0040***	0.200	0.096*	0.936	0.792
Controls	Sparse	Full	Sparse	Full	Sparse	Full	Sparse	Full
Observations	860	860	860	860	860	860	860	860
DV Mean, Control	0.136		0.116		0.104		0.0562	

*** p<0.01, ** p<0.05, * p<0.10

Notes: Robust standard errors clustered at the neighborhood level reported in brackets. Full set of controls include individual baseline characteristics from Table 3, and sparse set of controls exclude whether strongly interested in working abroad, whether currently has a passport, whether has searched for work abroad in the past, and overseas labor market perceptions. Stratification cell and enumerator fixed effects included. Whether worked in Manila was asked for a subset of the full sample (78 percent), so all specifications include an missing indicator and a missing indicator interacted with voucher treatment assignment. Missing values for travel costs, passport-holding, perceived likelihood of job-finding abroad, and expected overseas wages are coded as zero, and missing data flags are included when applicable.

Table A.4: ITT impact of voucher on job-fair participation, by estimated travel costs

	Attend	Participate	Apply	Final interview offer
	(1)	(2)	(3)	(4)
Travel cost (hund. pesos)	-0.014	-0.033	-0.021	-0.022*
	[0.022]	[0.021]	[0.020]	[0.012]
Voucher	0.352***	0.085***	0.037	-0.014
	[0.041]	[0.031]	[0.028]	[0.017]
Voucher X Travel cost	0.023	0.041	0.012	0.030*
	[0.053]	[0.028]	[0.026]	[0.018]
Voucher + Voucher X Travel cost= 0	0.000***	0.000***	0.049**	0.382
Observations	856	856	856	856
DV Mean, Control	0.136	0.116	0.104	0.056*

*** p<0.01, ** p<0.05, * p<0.10

Notes: Sample excludes individuals with missing travel costs. Robust standard errors clustered at the neighborhood level reported in brackets. Specifications include individual baseline characteristics from Table 3, along with stratification cell and enumerator fixed effects. Missing values for whether worked in Manila, passport-holding, perceived likelihood of job-finding abroad, and expected overseas wages are coded as zero, and missing data flags are included.

Table A.5: ITT impact of voucher on job-fair participation, by education

	Attend	Participate	Apply	Final interview offer
	(1)	(2)	(3)	(4)
HS graduate	0.039	0.060*	0.044	0.025
	[0.033]	[0.032]	[0.030]	[0.019]
Some college	0.075*	0.108**	0.086**	0.052**
	[0.044]	[0.043]	[0.040]	[0.025]
Vocational graduate	0.180**	0.225***	0.203***	0.108**
	[0.077]	[0.076]	[0.070]	[0.051]
College graduate	0.160***	0.161***	0.141***	0.101***
	[0.056]	[0.054]	[0.052]	[0.034]
Voucher	0.384***	0.134***	0.056*	0.018
	[0.060]	[0.040]	[0.029]	[0.017]
Voucher X HS graduate	0.007	-0.009	0.020	0.003
	[0.089]	[0.062]	[0.052]	[0.034]
Voucher X Some college	-0.057	-0.028	-0.008	-0.052
	[0.105]	[0.080]	[0.067]	[0.051]
Voucher X Voc. graduate	-0.139	-0.139	-0.062	0.100
	[0.144]	[0.133]	[0.127]	[0.117]
Voucher X Col. graduate	-0.030	-0.105	-0.104	-0.080*
	[0.090]	[0.089]	[0.071]	[0.048]
Observations	860	860	860	860
DV Mean, Control	0.136	0.116	0.104	0.056
Interactions jointly zero	0.845	0.703	0.574	0.424

** p<0.01, ** p<0.05, * p<0.10

Notes: Robust standard errors clustered at the neighborhood level reported in brackets. Specifications include individual baseline characteristics from Table 3, excluding jobs qualified and education, along with stratification cell and enumerator fixed effects. Missing values for travel costs, whether worked in Manila, passport-holding, perceived likelihood of job-finding abroad, and expected overseas wages are coded as zero and missing data flags are included.

Table A.6: ITT impact of voucher on job-fair participation, by qualification using 3-digit ISCO-08 codes

	Attend			Participate			Apply			Final interview offer		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Jobs qualified, normalized	0.038**	0.036*		0.037**	0.032*		0.034**	0.035**		0.016	0.020	
	[0.019]	[0.019]		[0.016]	[0.017]		[0.015]	[0.017]		[0.014]	[0.016]	
Jobs qualified, above median			0.065*			0.059*			0.054			0.014
			[0.038]			[0.036]			[0.034]			[0.025]
Voucher	0.361***	0.361***	0.349***	0.100***	0.101***	0.102***	0.040*	0.040*	0.056*	0.000	-0.001	0.004
	[0.035]	[0.035]	[0.047]	[0.026]	[0.027]	[0.032]	[0.023]	[0.023]	[0.029]	[0.016]	[0.016]	[0.015]
Voucher X Jobs qualified, normalized		0.007			0.020			-0.003			-0.013	
		[0.035]			[0.030]			[0.024]			[0.019]	
Voucher X Jobs qualified, above median			0.021			-0.006			-0.035			-0.009
			[0.064]			[0.057]			[0.044]			[0.033]
Observations	860	860	860	860	860	860	860	860	860	860	860	860
DV Mean, Control	0.136			0.116			0.104				0.0562	
Interactions jointly zero		0.850	0.745		0.497	0.916		0.897	0.433		0.496	0.791

*** p<0.01, ** p<0.05, * p<0.10|

Notes: Robust standard errors clustered at the neighborhood level reported in brackets. Specifications include individual baseline characteristics from Table 3, along with stratification cell and enumerator fixed effects. Missing values for travel costs, whether worked in Manila, passport-holding, perceived likelihood of job-finding abroad, and expected overseas wages are coded as zero, and missing data flags are included.

B. Measurement of Subjective Expectations

I use a series of questions about probabilistic expectations about the likelihood of job offers overseas and wages in line with Dominitz and Manski (1997) in developed- and Delavande et al. (2011) in developing-country contexts. Questions about job-finding are similar to those used in McKenzie et al. (2013), and respondents report their perceived likelihood of finding work using a simple 0-100 visual scale shown in Appendix Figure B.1. Enumerators explain the scale to each respondent and ask two practice questions to ensure the participant is comfortable with the wording of the questions and answers. The question wording follows:

Expected wages:

"What is the most likely salary you would be offered to work overseas?"

Perceived likelihood of job-finding:

Introductory script: *"Now I'd like to ask you some questions about your expectations for the future. Please use this scale to help you. A 0 means that there is no chance, and a 100 means that it is a sure thing. Please make your best guess. If you don't know or can't guess, you can say "I don't know.""*

"Suppose you submit an application for overseas work today. How likely is it that you will be offered overseas work in the next 12 months?"

Appendix Figure B.2 includes the modules with exact question wording for job-finding and wages.

Figure B.1: Visual likelihood scale for probability elicitation

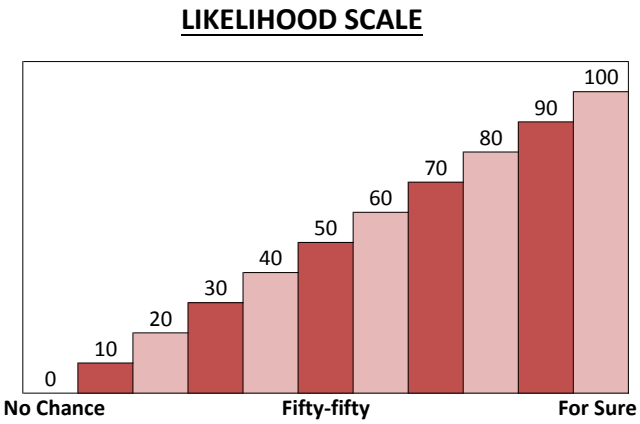


Figure B.2: Probability module

SECTION F: EXPECTATIONS AND PERCEPTIONS

Now I'd like to ask you some questions about your expectations for the future. Please use this scale to help you. A 0 means that there is no chance, and a 100 means that it is a sure thing. Please make your best guess. If you don't know or can't guess, you can say "don't know."

		DON'T KNOW = -2
F1	How likely is it that it will rain tomorrow?	
F2	How likely is it that Manny Pacquiao will win his next fight?	
F3	Suppose you submit an application for overseas work today. How likely is it that you will interview for overseas work in the next 12 months?	
F4	Suppose you submit an application for overseas work today. How likely is it that you will be offered overseas work in the next 12 months?	
F5	Suppose you are offered a job overseas today. How likely is it that you will leave for overseas work in the next 12 months?	
F6	Suppose you leave to work overseas. How likely is it that you will be a victim of abuse or exploitation?	
F7	How likely is it that you will be employed at any job 12 months from now?	
F8	[If employed] How likely is it that you will change jobs in the next 12 months?	