

Incomplete Information in Job Search: Evidence from a Field Experiment in the Philippines

Emily A. Beam¹

Version: January 23, 2013

JOB-MARKET PAPER

Abstract

Incomplete information can prevent individuals from investing optimally in job search. I test the impact of factual information and experience attending a job fair on individuals' job-search processes and labor-market outcomes through a field experiment I conduct in the rural Philippines. Assignment to a voucher to encourage job-fair attendance more than doubles the likelihood of looking for work in Manila in the two months following the fair and increases formal sector employment ten months after the fair by 38 percent. I find evidence that these effects are consistent with information or skill acquisition as a result of attendance. I also randomly provide individuals with information about average wages and minimum qualifications for overseas work. Information does not affect individuals' decisions to look for work overseas, though it does affect their beliefs in predictable ways. These results indicate that a relatively modest increase in labor-market exposure, such as that obtained from attending a job fair, can have lasting effects on individuals' job-search effort and employment outcomes. JEL Codes: O15, D83, J64

¹Department of Economics and Gerald R. Ford School of Public Policy, University of Michigan. E-mail: ebeam@umich.edu. This project is conducted with approval from the University of Michigan Institutional Review Board. This project is supported with research grants from the Gerald R. Ford School of Public Policy, Population Studies Center (funded by NICHD Grants T32 HD007339 and R24 HD041028, the Weinberg Fund, and the Mueller and Weinberg Graduate Travel Funds), International Policy Center, Center for International Business Education, Rackham School of Graduate Studies, and Sasakawa Young Leaders Fellowship Fund. I thank Raj Arunachalam, Robert Garlick, Susan Godlonton, Jessica Goldberg, Jessica Hoel, Jeff Smith, Rebecca Thornton, Dean Yang, and participants at the University of Michigan Informal Development Seminars for their excellent suggestions and comments. Jaye Stapleton, Jose Marie Gonzalez, and the SWAP team provided outstanding fieldwork and project management assistance. All omissions and errors are my own.

1 Introduction

Information is fundamental to how individuals decide when and where to search for work. I conduct a field experiment that randomly varies information and job-search experience in order to test the impact of information on these job-search behaviors. Improving information has been an important aspect of governments' efforts to promote employment in both developed and developing countries, as evidenced by the range of programs that provide potential job seekers with labor market information, job-search assistance, or training in how to search for work (Betcherman, Olivas and Dar 2004).

Although standard dynamic job-search models assume that individuals have complete information about wages and their likelihood of finding work (Pissarides 2000), a growing literature considers the impact of incomplete information on job-search decisions.² However, the degree to which individuals lack information about wages or their likelihood of obtaining a job offer, and how individuals learn about the returns to search, remain open empirical questions. Laboratory evidence by Falk, Huffman and Sunde (2006*b*) indicates that bad job-search outcomes may lead individuals to adjust downward their expectations of their own qualifications and search less. Böheim, Hovarth and Winter-Ebmer (2011) find evidence that displaced workers with high firm-specific wage components in their previous jobs have higher reservation wages and, as a result, longer unemployment durations.³ These two papers suggest a potential role for information and feedback, but the impact of information provision in actual job search has not been quantified.⁴

²Rothschild (1974) develops a general theory of individuals searching with unknown price distributions and demonstrates the existence of reservation wages. Burdett and Vishwanath (1988) extend his model into the context of job search, finding that incomplete information about the wage offer distribution results in reservation wages that fall with unemployment duration. Both Gonzalez and Shi (2010) and Falk, Huffman and Sunde (2006*a*) model this uncertainty in the context of individual ability, building models in which individuals redirect their search as they update beliefs about their own ability based on past job-search outcomes.

³They interpret this result as evidence that workers are overconfident in their own ability as a result of having high-paying jobs.

⁴In education, researchers find that individuals invest more in human capital when they learn about higher than expected returns through direct information provision (Jensen 2010; Nguyen 2008) or the expansion of labor market opportunities (Oster and Millett 2011).

I examine the role of incomplete information on search decisions by testing the impact of factual information and job-search experience on individuals' job-search and labor-market trajectories. I do so in the context of the overseas labor market in the rural Philippines, in which potential job seekers have particularly limited access to jobs abroad but high potential returns.⁵ I overcome potential endogeneity in individuals' information sets and search decisions by implementing a randomized field experiment, enabling me to identify the causal impact of reducing incomplete information along two separate dimensions - minimum qualifications and average wages - as well as the causal impact of providing job-search experience.

I conduct a baseline survey and assign individuals from randomly selected neighborhoods to a control group or to receive one of two types of information: a flier about average overseas wages or a tailored information treatment about the minimum qualifications for overseas work. If individuals underestimate overseas wages, as McKenzie, Gibson and Stillman (2012) find in Tonga, wage information may induce individuals to take steps to find work overseas. Because jobs are arranged prior to departure and because search is costly, an important margin by which a person decides to search may be her perceived likelihood of being offered a job abroad. The qualification information treatment provides minimum education and experience requirements for common overseas positions based on 23,910 online job postings, enabling individuals to update their beliefs about their own propensities of finding work overseas.

Additionally, I use an encouragement design to randomly induce attendance at a job fair by offering individuals a restaurant gift certificate for attending. Job fairs may provide attendees with labor market information and experience looking for work, and they are one of the primary ways in which the Philippine government makes it easier for provincial job

⁵Rural Filipinos also may increase their incomes by working in the capital of Manila, but information barriers are likely to be less substantial, as 39 percent of survey respondents previously had worked in Manila. Additionally, wages are much lower in the capital than abroad. At P439 (\$US10.03), average daily wages of wage and salary workers in the National Capital Region (metro Manila) are nearly twice as high as those in the Bicol Region, where this study takes place (Bureau of Labor and Employment Statistics 2011). By comparison, overseas Filipinos earn P28,500 (\$US651.16) monthly on average.

seekers to find work. Job-fair attendance may affect individuals' decisions to apply for work abroad, though the impacts may extend into the domestic labor market as well, particularly if the experience they gain is generalizable. I measure the impact of the information treatments on job-fair attendance by linking baseline survey data with job-fair administrative data, and I conduct a follow-up survey ten months after the job fair to measure the impact of job-fair attendance on the intensity and direction of individuals' search effort, as well as on their employment outcomes.

The two factual information treatments target incomplete information about wages and the likelihood of receiving a job offer for overseas work. I measure individuals' perceptions about the overseas labor market at baseline and in the follow-up survey. In contrast to McKenzie, Gibson and Stillman (2012), I find that individuals have reasonably accurate perceptions about overseas wages.⁶ Additionally, they have accurate perceptions about the minimum educational requirements for overseas work, although they underestimate the minimum experience requirements. Information about average overseas wages raises individuals' expectations about what they could earn abroad, but it does not induce them to look for work abroad. Information about minimum qualifications for overseas work modestly increases respondents' accuracy about the minimum experience requirements, but it does not affect their likelihood of looking for work overseas, which remains low for all treatment groups.

Attending the job fair does not affect individuals' likelihood of migrating abroad, nor their likelihood of taking steps to migrate abroad. However, it has large and persistent impacts on individuals' later job-search effort, though only within the domestic labor market. Using a retrospective panel of job-search behavior, I find that voucher assignment changes where individuals look for work. Voucher assignment more than doubles the likelihood of looking for work in Manila, where job opportunities are more plentiful and wages are higher, in the two months following the job fair, increasing it by 2.1 percentage points compared with a mean

⁶McKenzie, Gibson and Stillman (2012) find that non-migrants in Tonga report average overseas New Zealand wages that are 72 percent of the actual average. In this study, likeliest wage respondents report they could earn overseas is 93 percent of the intervention mean.

rate of 1.6 percent among the control group. Voucher assignment reduces the likelihood of looking for work within the province by 2.3 percentage points, compared with a control group mean rate of 4.3 percent. I estimate local average treatment effects using voucher assignment as an instrument for attendance, and I find that attendance increases the likelihood of looking for work in Manila by 5.7 percentage points and reduces the likelihood of looking for work within the province by 6.4 percentage points. These results are robust to alternative specifications over the ten months following the fair.

Additionally, voucher assignment increases the likelihood of being employed in the formal sector by 4.7 percentage points, a 38 percent increase compared with a mean rate of 12.4 percent among the control group, which is offset by a reduction in self-employment. This large effect suggests that job-fair attendance not only affects where individuals search for work, but that it also may affect search efficacy.

I adjust for multiple comparisons by computing average effect sizes, following Katz, Kling and Liebman (2007), as well as by adjusting outcome-specific p-values to control for the family-wise error rate (FWER) and false discovery rate (FDR). I find strong evidence that the voucher treatment results in an overall shift to search in Manila and to an increase in formal and informal sector employment. In terms of specific outcomes, the employment results remain robust to controlling for the FWER and FDR, although the impact on job search are just shy of significance at conventional levels after controlling for the FDR, indicating that some caution should be used when interpreting those individual outcomes.

The characteristics of those affected by job-fair attendance can indicate the potential relevance of each of these channels and also lend insight into the populations for which the gains of attendance are greatest. I find that those without formal job-search experience as well as those with work history in Manila change how they search, indicating that the fair may provide information or behavioral “nudge” into search (Paserman 2008; DellaVigna and Paserman 2005). Additionally, the increase in formal sector employment is concen-

trated among those with at least some prior job-search experience or work history in Manila, although those with formal job-search experience do not change their likelihood of search, suggesting that attending the fair may instead improve the effectiveness of their search effort.

This paper makes two main contributions. First, it provides empirical evidence on how incomplete information affects individuals' decisions to look for work abroad. I find that although factual information does affect individuals' perceptions, individuals initially have reasonably accurate information about average wages and minimum qualifications for overseas work. Additional information does not lead them to change their investment in the overseas labor market, which suggests that other barriers, such as high search costs, risk aversion, or imperfect information on other dimensions, should be considered when assessing why more people do not look for work overseas.

Secondly, this paper serves as the first study, to my knowledge, of the impact of job fairs. I find that increasing access to fairs is ineffective in terms of direct impacts, as individuals induced to attend are no more likely to migrate or to take steps to migrate. However, I find that the relatively modest experience of attending a job fair does have persistent labor-market impacts domestically, affecting where individuals look for work as well as their employment outcomes. For policymakers, these results imply that providing information or expanding access to job fairs will not be sufficient to encourage overseas migration. However, real-world exposure to the job-search process can be an important way for individuals to learn about their own returns to search or to improve their search ability, which can affect how they look for work and their employment outcomes.

The next section provides additional background on overseas migration, job fairs, and the setting of this study. Section 3 describes my experimental design, and Section 4 describes the data. I present results on the impacts of information and job-search experience on migration steps, job-search effort, and employment in Section 5, and I discuss the role of the factual information treatments and potential channels of job-fair attendance in Section 6. Section 7

concludes.

2 Background

2.1 Study location

I conduct this study in the municipality of Bulan in Sorsogon Province, located on the southern tip of the main island of Luzon, 12 hours from Manila by bus. Sorsogon is a relatively poor and isolated province: approximately 43 percent of families live below the poverty line of \$US300 per year, making it the 21st poorest out of 79 provinces (National Statistical Coordination Board 2006).⁷ With 92,000 residents, Bulan is the largest municipality in Sorsogon Province after the province's capital city (National Statistics Office 2007). It has a centralized downtown as well as far-removed rural areas. The average education level is high - 75 percent of my sample has completed at least high school - such that a substantial share of the population may be qualified for overseas work, but there is also substantial diversity in income and education levels. The local labor market is oversupplied with workers, and a large share of workers travel to urban areas, primarily Manila, to look for work. In my sample, 39 percent of respondents have worked in Manila in the past.

2.2 Overseas migration

The overseas labor market in the Philippines is large, formal, and highly regulated. The Philippines sends an average of 1.5 million new workers overseas each year (Commission on Filipinos Overseas 2008), and 94 percent of new contracts are signed with recruitment agencies, which tend to cluster in major urban areas like Manila or Cebu (Philippine Overseas Employment Administration 2011). Consequently, the benefits of migration have been more difficult to access for rural Filipinos, who have higher informational and financial search costs than their urban counterparts. In the municipality of Bulan, most applicants for

⁷The poverty line is set separately for urban and rural areas by province to reflect the minimum income required to meet a family's basic needs.

overseas work travel to Manila, where there are hundreds of licensed agencies.⁸ Consequently, although 25 percent of my sample are “strongly interested” and 72 percent have at least some interest in working abroad at baseline, only 28 percent have applied for overseas work before. Job fairs and similar recruitment activities are the main way in which local institutions aim to make overseas employment more accessible to residents living outside major urban areas. At these fairs, recruitment agencies collect applications and conduct preliminary interviews with applicants. Agencies invite qualified applicants to complete the process by visiting their offices in person, usually for a final interview with the employer and documentation processing. Governmental or educational institutions sponsor more than than 400 job fairs per year nationally, and in Sorsogon Province, larger municipalities like Bulan hold job fairs or smaller scale recruitment activities approximately once a year.⁹ Despite the relative frequency of fairs, only 14 percent of respondents in my sample had ever attended a job fair for overseas work.

Although the Filipino overseas labor market is in many ways unique, the decision to look for work abroad may be similar to the decision to search in other labor markets, particularly those in which applicants face costly search and have limited information about opportunities, wages, or their chances of finding work.¹⁰ Specifically, the overseas market is largely formal and highly regulated, with jobs secured prior to migrating. Contracts typically last two years, and while workers can renew them multiple times, they rarely result in permanent migration. In this way, job-search decisions in the Philippine overseas labor market bears a closer resemblance to search decisions in a domestic labor market than to standard migration decisions.

⁸There are no overseas recruitment agencies within Sorsogon Province

⁹In Bulan, there had not been an actual job fair in several years, but the municipality had held smaller-scale yearly “special recruitment activities” in which only one or two recruitment agencies came to the municipality to recruit.

¹⁰Also, search tends to be lumpy: visiting Manila to look for work abroad requires a substantial amount of time and possibly money, and search at a job fair, while less costly, still requires a substantial time investment.

3 Experimental Design

3.1 Sample selection

My sample frame consists of 96 neighborhoods from 17 *barangays* in the municipality of Bulan, Sorsogon Province. The *barangay* can be thought of as a village or, in more urban settings, a municipal district, and it serves as the smallest administrative unit in the Philippines.¹¹ Each *barangay* is composed of between three and ten formally defined neighborhoods.¹² The frame of neighborhoods is non-randomly selected to target those who are most likely to be qualified for overseas work. I select all ten *barangays* that are either classified as urban by the Philippine National Statistics Office or that are located in the central downtown areas. I randomly draw the remaining seven *barangays* from the remaining 53 rural and outlying *barangays*. This results in 107 neighborhoods across 17 *barangays*, of which I randomly select 96 to form the sample area.¹³

I select respondents from household rosters provided by each *barangay* office, which include the name, age, and gender of each *barangay* resident, by household. Because the overseas labor market is highly segregated by gender, I target an equal number of men and women from each *barangay*. I randomly select from each neighborhood five households with at least one potential male respondent aged 20-35 and five households with at least one potential female respondent aged 20-35.¹⁴ Upon finding a respondent, enumerators administer a brief screening questionnaire to confirm the respondent's eligibility. They verify that he is aged 20-35 at the time of the baseline survey. In addition, he must have a cell phone number and

¹¹With an overall population of 92,000, Bulan has 63 *barangays* and an average of 1,500 residents in each (National Statistics Office 2007).

¹²Neighborhoods, or *puroks*, are political subdivisions of each *barangay*. Figure A.4 depicts the neighborhood and *barangay* boundaries for one urban and one rural *barangay* in my sample.

¹³I originally select 99 *barangays* to target 990 respondents, but one selected neighborhood was inaccessible and rosters were not available for two others.

¹⁴A given household could therefore be in both the male and female sample. For households with multiple respondents of the same gender, I randomly order potentially eligible respondents, and enumerators attempt to survey the first randomly selected respondent.

no prior experience working abroad.¹⁵ When a target respondent cannot be interviewed due to ineligibility, out-migration, or refusal, the enumerator attempts to interview the next listed respondent of the same gender within that household. After two visits, if a household has no eligible members, its members cannot be located, or all potentially eligible members refuse to participate, the enumerator interviews the next randomly selected household. Overall, I obtain a response rate of 53 percent.¹⁶ Using this procedure, I generate a sample of 865 respondents, though I restrict my analysis to the sample of 862 respondents for whom I am not missing data on key covariates. This number is less than the targeted sample due to high levels of out-migration and time constraints.¹⁷

3.2 Randomization

Because respondents may have strong social networks in their nearby communities, I randomize information and voucher treatment assignment at the neighborhood level to reduce contamination from information spillovers.¹⁸ To increase power, I randomize within eleven stratification cells of nine neighborhoods each, based on neighborhood density and distance from the location of the job fair.¹⁹ This method minimizes the likelihood of an unbalanced sample due to spurious correlations (Bruhn and McKenzie 2009). I randomly assign one-third of neighborhoods to the control group, one-third to receive information about overseas wages, and one-third to receive tailored information about minimum qualifications for over-

¹⁵The screening questionnaire was required because information on cell phone ownership and overseas work experience was not included in the barangay rosters. Survey logs indicate that only five percent of contacted individuals were not eligible for the survey.

¹⁶Of surveys not completed, approximately six percent were refusals.

¹⁷There was not enough time to replace all targeted households that could not be contacted initially before the March job fair. The schedule was further constrained by a volcanic eruption in mid-February that halted operations for several days.

¹⁸Baseline results confirm that most spillovers are likely to occur within the neighborhood unit. Overall, 87 percent of those friends whom respondents see every day live within the same *barangay*, and 62 percent live within the same neighborhood.

¹⁹I calculate population density by dividing the population of each neighborhood listed on the provided rosters by the approximate area of each neighborhood, using *barangay* maps and satellite imagery. I then divide neighborhoods into terciles based on population density, and I sort them by distance to the job fair within each tercile. I generate blocks of nine neighborhoods with similar population densities and distance based on that sorting and randomize within each block.

seas work. Additionally, I cross-randomize these information treatments with a direct incentive to attend the job fair; because of budget constraints, only one-third of neighborhoods are assigned to receive the incentive.²⁰

3.3 Informational interventions

The wage information treatment consists of a flier that compares the average earnings of overseas Filipino workers with the average reported income of families in Sorsogon Province.²¹ Wage data for OFWs is taken from a POEA dataset of all new overseas contracts from 2008-2009 (McKenzie, Theoharides and Yang 2012). Data on income for Sorsogon families comes from a survey of approximately 5,000 households across the province in other municipalities (Beam, McKenzie and Yang 2012). In addition to giving the flier to the respondent, the enumerators read a short script describing the information it contains.²²

The qualification information treatment consists of information about the minimum educational and experience requirements for overseas positions. This information is tailored to respondents' own characteristics in order to maximize its relevance and potential impact.²³ Using the popular job-finding website *workabroad.ph*, I collect data on 23,910 job postings representing 228,914 total vacancies for temporary overseas work. Most employers explicitly restrict applications to only one gender, so I calculate separately the distribution of minimum education level and minimum years of experience for the most common overseas positions for men and women.²⁴ I use this data to generate a set of occupational cards that describe

²⁰The assignment distribution and realized sample size is shown in Appendix Table A.2.

²¹See Appendix Appendix B.

²²The wage information treatment is similar in spirit to those of Jensen (2010) and Nguyen (2008), who use field experiments to measure the impact of providing information about the returns to education on education completion and performance.

²³Wage information was not tailored for simplicity of implementation. While an average wage seemed relatively interpretable, an overall average qualification level did not. A large literature in public health finds tailored information can be more effective than general information in influencing individuals' behaviors. See Kreuter and Strecher (1996) for an example in health risk appraisal and Noar, Benac and Harris (2007) for a meta-analysis of a variety of printed health interventions.

²⁴For men, the eight positions are (in order) factory workers, skilled tradesmen, general laborers and construction workers, waiters and food service workers, heavy equipment operators, technicians, cooks and assistants, and janitors and cleaners. For women, the ten positions (in order) are domestic helpers, factory workers, caregivers/caretakers, housekeepers and cleaners, waiters and food service workers, salespersons

the distribution of minimum requirements for these positions.²⁵ To increase the relevance of the qualification information, respondents pick the two positions they are most interested in learning about,²⁶ and then the enumerators pick two more “best fit” positions by gender from the remaining choices, using a simple scoring rubric. Enumerators read a script that describes the four selected cards. The respondent receives a flier with the qualifications for the best-matched position out of the four shared cards, based on the rubric.

3.4 Encouragement design

To generate exogenous variation in the likelihood of job-fair attendance, I assign respondents in randomly selected neighborhoods (one-third) to receive a voucher that can be exchanged for a gift certificate worth P150 (\$3.42, roughly the cost of a dinner for a family of four) to Jollibee, a popular fast-food chain restaurant, which has a location in the central business district.²⁷ Respondents must pick up the gift certificates in person at the job fair, and they can only do so during the two days of the job fair. To avoid confounding the encouragement of the incentive with an informational component, members of both the voucher treatment and control groups are invited to attend the job fair, and every respondent receives two text message reminders in the days leading up to the job fair, which also minimizes potential differential salience effects based on the date of the survey.

4 Data

Figure 1 outlines the timeline of the project and the order of interaction with respondents. In January and February 2011, I generated the sample and conducted the baseline survey.

and assistants, cooks and assistants, receptionists, hairdressers, and sewers. I exclude nurses, which ranks in the top ten but has complicated licensing and certification requirements.

²⁵Appendix B provides sample cards and scripts used in this information treatment. When the same occupation is included for both men and women, I create different cards, as the minimum requirements are often different.

²⁶Although the cards are separated by gender, respondents can select any occupation, and the list and cards do not indicate which gender is dominant for each position.

²⁷This and all other conversions are calculated using the average exchange rate from January-February, 2011 of 1 USD = 43.7976 PHP (OANDA 2012).

Respondents answered questions about their work experience, interest in and exposure to overseas work, and beliefs about wages within and outside the Philippines. Upon conclusion of the survey, those living in randomly selected neighborhoods received information about wages overseas or information about minimum qualifications for overseas work. All respondents were then invited to attend a nearby job fair for overseas employment, and randomly selected respondents received the voucher that they could exchange at the fair.

4.1 Bulan Job Fair, 2011

I first measure the decision to initiate job search for work overseas by whether respondents attend a job fair for overseas work held March 1-2, 2011 (both weekdays). I partnered with the municipal government and Public Employment Service Office (PESO) to hold this fair, in which four overseas recruitment agencies and one domestic employer from another province participated. Upon arrival, job-fair attendees signed in with research staff.²⁸ The survey team advertised using fliers and radio in the week prior to the fair.²⁹ All survey respondents received two text message reminders in the days leading up to and on the day of the job fair. Overall attendance is 767. Survey respondents make up 29 percent of all attendees. I link attendance rosters with respondents using an approximate string-matching algorithm.³⁰

4.2 Follow-up survey

I supplement job-fair attendance data with responses from a follow-up survey conducted one year after the baseline survey. Attrition is of particular concern in this study because if migrants are missing from follow-up reports, actual increases in migration would be indistin-

²⁸Although job-fair attendees provided written consent to participate in the research component of the fair and were aware that researchers were tracking their numbers, they likely viewed the job fair as typical. Their first interaction was with staff members of the municipal PESO, which typically coordinates local recruitment activities and collects biographical data for their own records. The local PESO office also assumed full credit for the implementation of the job fair, further reducing any perceptions that this was a “research” fair.

²⁹Of non-survey respondents, 56 percent of attendees say they heard about the fair through radio, 17 percent through a flier, and 25 percent through a friend.

³⁰I match individual names based on pairs of letters in relatively similar positions of the string (Winkler 2004) and verify close matches with additional data on gender, age, and *barangay* when available. The specific protocol is available upon request.

guishable from differential attrition by treatment. By using proxy surveys with an alternate household member when the original respondent was unavailable, I obtain a follow-up rate of 97 percent, with full surveys for 80 percent of baseline respondents and proxy surveys for the other 17 percent.³¹ I find no evidence of differential attrition across treatments; details are provided in Appendix Table A.4. For the rest of the analysis, I use the set of 862 baseline respondents when evaluating the impact of treatments on job-fair attendance and participation, and I restrict the sample to the 826 respondents who participated in the baseline and follow-up survey, including proxy responses, when considering outcomes measured at the follow-up survey.

4.3 Estimation

I estimate intention-to-treat (ITT) effects of assignment to the three treatments using OLS with the following specification:

$$Y_{ij} = \alpha + \beta_1 Voucher_j + \beta_2 Qual_j + \beta_3 Wage_j + X_i' \gamma + S_j' \psi + En_i' \chi + \epsilon_{ij} \quad (1)$$

where Y_{ij} is the outcome measure for individual i living in neighborhood j , and $Voucher_j$, $Qual_j$, and $Wage_j$ are binary indicators for treatment assignment of neighborhood j . I also include a vector of individual-level covariates X_i ; stratification cell fixed-effects S_j for each of the 11 stratification cells, which are assigned at the neighborhood level; and enumerator fixed effects En_i . Because randomization takes place at the neighborhood level, I cluster standard errors at the neighborhood level, which also accounts for heteroskedasticity introduced by the linear probability model when estimating binary outcome variables.³² Because I cross-randomize the two information treatments with voucher assignment, I can also examine interaction effects of the voucher in combination with each information treatment. I report

³¹Additional details about those who attrit from the sample are included in Appendix Table A.1.

³²Assignment corresponds to actual treatment in all cases except for one neighborhood, in which enumerators accidentally administered the wrong treatments. Excluding that neighborhood or using realized treatment does not affect results.

these interacted impacts on job-fair attendance, but I restrict later analysis to the Equation 1 specification, as I find limited evidence of interaction effects.

4.4 Descriptive statistics and balancing tests

The first two columns of Table 1 present descriptive statistics of the full sample of 862 respondents, by treatment assignment. Columns 1 and 2 report covariate means of the non-voucher and voucher treatment groups, respectively.³³ By design, approximately half the sample is female. Nearly three-fourths of respondents have completed high school, and 16 percent have completed college. These education completion rates are consistent with ongoing work by Beam, McKenzie, and Yang (2012) in other parts of Sorsogon Province, as well as with statistics from the 2000 Philippine Labor Force Survey, which show that 58 percent of residents, and 73 percent of urban residents of Sorsogon Province have completed at least high school (National Statistics Office 2001). Slightly more than one-third of respondents are currently working at baseline; this includes anyone who worked for pay in the previous month, regardless of whether it was in the formal or informal sector, and 84 percent have ever worked in the past. A high share of respondents, 39 percent, have previously worked in Manila. The mean household income is P5,800 per month, approximately US\$132. Twenty-six percent report being strongly interested in working abroad (not shown, 72 percent report at least some interest in working abroad), and among all respondents, only 28 percent (45 percent of those strongly interested in working abroad) have ever taken steps to apply for work overseas.

In Column 2, I use one, two, and three stars to indicate a statistically significant difference in means for each covariate between the voucher and non-voucher groups at the ten, five, and one-percent levels, respectively. Although the main demographic characteristics are balanced, the voucher treatment group members are less likely to plan to apply for work overseas in the next 12 months. As indicated by the F-test statistic at the bottom of Column

³³Full sample means and standard errors are reported in Appendix Table A.3.

2, I cannot reject the joint equality of means between the voucher and non-voucher groups. Columns 3-5 present means for the information control, wage information treatment, and qualification information treatment groups, all of which include both voucher and non-voucher recipients. As before, in Columns 4 and 5, I indicate where covariate means are statistically significantly different from the information control group. The wage information treatment group is slightly younger than the information control group, but I cannot reject joint equality of the means between the wage treatment and information control groups, which yields a p-value of 0.66. The qualification information treatment group displays stronger evidence of covariate imbalance. Members of this group are older, more likely to be married, and more likely to have children. They are also marginally more likely to have family members working abroad. Consequently, I reject joint equality of means between the qualification information treatment and information control groups at the five-percent level (p-value = 0.03).

The imbalance in qualification treatment assignment is concerning if it provides evidence that enumerators manipulated treatment assignment. However, randomization was conducted at the neighborhood level, and it was done prior to implementation. Imbalance could arise if enumerators put forth differential effort to find respondents depending on the information treatment. The number of respondents interviewed per information treatment assignment, however, is essentially equal (292 received no information, 284 received wage information, and 286 received qualification information).

5 Results

In this section, I first examine the impacts of assignment to factual information and voucher treatments on steps to migration, job-search effort, and employment outcomes. I then confirm the robustness of my results to alternative specifications. Last, I report local average treatment effect estimates of the impact of job-fair attendance on job-search and employment

outcomes, using voucher assignment as an instrument for attendance.

5.1 Job-fair attendance and steps to migration

I examine whether the information and voucher treatments affect individuals' decisions to take steps to find work overseas, first looking at whether recipients were more or less likely to attend a job fair for overseas work. Figure 2 shows the estimated impact of the information treatments with and without voucher assignment, allowing for the possibility of interaction effects, using the full panel of 862 baseline respondents.³⁴ The voucher has a large, positive impact, nearly tripling the likelihood of attending the job fair, while the information treatments, with or without the voucher, have no effect.

Table 2 provides numerical ITT estimates of the impact of the information and voucher treatments on attendance. The first two columns include only binary treatment indicators for the information and voucher treatments, as in Equation 1. In case the information treatments have different impacts when combined with an incentive to attend, Columns 3 and 4 include interactions between information treatment assignment and voucher assignment. Columns 1 and 3 include only stratification cell and enumerator fixed effects, while Columns 2 and 4 add individual covariates. The voucher treatment raises the probability of job-fair attendance by 35.4 percentage points (Column 2) from a baseline of 12.7 percent, a 280-percent increase, making it a strong instrument for attendance. On their own, the information treatments have no impact on attendance. As seen in Figure 2, the qualification and wage information treatments, when combined with the voucher, have a small additional positive and negative impact, respectively. However, these interaction effects are imprecisely measured and not statistically significantly different from zero.

Job-fair attendance is not the only means by which individuals look for work overseas, and the information treatments could lead individuals to take other steps to apply. In Table 3, I

³⁴I omit covariates, stratification cell fixed effects, and enumerator fixed effects in Figure 2 so that the levels can be interpreted as attendance rates by treatment group.

estimate the impact of wage and qualification information treatment assignment on whether individuals look for work overseas in the ten months following the job fair, on whether they visit a recruitment agency for overseas work for the first time, and on whether they obtain a passport.³⁵ In all cases, I find that the information treatments have no effect on steps to migrate. One exception is that wage information treatment assignment increases passport acquisition, but this is only marginally statistically significant.

These results indicate that the information treatments do not substantially affect individuals' decision to migrate overseas. I explore potential reasons in Section 6, finding that information does affect individuals' perceptions about the overseas labor market. Table 3 also presents ITT estimates of the impact of voucher assignment, which also does not affect the likelihood of taking steps to migrate, though they are three percentage points (27 percent) less likely to report being "strongly interested" in working abroad.³⁶ The mean levels of these migration steps are low: only two percent of respondents looked for overseas work in the ten months following the job fair.³⁷ If, however, individuals' information sets and knowledge about how to search and apply for work are affected by attending a job fair, this could instead affect domestic labor outcomes.

5.2 Job-search effort and employment

In the previous section, I find that voucher assignment is a strong predictor of job-fair attendance. In this section, I estimate ITT impacts of voucher assignment and information treatment assignment, on labor market outcomes, interpreting the voucher as operating

³⁵Those who had visited an agency before at baseline are coded as a zero when estimating whether respondents visit an agency for the first time. Similarly, those who had a passport at baseline are coded as zero when estimating whether respondents obtain a passport. Restricting the sample to those who had never visited an agency or those who never had a passport yields similar results.

³⁶Individuals report whether they are not interested, a little interested, neutral, somewhat interested, or very interested in working abroad. I code individuals who respond with "very" or "somewhat" as being strongly interested in working abroad.

³⁷I test but do not report whether the voucher treatment affects the likelihood of working abroad as of the follow-up survey because, at 0.6 percent, the overseas migration rate is very low. Only five respondents are overseas at follow-up: four from the voucher control group and one from the voucher treatment group. LPM estimates do not show an impact of the information or voucher treatments.

through job-fair attendance.

The experience of attending a job fair may have persistent impacts on individuals' job-search and labor-market trajectories in the presence of incomplete information. With respect to a standard job-search model, information may update individuals' beliefs about the wage distribution (Burdett and Vishwanath 1988) or their job-offer arrival rate, in the case of learning about one's absolute ability, one's relative ability, or labor market conditions (Gonzalez and Shi 2010; Falk, Huffman and Sunde 2006*a*). Additionally, attendance may convey knowledge about how to search and apply for work that increases the effectiveness of search in other labor markets. Factual information about the overseas market may also have medium-run effects in the domestic labor market if it changes the relative returns to search or motivates individuals to obtain additional work experience or income, possibly as a "stepping stone" to work abroad, or as a result of the information priming individuals to think more about employment. Using follow-up survey data collected ten months after the job fair, I measure the impact of factual information and job-fair attendance on individuals' job-search effort and employment

Voucher assignment could affect the probability of job search on the extensive margin, as well as change the intensity and direction of search. I first examine whether individuals look for work in the two months after the job fair, which is most likely to reflect the direct impact of fair attendance. The impact on the intensity of search over the ten-month period may reflect this direct effect plus any indirect effects from previous changes in search behavior. For example, if individuals search more effectively in the months immediately following the fair, they may be less likely to search later. Alternatively, if attendance causes individuals to postpone local search and instead pursue opportunities in Manila earlier, impacts may attrit in the long run. For this reason, I also examine the total number of months individuals search in the ten months after the job fair.

In Column 1 of Table 4, I predict whether respondents look for work in the two months after

the fair using information and voucher assignment.³⁸ Because search may have higher returns in Manila, I differentiate between looking for work within Sorsogon Province and looking in Manila in Columns 2 and 3, respectively.³⁹ Column 1 shows that voucher assignment does not affect the overall likelihood of search, and it is imprecisely measured. Differentiating between looking for work within the province and in Manila in Columns 2 and 3, however, reveals that voucher assignment decreases the likelihood of looking within the province by 2.3 percentage points but increases the likelihood of looking in Manila by 2.1 percentage points. The factual information treatments have no statistically significant impact on whether individuals look for work in the two months following the fair: the coefficients are generally negative but very close to zero.⁴⁰ In Columns 4-6, I report the total number of offers received overall, within the province, or in Manila during the ten months following the job fair. Search in Manila induced by the voucher appears to be effective; the number of offers in Manila increases by 0.04, or by 37 percent compared with a rate of 0.12 offers among the control group, though it is only significant at the ten-percent level.

Although the wage information treatment does not affect the total number of months searched in Columns 4-6, there is also a reduction in the number of offers received overall as a result of the qualification information, consistent with the small, but statistically insignificant, reduction in the likelihood of looking for work observed in Columns 1-3. This is consistent with a positive, but statistically insignificant impact on the likelihood of informal employment I report later, which could reflect some individuals focusing on accumulating

³⁸I exclude the month of the fair itself in order to avoid double counting job-fair attendance.

³⁹Respondents are asked to classify whether they search within Bulan, outside Bulan but within Sorsogon Province, in neighboring Albay Province, in Manila, overseas, or in some other location. I classify search within Sorsogon and Albay as “within the province” because of Albay’s close proximity. Only 1.8 percent of respondents report ever looking for work in an “other location”; of them, only two do not also search in Manila.

⁴⁰Appendix Table C.1 of Appendix C demonstrates that the impact of voucher assignment on the likelihood of search is concentrated in the first month after the fair, and that it remains substantial ten months afterward. Overall, the voucher increases the unconditional total number of months looked for work in Manila by 0.09, or by 44 percent. Non-experimental estimates on the number of months searched conditional on ever looking for work in the ten months following the job fair indicates that those assigned the voucher search 0.24 months fewer inside the province, from a mean of 0.67, and search 0.32 months more in Manila, from a mean of 0.70.

work experience as a result of the qualification treatment, but not doing so through direct job search.

Individuals may be more likely to be working or may work in different sectors if job seekers are successful in finding work as a result of the redirection of search effort I observe. Job-fair attendance may also affect employment outcomes by increasing the effectiveness of search, which I do not measure directly. To examine the medium-run impact of the information and voucher interventions on employment, I consider whether respondents are working at the time of the follow-up survey and whether they are working in the formal sector, working in the informal sector, or self-employed.

Column 1 of Table 5 demonstrates that information and voucher assignments have no impact on whether individuals are working at the time of the follow-up survey. Assignment to the qualification information treatment has a positive impact on the likelihood of being employed, consistent with the earlier overall reduction in the number of months spent looking for work, but it is not statistically significant at conventional levels. Columns 2-4 reveal that the voucher induces individuals to shift into formal sector work from self-employment. Voucher assignment increases the likelihood of formal sector employment by 4.7 percentage points, significant at the five-percent level.⁴¹ This increase is offset by an 6.7 percentage-point reduction in the likelihood of being engaged in self-employment, which also includes farming and fishing.⁴² These magnitudes are large relative to the change in search effort, suggesting that attendance may also increase the efficacy of search.

⁴¹Informal sector employment increases by 2.4 percentage points, though this is not statistically significant. Testing for a change in the likelihood of being employed in the formal or informal sector produces a p-value of 0.02.

⁴²Because these reported employment categories are mutually exclusive, I can also estimate marginal effects at covariate means using a multinomial logit model. The results are broadly unchanged: voucher assignment increases formal sector employment by 4.4 percentage points ($p = 0.04$), and decreases self-employment by 7.1 percentage points ($p = 0.00$).

5.3 Adjustments for multiple comparisons

These results broadly indicate that in addition to increasing the likelihood of job-fair attendance, voucher assignment induces individuals to look for work in Manila rather than in the local labor market and to shift from self-employment to formal-sector employment. The informational treatments do not affect individuals' decisions to look for work abroad. In this section, I discuss the sensitivity of these estimates to adjustments for multiple comparisons and to other specifications.

Because main results are based on hypothesis tests from multiple outcomes variables, some hypotheses may be falsely rejected due to chance.⁴³ I employ two approaches to adjust for this concern.⁴⁴ My main specifications encompass ten unique outcome variables, which are naturally divided into three groups: migration outcomes (4), job-search outcomes (4), and employment outcomes (3).⁴⁵ I follow Katz, Kling and Liebman (2007) and compute the average effect size for each outcome group. That is, I estimate the following average standardized treatment effect τ_g for outcome group g with N total variables as the average of a standardized treatment effects from each outcome variable k , τ_{gk} .⁴⁶

$$\tau_{gk} = \frac{\pi_{gk}}{\sigma_{gk}} \tag{2a}$$

$$\tau_g = \frac{1}{N} \sum_{k=1}^N \tau_{gk} \tag{2b}$$

⁴³See Fink, McConnell and Vollmer (2012) for a detailed example.

⁴⁴Because the the analysis draws conclusions about the effectiveness of treatment on the outcomes measures reported in the previous section, one can think of these as “confirmatory” analysis, and I adjust these results for concerns about multiple comparison. In Section 6, I investigate potential mechanisms driving these and potential impacts for subgroups. Because that section primarily derives hypotheses and insights for future research, I am more interested in the magnitude and direction of estimated coefficients than in statistical significance. Those tests can be thought of as “exploratory” and therefore not subject to the same set of concerns (Schochet 2008).

⁴⁵I omit three variables that are linear combinations of the other hypotheses: whether the respondent looks for work anywhere in the two months following the job fair, the total number of offers he receives overall in the ten months following the fair, and whether he is employed at all.

⁴⁶The notation differs slightly from Katz, Kling and Liebman (2007) to be consistent with the later discussion of controlling the FWER and FDR.

where τ_{gk} is the treatment effect for outcome variable k in group g that is standardized by dividing the estimated treatment effect π_{gk} by the standard deviation of the outcome variable for the control group σ_{gk} . I measure the average treatment effect of the voucher and of each information treatment including the full set of covariates and stratification cell fixed effects used in previous specifications. I jointly estimate the π_{gk} using seemingly unrelated regressions to account for dependence between outcome variables within a group.

Table 6 reports the average effect size for each outcome group. I cannot reject the null hypothesis of no treatment effect on steps to migrate for the voucher or the qualification information, though I find a 0.09 standard deviation increase in taking steps to migrate for those receiving the wage information treatment, significant at the 10-percent level. With respect to the job-search outcomes, I reverse the sign of the local search and local offers variable to test whether there is evidence of a positive or negative shift to search in Manila. I find the voucher led to a 0.12 standard deviation increase in that domain, significant at less than the one-percent level. For the employment group, I reverse the sign of self-employment to test for evidence of an increase in formal and informal employment, and I reject the null hypothesis that the voucher had no effect at less than the one-percent level.⁴⁷ Table 6 confirms earlier results that the voucher has substantial impacts on individuals' job-search and employment outcomes, namely shifting their search from the local labor market to Manila, and increasing their likelihood of being employed formally (and informally).⁴⁸

One concern with the Katz, Kling and Liebman (2007) approach in this setting is that I am interested in the impact of individual outcome variables within each family as much as the family of outcomes itself, particularly in the case of the job-search and employment outcomes. To account for multiple comparisons at the individual outcome level, I control for the family-

⁴⁷I also test the more conservative hypothesis that the voucher shifted employment to the formal sector by reversing the signs of both informal employment as well as self-employment. I reject the null of no effect of the voucher at the ten-percent level.

⁴⁸One less-powered alternative is to conduct F-tests for the joint hypotheses of no treatment effects across multiple variables, without adjusting outcome signs. I still reject the null hypothesis of no treatment effect across the search and employment outcomes at the five-percent level.⁴⁹

wise error rate (FWER), the likelihood of falsely rejecting at least one hypothesis in a group of outcomes, and for the false discovery rate (FDR), the share of rejected hypothesis that are true (Benjamini and Hochberg 1995). The Bonferroni correction provides simplest and most conservative method to control the FWER, ensuring that it is no greater than α by using a revised critical p-value of $\alpha_{adj} = \alpha/N$, where N is the number of tests in the family. One refinement of that approach is the Holm step-down procedure (Holm 1979), which sequentially rejects hypotheses based on the ranked order of the p-values. I rank hypotheses from that with smallest p-value to that with the largest. If the hypothesis with the smallest p-value is less than α/N , then I reject it. If I reject the first hypothesis, I then test the second, rejecting a null effect for the second-smallest p-value if it is less than $\alpha/(N - 1)$. If I cannot reject the k th hypothesis, then I cannot reject any subsequent hypothesis. I proceed through all hypothesis until no further hypotheses can be rejected, rejecting the k th hypothesis if its p-value is less than $\alpha/(N - k + 1)$.

Finally, I control for the FDR using the Benjamini-Hochberg step-up procedure, which is similar in spirit to the Holm procedure, except in this case I start with the largest p-value, p_K , and move downward. Once I reject hypothesis p_k , I reject all outcomes with a smaller p-value (Benjamini and Hochberg 1995).⁵⁰ Though less conservative, the FDR is more appropriate for this context than the FWER if I am interested in the significance of individual outcome variables within a family, rather than the overall significance of the effects within family.

In Table 7, I report the significance of intention-to-treat estimates of voucher assignment on each outcome variable, using the outcome groups described previously, adjusting for the three measures described above:

1. Bonferroni (FWER): $p_{bon} = p_{adj} = pN$, where p is the uncorrected p-value.
2. Holm (FWER): $p_{adj} = p_k(N - k + 1)$, where k is the rank of p_k after ordering the p-

⁵⁰It is likely to be conservative under when the p-values are positively correlated (Benjamini and Yekutieli 2001).

values such that $p_1 < p_2 < \dots < p_N$. As this is a step-down procedure, begin with the lowest p-value, and $p_{holm} = p_{adj}$ for $k = 1$. Moving upward, $p_{holm} = \max(p_{adj}, p_{adj-1})$, where p_{adj-1} is the p-value from the previously (lower) ranked p-value.

3. Benjamini-Hochberg (FDR): $p_{adj} = pN/k$, where k is the rank of p , after ordering the p-values such that $p_1 < p_2 < \dots < p_N$ (Anderson 2008). As this is a step-up procedure, begin with the highest p-value, and $p_{BH} = p_{adj}$ for $k = K$. Moving downward, $p_{BH} = \min(p_{adj}, p_{adj+1})$, where p_{adj+1} is the p-value from the previously (higher) ranked p-value.

Results in Table 7 indicate that the decrease in individuals' interest in working abroad induced by the voucher remains significant at the ten-percent level, regardless of the correction. The job-search results are less robust, with only the reducing in individuals' likelihood of looking for work locally in the two months following the job-fair remaining significant at the 10-percent level. However, the increase in the likelihood of looking for work in Manila and the number of offers received are nearly statistically significant under the Benjamini-Hochberg methods, with adjusted p-values of 0.12. The employment results remain highly robust regardless of the correction I use. The increase in formal-sector employment remains statistically significant at the ten-percent level under the Holm and Benjamini-Hochberg corrections, and the decrease in self-employment is statistically significant at the five-percent level under all corrections.

5.4 Robustness checks

Horrace and Oaxaca (2006) raise concerns about bias and inconsistency that may be introduced by OLS estimates of linear probability models, particularly with low frequency outcomes. Appendix Tables D.1, D.2, and D.3 show that neither the magnitude nor the significance of results are affected by using a probit model.

I also test whether results are sensitive to the inclusion of covariates. Appendix Table D.4 demonstrates that the voucher migration and search results are not affected by the

inclusion of covariates. The impacts on employment, while still in the same direction, are not statistically significant without covariates. This appears to be driven by sample imbalance on education, as those assigned to the voucher treatment group have lower educational attainment, which understates the impact of voucher assignment in the absence of controlling for it. Appendix Tables D.5 and D.6 show that the estimated impacts of the targeted information interventions are not affected by the inclusion of covariates or fixed effects. The same set of tables indicate that my results are robust to excluding proxy surveys. Proxy surveys may be noisier than full surveys, as a family member or neighbor may not have full information about the job-search activities of the respondent, so it is unsurprising that my estimates are more precise when I exclude proxy respondents, but the magnitudes are not affected substantially.

5.5 Local average treatment effects

I interpret voucher treatment assignment as affecting individuals' behavior through job-fair attendance, which provides individuals with some combination of information and knowledge. Because job-fair attendance is endogenous, directly estimating the impact of attendance on outcomes will generate biased estimates. The encouragement design I implement generates exogenous variation in the likelihood of attendance, and I use voucher assignment to instrument for job-fair attendance. In addition to examining intention-to-treat effects of voucher assignment, I can examine local average treatment effects (LATE) for compliers, that is, those induced to attend the fair as a result of being assigned the voucher.⁵¹

I use two-stage least squares to estimate the following equations:

$$Attend_{ij} = \alpha + \beta_1 Voucher_j + \beta_2 Qual_j + \beta_3 Wage_j + X'_i \gamma + S'_j \psi + En'_i \chi + \epsilon_{ij} \quad (3a)$$

$$Y_{ij} = a + b_1 \widehat{Attend}_{ij} + b_2 Qual_j + b_3 Wage_j + X'_i d + S'_j s + En'_i c + v_{ij} \quad (3b)$$

⁵¹The LATE estimates will be equal to average treatment effect estimates if the effect is constant across individuals.

where $Attend_{ij}$ is a binary indicator for whether respondent i in neighborhood j attended the job fair, and $Voucher_j$, $Qual_j$, and $Wage_j$ are binary indicators for neighborhood j 's assignment to treatment. I include the same set of covariates X_i , stratification cell fixed effects S_j , and enumerator fixed effects En_i in both stages. Using predicted attendance, \widehat{Attend}_{ij} , I estimate medium-run outcome variable Y_{ij} measured at the follow-up survey.

The coefficient of interest is the estimated \hat{b}_1 , which can be interpreted as the causal impact of job-fair attendance on outcome Y_{ij} if the instrument is correlated with attendance and the conditional independence assumption holds: it cannot be correlated with any unobserved determinants of the outcome variable, and it cannot affect later stage outcomes in any other way than through job-fair attendance. The first-stage estimate of voucher assignment on job-fair attendance using the sample of follow-up respondents yields an F-statistic of 108. Random assignment ensures that on average, $cov[Voucher_j, v_{ij}] = 0$.⁵²

If, for instance, the voucher itself motivates applicants to apply for work or take steps to look or work, perhaps by providing them with more information or inducing them to feel more encouraged, than this mechanism would violate the exclusion restriction. To minimize any differential informational impact, both treatment and control respondents are invited to attend the job fair, and all respondents receive a flier to keep and two text message reminders about the fair. Additionally, enumerators inform respondents that they are receiving the voucher to encourage them to attend the fair, without any mention of their own qualification levels or job-finding prospects. Because randomization takes place at the neighborhood level, respondents' neighbors receive the same offer, so it is less likely that they would feel relatively qualified or unqualified by comparison. Another concern might be that the voucher affects individuals' budget constraints. However, I find no evidence that respondents exchange the voucher for cash, and the voucher is small enough to not affect individuals' budget constraints

⁵²For interpretation as a LATE, assignment must have a monotonic effect on attendance; in this case, it must have had a zero or positive effect for all individuals. The voucher could have a negative impact on attendance if it raised concerns about the legitimacy of the fair or if it seemed "too good to be true." However, the job fair was backed by the local Public Employment Service Office and was advertised broadly in the community, which, in addition to increasing attendance, should have encouraged trust among respondents.

in any substantial way.⁵³

Table 8 presents the ITT impacts of the voucher with OLS and IV estimates of job-fair attendance on search effort and employment. OLS estimates of the impact of attendance, which are likely biased due to endogeneity, indicate that overall attendance is not correlated with job-search effort and that it is slightly negatively correlated with the likelihood of being employed, particularly in the informal sector. Using voucher assignment as an instrument for attendance demonstrates that the OLS results in Column 2 are biased downward. Those induced to attend by the voucher are negatively selected compared to those who attend without the voucher.⁵⁴ This indicates that it is those who are less skilled and have less job-fair experience who benefit the most from attending a job fair, and OLS estimates of attendance would underestimate these results. Those induced to attend the job-fair by the voucher are 5.7 percentage points more likely to look for work in the capital two months after the job fair than those not included, and they are 13.0 percentage points more likely to be employed in the formal sector.

6 Discussion

Job-fair attendance has a persistent impact on individuals' job-search behavior and their employment outcomes in domestic markets, but, on average, the factual information treatments do not. That the factual information treatments have limited impact on individuals' steps to migration may not be surprising if the information itself is ineffective in updating individuals' perceptions of overseas wages or their own qualifications.⁵⁵ In this section, I

⁵³I explore this more specifically using results from a brief survey in May 2012 with 102 randomly selected respondents, who I recontact because they won a raffle prize for their participation in the follow-up survey. Eighty-one percent of original respondents are contacted, of which 31 respondents are voucher treatment group members. Fourteen out of the 31 respondents report receiving and exchanging the voucher at the job fair, and no one trades or gives away the voucher.

⁵⁴For example, 29 percent of all job-fair attendees who are in the voucher control group are college graduates, compared with only 14 percent of job-fair attendees who are in the voucher treatment group. Similarly, at baseline 61 percent of voucher control group job-fair attendees have looked for work formally, versus 33 percent of voucher treatment group job-fair attendees.

⁵⁵For example, Eberlein, Ludwig and Nafziger (2011) find that feedback does not necessarily change individuals' self assessments, particularly in the case of bad news.

explore potential explanations for these results by examining the impact of wage and qualification information on labor market perceptions and exploring treatment effect heterogeneity. I find that factual information affects individuals' labor market perceptions, although they do not affect their job-search decisions. I also explore the characteristics of those who are affected most by the experience of attending a job fair, finding that employment effects are concentrated among those with either some formal search experience or past work experience in Manila, while those with no formal search experience change how they search for work.

6.1 Why doesn't factual information matter more?

6.1.1 Wage information treatment

The limited impact of the wage information treatment contrasts with the strong link between expected wages and migration in other migration research (McKenzie, Gibson and Stillman 2012), as well as the substantial impact that revising wage expectations upward has on education decisions (Jensen 2010; Nguyen 2008). I find that the wage information does affect the individuals' beliefs about their likely wages overseas in predictable ways; however, beliefs about overseas wages do not correlate strongly with individuals' decisions to look for work.⁵⁶

To examine whether individuals' beliefs are affected by the wage information treatment, I measure the impact of wage information assignment on the the "likeliest" wage that they personally could earn abroad.⁵⁷ I plot the smoothed distribution of the change in likeliest wage between baseline and follow-up separately for the wage treatment group and the control group. Figure 3 shows that the wage information treatment shifts the distribution to the right, indicating that, on average, perceived wages of the wage information treatment group

⁵⁶Another explanation for the ineffectiveness is that the wage information updated beliefs, but the effect was offset by increased interest in local job search because of a coding error that overstated average local wages on the intervention flier. However, I find no evidence that the wage treatment increased job search in any labor market, local or otherwise.

⁵⁷This measure is implicitly conditional on being offered a job. Although it does not reflect their beliefs about average wages across the entire distribution of overseas workers, I expect that individuals' beliefs about their own wages that determine their decision to look for work abroad.

increase relative to the control group. A Komogorov-Smirnov test rejects the equality of distributions at the five-percent level ($p = 0.03$).⁵⁸ These results indicate that the wage information treatment does affect job-seeker beliefs about wages, increasing their expectations relative to the control group.

The wage information treatment may have a limited impact if individuals already have good information about the wages they could earn abroad. On average, the mean value of the likeliest wage individuals report they could earn abroad is only six percent lower than the intervention mean (P26,800 compared with P28,500). But this obscures heterogeneity in individuals' perceived likely wages, as 35 percent of individuals report higher expected wages than the intervention average. The results in Table 9 are consistent with differential treatment effects by baseline wage perceptions. I examine heterogeneity by perceived overseas wage at baseline along two outcome measures: whether the individual attends the job fair, and the likeliest wage she thinks she could earn abroad as of the follow-up survey. Columns 1 and 2 show that although the wage information treatment has no effect on job-fair attendance overall, the impact is slightly positive, though not significant, for those with low perceived wages, and the effect decreases as baseline perceived wages increase (significant at the 10-percent level). Furthermore, Columns 3 and 4 show that individuals' perceived overseas wages are affected in predictable ways. Overall, there is a small, positive impact on perceived overseas wages, but the interaction term in Column 4 indicates that the impact of the wage information decreases in individuals' perceived overseas wages.

Although the wage information treatment affects beliefs, this shift might not affect behavior if individuals' search and employment decisions on the margin are not determined by expected wages.⁵⁹ In Appendix Table C.2, I predict whether respondents had ever applied for overseas

⁵⁸I exclude those who received the qualification information treatment or the cross-randomized voucher. Results are robust to alternative specifications.

⁵⁹Additionally, if individuals have a high reservation wage for overseas work, the increase in expected wages may not be sufficient to induce search overseas. However, only 13 percent of respondents report a reservation wage that is higher than what they think they could earn abroad, consistent with other research that finds reservations wages not to be the constraint preventing job search (Diagne 2011).

work, as reported at baseline. Education, work experience, and beliefs about the likelihood of being offered a job abroad are strong predictors of past application, but perceived likely wages overseas do not predict past decisions to look for work abroad. Given that overseas wages across occupations are consistently high relative to local wages, that median likely wages are 5.7 times higher than median household income,⁶⁰ and that most respondents (75 percent) have an immediate or extended family member who has worked abroad in the past five years, it is less surprising that increasing expected wages does not translate to changes in job-search and employment decisions.

6.1.2 Qualification information

The impact of qualification information may depend on individuals' baseline perceptions as well as their own characteristics.⁶¹ At baseline, respondents report the minimum educational requirements and the minimum number of years of experience for six common overseas positions: domestic helper, caretaker, construction worker, plumber, factory worker, and food service worker. I compare the median responses to the median minimum requirements for the each job based on position-weighted calculations from 23,910 job postings taken from *workabroad.ph*, described earlier.⁶² Individuals have accurate expectations about the minimum educational requirements for these positions, as seen in Appendix Table C.3. However, they tend to underestimate the minimum experience requirements.⁶³

To measure the impact of qualification information on the accuracy of individuals' perceptions about minimum experience requirements, I calculate the absolute value of the difference

⁶⁰The median likeliest wage respondents report they could earn abroad is P20,000, or \$457, per month. The median household income at baseline is P3,500, or \$80, per month.

⁶¹In Appendix E, I examine heterogeneous treatment effects between men and women and between those with a high school diploma or less and those with some post-secondary education. I find that men update their beliefs about their own qualifications, and they are more likely to attend the job fair, but they are no more or less likely to take steps to migrate abroad.

⁶²Medians overlap between men and women for food service worker positions. Women have lower experiential requirements for factory worker positions, so I use the median the corresponds to the respondent's gender.

⁶³One exception is the domestic helper position, for which more than half of vacancies do not require experience.

between the median years of related experience required for six common overseas positions, as measured using the data from *workabroad.ph*, and the number of years of experience reported by respondents the number of years experience required for each position. I average that difference over the six positions and report the results in Table 10. In the control group, individuals estimate minimum experience requirements at baseline that are 1.3 years away from the true values on average, with the average respondent underestimating experience requirements for 59 percent of positions and overestimating for 16 percent of positions. Column 1 shows that qualification information has a modest impact on perceptions, reducing the absolute difference between reported and actual experience requirements by 0.06 years, which is statistically significant at the ten-percent level. This is roughly the same impact as that of the voucher assignment, which reduces the absolute difference by 0.07 years. Columns 2 and 3 show that this change comes from a reduction in the likelihood of underestimating minimum experience requirements. These results indicate that the qualification information has a small impact on individuals' perceptions, but the tailored information on average is no more effective in changing perceptions than being incentivized to attend the job fair. Together, these results suggest that information about qualifications does improve information about minimum overseas qualifications, but that the provision of this information does not have substantial impacts on decisions to migrate overseas.

6.2 Who is affected by job-fair attendance?

In this section, I examine the characteristics of those affected by job-fair attendance, exploring whether the voucher most influences those with or without prior labor market exposure. In Panel A of Table 11, I estimate the main job-search and employment outcomes using binary indicators for whether individuals do or do not having formal job-search experience at baseline interacted with the voucher assignment indicator, omitting the non-interacted voucher dummy.⁶⁴ In Panel B, I estimate the same outcomes, this time interacting voucher

⁶⁴I define having formal job-search experience as having either submitted at least one resume (40 percent) or having interviewed at least once (38 percent). Results are robust to splitting the sample by whether

assignment with indicators for whether the respondent had worked in Manila as of the baseline survey. In the bottom row of each panel, I report the p-values for a test of equality of the two interacted terms for each subgroup.

The voucher increases the likelihood of search in Manila for those without formal job-search experience, but not those with job-search experience, suggesting that the information or a behavioral nudge provided by the fair is important for the former group. However, this change in search behavior for those without formal job-search experience does not lead to a statistically significant increase in formal or informal sector employment (though there is an overall increase in formal or informal sector employment, significant at the five-percent level). Those with past formal job-search experience increase their likelihood of formal sector employment and reduce in their likelihood of search either in Manila or locally. This result is consistent with a scenario in which those with past formal job-search experience gain an improvement in their search ability as a result of attendance.

In Panel B, I find that those with work history in Manila adjust their search behavior, and they are more likely to be employed in the formal sector at follow-up.⁶⁵ Broadly, these results indicate that, in terms of formal-sector employment, those with at least some labor market exposure gain the most from job fair attendance, in terms of increasing formal sector employment, and that the gain appears to be driven by an improvement in search skills as well as through potential informational or behavioral channels. However, even those with essentially no labor-market exposure still change their search behavior, indicating that improving access to labor market information can affect search trajectories for a broad range of individuals. This change in behavior does not appear to be driven by individuals looking for work as a “stepping-stone” to migration; Table 3 demonstrates that voucher assignment does not increase individuals’ likelihood of taking steps to find work overseas, and individuals

individuals submitted a resume, or by whether individuals ever interviewed. The correlation between these two measures is 0.89.

⁶⁵There is a positive correlation between having work history in Manila and having formal-search experience ($\rho = 0.16$), but 48 percent of those with history in Manila have never looked formally for work.

are, in fact, less likely to report they are interested in working abroad as a result of voucher assignment. Overall, these results provide suggestive evidence that the employment gains of increased job-search exposure are concentrated among those with at least some prior search experience, while those with no formal job-search experience have the greater change in how they search. These results provide suggestive evidence attendance working through multiple mechanisms, which provides an outline for future work of the potential roles of information, skill acquisition, and reduction of behavioral barriers on job-search effort.

7 Conclusion

I implement a randomized field experiment in the rural Philippines to evaluate the role of incomplete information in job-search decisions. I conduct a baseline survey with 862 respondents in Bulan, a rural municipality with limited access to opportunities to find work abroad. Individuals from randomly selected neighborhoods receive information about average overseas wages, minimum qualifications for common overseas positions, or no information. I also generate exogenous variation in job-fair attendance through an encouragement design. I measure the impact of these interventions on job-fair attendance as well as on migration, job-search, and employment outcomes I measure in a follow-up survey conducted ten months after the job fair.

This paper has two main findings. Information about the overseas labor market increases the accuracy of individuals' labor market perceptions, but their decisions to search for work overseas are not affected. It appears that despite their geographic isolation from the capital, individuals already have fairly good information about overseas work at baseline, particularly about wages and the minimum education requirements. These results indicate that information is not a main barrier to overseas migration in this context.

Secondly, job-fair attendance does not increase migration, though it has persistent domestic labor-market impacts. Assignment to the voucher treatment group, which subsidizes job-

fair attendance, more than doubles the likelihood that individuals search for work in Manila in the two months after the job fair, increasing the likelihood of search by 2.1 percentage points compared with an average of 1.6 percentage points for the control group. Additionally, attendance induces individuals to shift from self-employment to work in the formal sector. Formal sector employment rises by 38 percent, or 4.8 percentage points, as a result of voucher assignment, and self-employment falls by 25 percent, or 6.7 percentage points. These results highly robust to estimating average effect sizes by outcome group, and the employment results remain significant after adjusting for multiple comparisons by controlling the FWER or FDR.

The change in search experience is concentrated among two groups: those without formal job-search experience and those with work history in Manila, indicating a potential role for information or behavioral “nudge” into search. However, only those with at least some labor-market exposure - either with past formal job-search experience or with work history in Manila - increase their likelihood of being employed in the formal sector. Because those with formal job-search experience are more likely to be employed in the formal sector but do not change how they search, there is also evidence that attending the fair may improve individuals’ skill in looking for work.

This paper provides the first evidence of the impact of factual information and the experience of searching on individuals’ job-search beliefs and decisions. In addition, the main results have implications beyond the realm of job-search decisions in the rural Philippines. These findings indicate that experiential learning may be particularly important in shaping individuals’ beliefs and decisions, particularly when information and knowledge is costly and there is uncertainty about outcomes, which is important in contexts ranging from education and health investment decisions to technology adoption. While the exact parameter estimates are likely specific to this context, they indicate the importance of accounting for incomplete information in job-search decisions more broadly.

References

- Anderson, Michael L.** 2008. “Multiple Inference and Gender Differences in the Effects of Early Intervention: A Reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects.” *Journal of the American Statistical Association*, 108(484): 1481–1495.
- Beam, Emily, David McKenzie, and Dean Yang.** 2012. “Reducing Barriers to Overseas Migration in the Philippines.” Work in Progress.
- Benjamini, Yoav, and Daniel Yekutieli.** 2001. “The control of the false discovery rate in multiple testing under dependency.” *Annals of Statistics*, 29(4): 1165–1188.
- Benjamini, Yoav, and Yosef Hochberg.** 1995. “Controlling the false discovery rate: a practical and powerful approach to multiple testing.” *Journal of the Royal Statistical Society. Series B (Methodological)*, 57(1): 289–300.
- Betcherman, Gordon, Karina Olivas, and Amit Dar.** 2004. “Impact of Active Labor Market Programs: New Evidence from Evaluations with Particular Attention to Developing and Transition Countries.” The World Bank, Social Protection Discussion Paper Series.
- Böheim, Renè, Gerard Thomas Hovarth, and Rudolf Winter-Ebmer.** 2011. “Great Expectations: Past Wages and Unemployment Durations.” *Labour Economics*, 18: 778–785.
- Bruhn, Miriam, and David McKenzie.** 2009. “In Pursuit of Balance: Randomization in Practice in Development Field Experiments.” *American Economic Journal: Applied Economics*, 1(4): 200–232.
- Burdett, Kenneth, and Tara Vishwanath.** 1988. “Declining Reservation Wages and Learning.” *Review of Economic Studies*, 55(4): 655–666.

- Bureau of Labor and Employment Statistics.** 2011. “2011 Yearbook of Labor Statistics.” Last accessed: October 25, 2012.
- Commission on Filipinos Overseas.** 2008. “Stock Estimates of Overseas Filipinos.”
- DellaVigna, Stefano, and M. Daniele Paserman.** 2005. “Job Search and Impatience.” *Journal of Labor Economics*, 23(3): 527–588.
- Diagne, Mame Fatou.** 2011. “Information and Job Search Intensity in South Africa.” Working Paper.
- Eberlein, Marion, Sandra Ludwig, and Julia Nafziger.** 2011. “The Effects of Feedback on Self-Assessment.” *Bulletin of Economic Research*, 63(2): 177–199.
- Falk, Armin, David Huffman, and Uwe Sunde.** 2006*a*. “Do I Have What It Takes? Equilibrium Search with Type Uncertainty and Non-Participation.” IZA Discussion Paper Series # 2531.
- Falk, Armin, David Huffman, and Uwe Sunde.** 2006*b*. “Self-Confidence and Search.” IZA Discussion Paper Series # 25525.
- Fink, Günther, Margaret McConnell, and Sebastian Vollmer.** 2012. “Testing for Heterogeneous Treatment Effects in Experimental Data: False Discovery Risks and Correction Procedures.” Working Paper.
- Gonzalez, Francisco M., and Shouyong Shi.** 2010. “An Equilibrium Theory of Learning, Search, and Wages.” *Econometrica*, 78(2): 509–537.
- Holm, Sture.** 1979. “A simple sequentially rejective multiple test procedure.” *Scandinavian journal of statistics*, 6(2): 65–70.
- Horrace, William C., and Ronald L. Oaxaca.** 2006. “Results on the Bias and Inconsistency of Ordinary Least Squares for the Linear Probability Model.” *Economic Letters*, 90: 321–327.

- Jensen, Robert.** 2010. "The (Perceived) Returns to Education and the Demand for Schooling." *Quarterly Journal of Economics*, 125(2): 515–548.
- Katz, Lawrence, Jeffrey Kling, and Jeffrey Liebman.** 2007. "Experimental Analysis of Neighborhood Effects." *Econometrica*, 75: 83–119.
- Kreuter, Matthew W., and Victor J. Strecher.** 1996. "Do Tailored Behavior Change Messages Enhance the Effectiveness of Health Risk Appraisal? Results from a Randomized Trial." *Health Education Research*, 11(1): 97–105.
- McKenzie, David, Caroline Theoharides, and Dean Yang.** 2012. "Distortions in the International Migrant Labor Market: Evidence from Filipino Migration and Wage Responses to Destination Country Economic Shocks." Working Paper.
- McKenzie, David, John Gibson, and Steven Stillman.** 2012. "A Land of Milk and Honey with Streets Paved with Gold: Do Emigrants Have Over-optimistic Expectations about Incomes Abroad?" *Journal of Development Economics*.
- National Statistical Coordination Board.** 2006. "2006 Poverty Statistics." Last accessed: August 31, 2012.
- National Statistics Office.** 2001. "2000 Philippine Labor Force Survey."
- National Statistics Office.** 2007. "2007 Census of Population." Last accessed: August 31, 2012.
- Nguyen, Trang.** 2008. "Information, Role Models and Perceived Returns to Education: Experimental Evidence from Madagascar." Unpublished Manuscript.
- Noar, Seth M., Christina N. Benac, and Melissa S. Harris.** 2007. "Does Tailoring Matter? Meta-Analytic Review of Tailored Print Health Behavior Change Interventions." *Psychological Bulletin*, 133(4): 673 – 693.

- OANDA.** 2012. “Historical Exchange Rates.” Last accessed: June 28, 2012.
- Oster, Emily, and Bryce Millett.** 2011. “Do Call Centers Promote School Enrollment? Evidence from India.” Working Paper.
- Paserman, M. Daniele.** 2008. “Job Search and Hyperbolic Discounting: Structural Estimation and Policy Evaluation.” *The Economic Journal*, 118: 1418–1452.
- Philippine Overseas Employment Administration.** 2011. “2010 Overseas Employment Statistics.” Accessed September 26, 2012.
- Pissarides, Christopher.** 2000. *Equilibrium Unemployment Theory*. . 2nd ed., Cambridge, MA:MIT Press.
- Rothschild, Michael.** 1974. “Searching for the Lowest Price When the Distribution of Prices is Unknown.” *Journal of Political Economy*, 82: 689–711.
- Schochet, Peter Z.** 2008. “Guidelines for Multiple Testing in Impact Evaluations of Educational Interventions.” Mathematica Policy Research.
- Winkler, William.** 2004. “Methods for Evaluating and Creating Data Quality.” *Information Systems*, 29(7): 531–550.

Figures

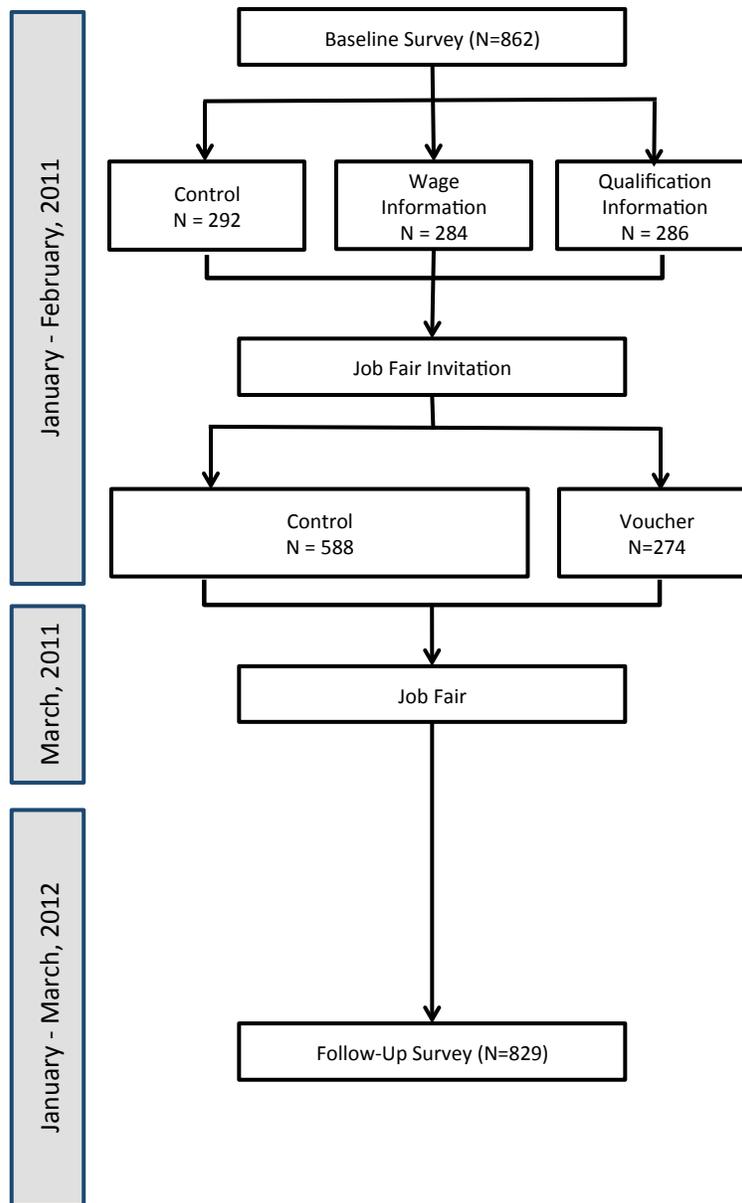


Figure 1: Project timeline and intervention flowchart

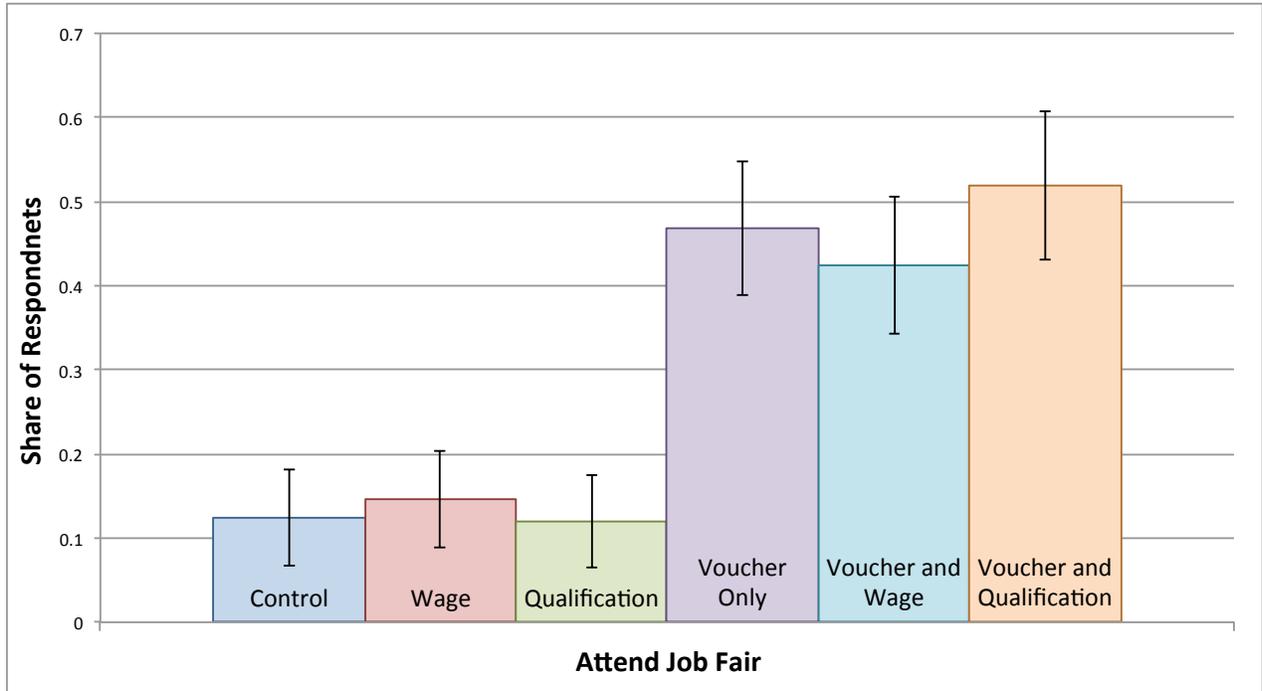


Figure 2: Impact of voucher and information treatments on job-fair attendance

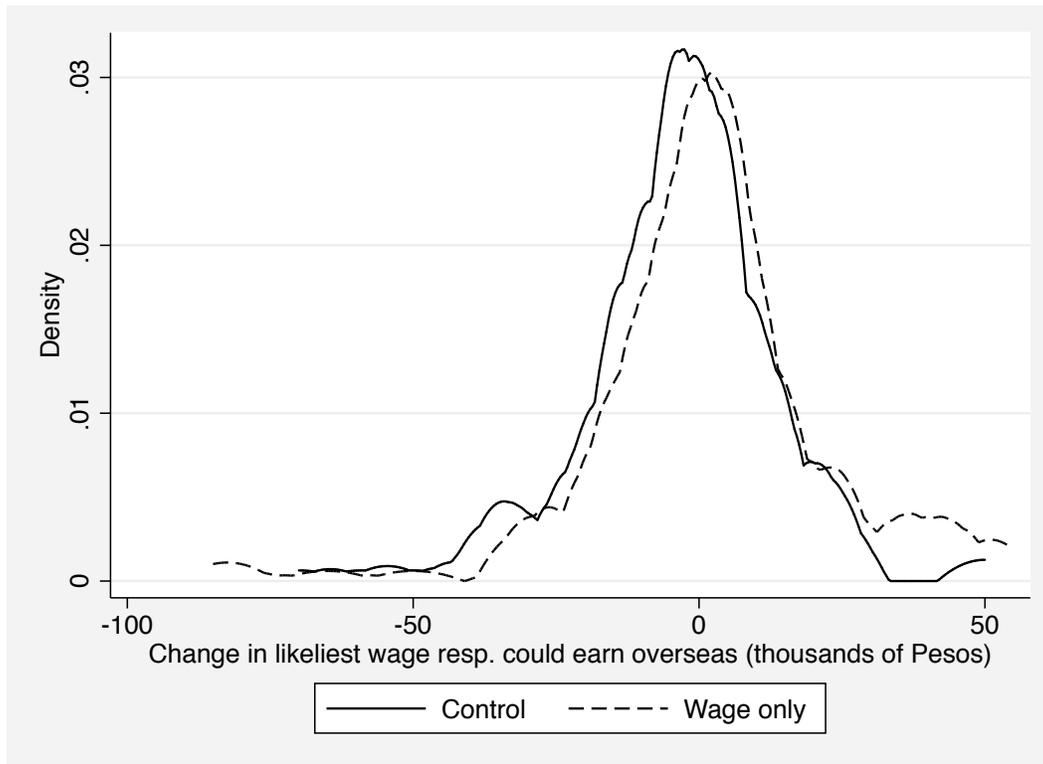


Figure 3: Differential change in likeliest wages respondent would earn overseas between baseline and follow-up surveys, by wage treatment assignment, Kolmogorov-Smirnov test rejects equality of distributions with $p = 0.026$

Tables

Table 1: Summary statistics and balancing tests

	Voucher		Information		
	Control (1)	Treatment (2)	Control (3)	Wage (4)	Qual. (5)
Female	49.3	52.6	49.3	48.9	52.8
Age (mean)	27.2	27.2	27.2	26.4	28.0**
Married	57.3	56.9	54.1	51.4	66.1**
With children	58.2	59.5	56.2	51.8	67.8**
High school or greater	74.7	67.9	72.3	75.0	70.3
College graduate	17.5	13.1	16.8	15.5	16.1
Mean household income (,000s)	6.1	5.3	5.6	6.3	5.5
Working at baseline	35.9	37.2	37.7	35.6	35.7
Ever worked	83.7	85.4	84.9	81.7	86.0
Ever worked in Manila	40.0	37.2	38.0	41.5	37.8
Interested in working abroad	28.2	20.1	28.1	23.9	24.8
Plan to apply abroad, next 12 mo.	34.7	27.4*	29.1	34.2	33.9
Currently has passport	5.4	4.4	4.5	4.2	6.6
Ever applied abroad	29.1	24.8	25.3	28.2	29.7
Any family abroad since 2005	75.2	72.3	71.9	70.4	80.4*
Distance to job fair (km)	3.0	3.2	2.9	3.6	2.8
Observations	588	274	292	284	286
F-test statistic		1.15		0.82	1.94
P-value		0.32		0.66	0.03**

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

Notes: Starred values indicate statistically significant differences between that treatment group (voucher, wage information, or qualification information) and the respective control group. F-test statistic and corresponding p-value reported for joint test of the equality of all covariates between that treatment group and the respective control group. Standard errors clustered at the neighborhood level. Income is top-coded at P40,000 (\$US 913) per month.

Table 2: Intention-to-treat estimates of voucher and information treatments on whether respondents attend job fair

	Attend job fair			
	(1)	(2)	(3)	(4)
Voucher	0.334*** [0.035]	0.354*** [0.035]	0.327*** [0.053]	0.336*** [0.055]
Wage Information	-0.008 [0.034]	-0.006 [0.035]	0.004 [0.031]	0.000 [0.031]
Wage X Voucher			-0.034 [0.090]	-0.015 [0.092]
Qualification Information	0.007 [0.031]	0.018 [0.032]	-0.010 [0.034]	-0.003 [0.032]
Qualification X Voucher			0.062 [0.076]	0.077 [0.076]
Constant	0.687*** [0.086]	0.663*** [0.121]	0.648*** [0.079]	0.622*** [0.116]
Observations	862	862	862	862
Individual covariates	NO	YES	NO	YES
P-value of joint tests:				
Voucher + Wage + Voucher X Wage = 0			0.00***	0.00***
Voucher + Qual + Voucher X Qual = 0			0.00***	0.00***
Dependent Mean, Control			12.7%	

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

Notes: Sample restricted to baseline respondents with non-missing covariates. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and interested in working abroad.

Table 3: Intention-to-treat estimates of voucher and information treatments on steps to migrate

	Look abroad, Apr.-Jan.	Visit recruit. agency, first time	Obtain passport	Strongly interested, work abroad
	(1)	(2)	(3)	(4)
Voucher	0.000 [0.008]	-0.017 [0.013]	0.005 [0.013]	-0.035** [0.015]
Wage Information	0.008 [0.008]	0.012 [0.018]	0.032* [0.017]	-0.004 [0.023]
Qualification Information	0.007 [0.009]	-0.009 [0.017]	0.008 [0.013]	-0.034 [0.025]
Constant	-0.050 [0.033]	0.002 [0.061]	-0.036 [0.044]	0.001 [0.078]
Observations	826	826	826	825
Dependent Mean, Control	1.1%	6.0%	1.6%	13.0%
Stratification Cell FE	YES	YES	YES	YES
Individual Covariates	YES	YES	YES	YES

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

Notes: Sample restricted to follow-up respondents. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and interested in working abroad.

Table 4: Intention-to-treat estimates of voucher and information treatments on job-search effort

	Whether look for work two months after fair			Total offers received ten months after fair		
	Anywhere	Within province	Within Manila	Anywhere	Within province	Within Manila
	(1)	(2)	(3)	(4)	(5)	(6)
Voucher	-0.002 [0.015]	-0.023** [0.010]	0.021* [0.012]	0.016 [0.032]	-0.028 [0.020]	0.044* [0.025]
Wage Info	-0.004 [0.017]	-0.007 [0.013]	0.008 [0.013]	-0.006 [0.039]	-0.014 [0.027]	0.008 [0.027]
Qualification Info	-0.011 [0.016]	-0.011 [0.012]	-0.001 [0.011]	-0.068* [0.039]	-0.025 [0.026]	-0.043 [0.029]
Constant	0.095 [0.066]	0.069 [0.055]	0.040 [0.035]	0.308** [0.139]	0.239** [0.111]	0.070 [0.108]
Observations	826	826	826	826	826	826
Dep. Mean, Control	5.9%	4.3%	1.6%	0.3	0.1	0.1

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

Notes: Sample restricted to follow-up respondents. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and interested in working abroad.

Table 5: Intention-to-treat estimates of voucher and information treatments on employment status at follow-up survey

Employment status at follow-up survey	Any (1)	Formal (2)	Informal (3)	Self-employ. (4)
Voucher	0.005 [0.028]	0.047** [0.023]	0.024 [0.026]	-0.067*** [0.025]
Wage Information	0.005 [0.033]	-0.001 [0.028]	0.029 [0.034]	-0.023 [0.029]
Qualification Information	0.059 [0.037]	-0.000 [0.025]	0.041 [0.038]	0.019 [0.033]
Constant	0.275** [0.133]	0.132 [0.084]	0.111 [0.108]	0.032 [0.127]
Observations	826	826	826	826
Dependent Mean, Control	54.1%	12.4%	14.6%	27.0%

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

Notes: Sample restricted to follow-up respondents. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and interested in working abroad.

Table 6: Mean standardized treatment effects, by outcome family

	Voucher (1)	Wage Information (2)	Qual. Information (3)
Take steps to migrate	-0.033 [0.037]	0.091* [0.047]	-0.001 [0.047]
Shift search to Manila	0.118*** [0.042]	0.039 [0.046]	0.001 [0.044]
Δ in formal/informal sector employment	0.120*** [0.041]	0.044 [0.046]	0.024 [0.053]

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

Notes: Sample restricted to baseline respondents with non-missing covariates. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and strongly interested in working abroad. Mean effect sizes calculated based on Equation 2.

Table 7: Family-wise and false discovery rate adjusted p-values of voucher treatment effects

	Unadjusted p-value (1)	FWER		FDR
		Bonferroni (2)	Holm Step-down (3)	Benjamini- Hochberg (4)
Take steps to migrate				
Look abroad, Apr.-Jan.	0.997	1.000	1.000	0.997
Visit recruitment agency, first time	0.197	0.788	0.591	0.394
Obtain passport	0.682	1.000	1.000	0.909
Interested in working abroad	0.020	0.080*	0.080*	0.080*
Job-Search				
Look for work locally, two months after fair	0.027	0.108	0.108	0.108
Look for work in Manila, two mo. after fair	0.087	0.348	0.255	0.116
# local offers, ten months after fair	0.162	0.648	0.255	0.162
# offers in Manila, ten months after fair	0.085	0.340	0.255	0.116
Employment				
Employed in formal sector	0.046	0.138	0.092*	0.069*
Employed in informal sector	0.347	1.000	0.347	0.347
Self-Employed	0.009	0.027**	0.027**	0.027**

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

Notes: Adjusted p-values calculated as discussed in Section 5.3. Sample restricted to follow-up respondents. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and interested in working abroad.

Table 8: IV and OLS measures of job-fair attendance on job-search effort and employment status

	Voucher	Attend Job Fair	
	OLS	OLS	IV
	(1)	(2)	(3)
Whether look for work, two months after job fair:			
Anywhere	-0.002 [0.015]	-0.011 [0.020]	-0.006 [0.039]
Within Province	-0.023** [0.010]	-0.001 [0.016]	-0.064** [0.028]
Within Manila	0.021* [0.012]	-0.004 [0.012]	0.057* [0.033]
Whether employed at follow-up:			
Any	0.005 [0.028]	-0.026 [0.035]	0.013 [0.076]
Formal	0.047** [0.023]	0.042 [0.029]	0.130** [0.063]
Informal	0.024 [0.026]	-0.049* [0.028]	0.067 [0.069]
Self-Employed	-0.067*** [0.025]	-0.019 [0.036]	-0.185*** [0.069]

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

Notes: Sample restricted to follow-up respondents. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and interested in working abroad.

Table 9: Heterogeneous impacts of wage information on job-fair attendance and perceived likeliest wages overseas, by baseline beliefs about overseas wages

	Attend job fair		Likeliest wage could earn overseas, follow-up	
	(1)	(2)	(3)	(4)
Wage Info	-0.004 [0.034]	0.062 [0.057]	1.502 [1.917]	8.195** [3.259]
Wage X Expected Wage		-0.003* [0.002]		-0.232* [0.119]
Constant	0.205* [0.111]	0.210* [0.114]	24.861*** [5.926]	15.721*** [5.349]
Observations	862	862	663	663
Individual covariates	YES	YES	YES	YES
DV Mean, control	12.7%		24.9	

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

Notes: Sample restricted to baseline respondents with non-missing covariates. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and interested in working abroad.

Table 10: Intention-to-treat impacts of voucher and information treatments on accuracy of expectations about minimum experience requirements for overseas work.

Difference between reported and actual minimum experience for overseas work	Abs. average difference (1)	Avg. share overestimate (2)	Avg. share underestimate (3)
Voucher	-0.070*** [0.025]	0.022 [0.013]	-0.027** [0.013]
Wage Information	-0.001 [0.030]	0.009 [0.017]	-0.015 [0.016]
Qualification Information	-0.057* [0.031]	0.010 [0.016]	-0.025 [0.017]
Constant	1.075*** [0.149]	0.140** [0.055]	0.491*** [0.050]
Observations	629	629	629
Dependent Mean, Control	1.3	21.1%	56.5%

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

Notes: Average difference based on six common overseas occupations: domestic helper, caretaker, construction worker, plumber, factory worker, and food service worker. Actual minimum experience based on median experience requirements from 23,910 job postings on *workabroad.ph*. Sample includes full follow-up respondents with non-missing qualification information at baseline and follow-up. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and interested in working abroad.

Table 11: Heterogeneous impacts of voucher and information treatments on job-search effort and employment outcomes, by past labor-market exposure

	Whether look for work, two months after fair			Total offers received ten months after fair			Employment status at follow-up survey			
	Anywhere	Within province	Within Manila	Anywhere	Within province	Within Manila	Formal	Informal	Self-Emp.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Formal Search Experience										
Voucher X No Search	0.021 [0.018]	-0.019* [0.011]	0.039** [0.017]	0.053 [0.040]	-0.013 [0.023]	0.066** [0.033]	0.012 [0.030]	0.024 [0.027]	0.047 [0.031]	-0.060** [0.028]
Voucher X Search	-0.047** [0.023]	-0.031* [0.016]	-0.015 [0.016]	-0.054 [0.049]	-0.056* [0.029]	0.002 [0.039]	-0.009 [0.051]	0.091** [0.043]	-0.020 [0.038]	-0.080** [0.037]
Constant	0.086 [0.067]	0.067 [0.055]	0.032 [0.037]	0.294** [0.139]	0.233** [0.111]	0.061 [0.109]	0.272** [0.135]	0.142* [0.085]	0.102 [0.109]	0.029 [0.127]
Observations	826	826	826	826	826	826	826	826	826	826
No search = Search (p-value)	0.02**	0.50	0.03**	0.10*	0.21	0.23	0.71	0.19	0.16	0.61
Panel B: Whether Ever Worked in Manila										
Voucher X Never Manila	-0.011 [0.019]	-0.012 [0.013]	0.001 [0.014]	-0.027 [0.035]	-0.027 [0.025]	-0.001 [0.025]	0.027 [0.037]	0.026 [0.029]	0.055* [0.032]	-0.054 [0.036]
Voucher X Ever Manila	0.012 [0.026]	-0.040** [0.019]	0.053** [0.020]	0.086 [0.062]	-0.030 [0.036]	0.116** [0.056]	-0.030 [0.048]	0.081** [0.037]	-0.025 [0.044]	-0.087** [0.043]
Constant	0.098 [0.066]	0.066 [0.056]	0.046 [0.035]	0.322** [0.142]	0.239** [0.111]	0.083 [0.110]	0.268** [0.134]	0.139 [0.085]	0.101 [0.107]	0.028 [0.126]
Observations	826	826	826	826	826	826	826	826	826	826
No Manila = Manila (p-value)	0.48	0.24	0.04**	0.14	0.94	0.08*	0.37	0.22	0.16	0.60

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

Notes: Sample restricted to follow-up respondents. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and interested in working abroad.

Appendix A Sample Characteristics

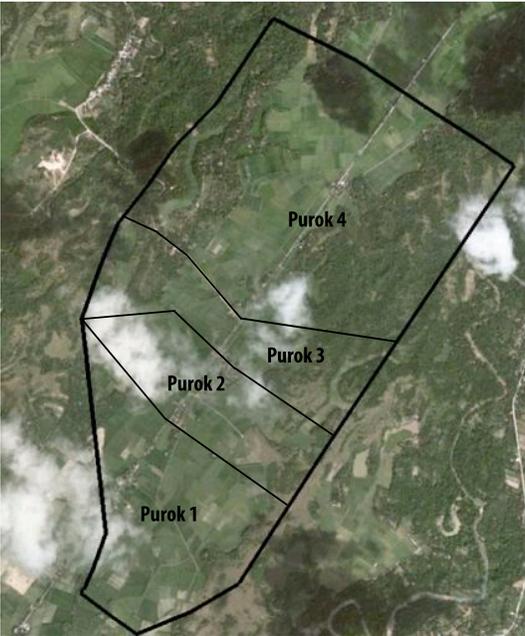


Figure A.4: Urban and rural barangay maps, with neighborhood boundaries

Table A.1: Sample size and attrition

	N	Share
Baseline	865	100.0%
Follow-up	835	96.5%
Full Survey	692	80.0%
Proxy	143	16.5%
Attrition	30	3.5%
Deceased	4	0.5%
Refused (no proxy)	15	1.7%
In Manila (no proxy)	4	0.5%
Outside municip. (no proxy)	4	0.5%
Moved w/in Bulan (no proxy)	2	0.2%
Unlocated	1	0.1%

Table A.2: Treatment Assignment Distribution

	<i>(Share)</i>		
	Sample Size		
	No Voucher	Voucher	Total
No Information	<i>22%</i>	<i>11%</i>	<i>33%</i>
	197	95	292
Wage Information	<i>22%</i>	<i>11%</i>	<i>33%</i>
	186	98	284
Qualification Information	<i>22%</i>	<i>11%</i>	<i>33%</i>
	205	81	286
Total	<i>66%</i>	<i>33%</i>	<i>100%</i>
	588	274	862

Table A.3: Summary statistics and balancing tests

	Mean	S.D.	F-test	
	All		Info	Voucher
	(1)	(2)	(3)	(4)
Female	50.3	50.0	2.2	2.3
Age (mean)	27.2	4.4	9.2***	0.0
Married	57.2	49.5	5.7***	0.0
With children	58.6	49.3	6.3***	0.1
HS Only	31.1	46.3	0.6	0.1
Some college or vocational	25.3	43.5	0.6	0.9
College graduate	16.1	36.8	0.1	2.2
Mean household income (thousands)	5.8	6.6	0.5	1.4
Working at baseline	36.3	48.1	0.2	0.1
Ever worked	84.2	36.5	0.7	0.3
Ever worked in Manila	39.1	48.8	0.2	0.2
Interested in working abroad	25.6	43.7	0.5	5.9**
Plan to apply abroad in next 12 months	32.4	46.8	0.6	3.4
Currently has passport	5.1	22.0	1.0	0.4
Ever applied abroad	27.7	44.8	0.7	1.6
Any family abroad since 2005	74.2	43.8	3.3*	0.6
Distance to job fair (km)	3.1	2.8	0.6	0.1
Observations	862			

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

Notes: Mean and standard deviation reported for full sample. F-test statistic for joint test of equality of means between all information groups (control, wage, qualification) and for voucher groups (control, treatment), with standard errors clustered at the neighborhood level. Income is top-coded at P40,000 (\$US 913) per month.

Table A.4: Differential attrition by treatment assignment

	Attrition				Proxy			
	Mean	SD	F-test	P-val	Mean	SD	F-test	P-val
No Information	2.73	16.32			18.43	38.86		
Wage Info.	4.58	20.94	1.82	0.18	16.90	37.54	0.27	0.61
Qualification Info.	3.13	17.43	0.02	0.88	14.24	35.00	1.59	0.21
No Voucher	3.05	17.21			17.12	37.70		
Voucher	4.36	20.47	0.95	0.33	15.27	36.04	0.59	0.45
Observations		865				865		

Appendix B Intervention Materials

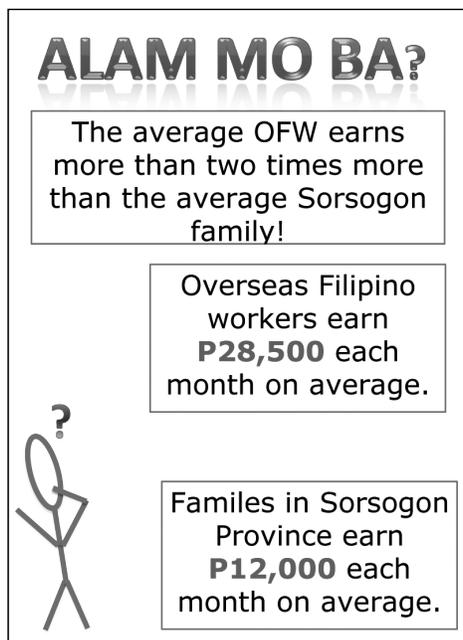


Figure B.1: Wage information treatment (English translation)

Wage information script:

I would like to share with you some information about average wages locally and overseas. Information on OFW wages comes from POEA and information on Sorsogon wages come from a survey we conducted around Sorsogon Province last year. These wages are based on an average of the experiences of thousands of workers and families, so the experiences of yourself and the people you know may be different.

On average the salary of an OFW is more than two times the total income of a Sorsoganon family. The average OFW earns P28,500 every month. The average family in Sorsogon province earns P12,000 every month.

Qualification Information Script:

I would like to share with you some information about your qualifications for work overseas. We've collected information about job postings for thousands of overseas job vacancies from workabroad.ph and we've summarized it on these pages.

In order to give you the most useful information, please select TWO occupations that you would like to learn more about from the following list. **[SHOW LIST]**

First, I'm going to tell you about typical qualifications for a position as a [DESIRED POSITION 1]. These qualifications are based on an average of hundreds of job postings, so there may be vacancies with both higher and lower minimum qualifications.

Each shaded person represents one job vacancy out of 100 job vacancies. For example, if all job postings for a certain position are open to a high school graduate, all 100 persons will be shaded. If only half of positions are open to a high school graduate, 50 persons will be shaded and 50 persons will be empty.

Do you have any questions? **[READ SCRIPT FOR DESIRED POSITION 1]**

Now, I'm going to tell you about typical qualifications for a position as a [DESIRED POSITION 2].

[READ SCRIPT FOR DESIRED POSITION 2]

Based on your qualifications, I'm going to tell you about the typical qualifications for positions as a [ASSIGNED POSITION 1] and [ASSIGNED POSITION 2].

[READ SCRIPT FOR ASSIGNED POSITIONS 1 AND 2]

Position Script:

For [WOMEN/MEN] applying for a position as a POSITION,

[READ ONLY THOSE EDUCATION PROMPTS INCLUDED ON THE INFO SHEET]

XX vacancies out of every 100 vacancies, or XX percent, would be open to you if you had less than a high school diploma. YY vacancies out of every 100 vacancies, or YY percent, would be open to you if you are a high school graduate. ...

[READ ONLY THOSE EXPERIENCE PROMPTS INCLUDED ON THE INFO SHEET]

With respect to experience, XX vacancies out of every 100 vacancies, or XX percent, would be open to you if you have no related experience. YY vacancies out of every 100 vacancies, or YY percent, would be open to you if you have 1 year of related experience. ...

Because you are a RESPONDENT EDUCATION, you would be eligible for XX vacancies out of 100 vacancies, or XX percent. Because you have RESPONDENT RELATED EXPERIENCE years of related experience, you would be eligible for YY vacancies out of 100 vacancies, or YY percent.

[PICK THE CUTOFF WHERE AT LEAST 40 VACANCIES ARE AVAILABLE]

In general, a good candidate for POSITION would be at least CUTOFF EDUCATION and have at least CUTOFF EXPERIENCE years of related experience.

[IF MEETS BOTH > 60] Based on your qualifications, you would be a very strong candidate for a position overseas as a POSITION.

[IF MEETS BOTH > 40] Based on your qualifications, you would be a strong candidate for a position overseas as a POSITION.

[IF MEETS ONE OR NONE > 40] Based on your qualifications, you are not a strong candidate right now for a position as a POSITION, but you could be by increasing your **[EDUCATION/EXPERIENCE/EDUCATION AND EXPERIENCE]**.

Do you have any questions?

Appendix C Additional Specifications

Table C.1: Intention-to-treat estimates of voucher and information treatments on job-search effort, one and ten months after job fair

	Whether look for work one month after job fair			Whether look for work ten months after job fair			Total months look for work ten months after job fair		
	Anywhere (1)	Within province (2)	Within Manila (3)	Anywhere (4)	Within province (5)	Within Manila (6)	Anywhere (4)	Within province (5)	Within Manila (6)
Voucher	0.008 [0.011]	-0.014*** [0.005]	0.022** [0.009]	0.002 [0.026]	-0.039 [0.023]	0.031 [0.021]	0.012 [0.053]	-0.062* [0.033]	0.088** [0.042]
Wage Info	0.000 [0.011]	0.010 [0.008]	-0.005 [0.009]	0.004 [0.037]	-0.012 [0.031]	0.014 [0.025]	0.003 [0.066]	0.001 [0.039]	-0.016 [0.047]
Qualification Info	0.000 [0.010]	0.002 [0.007]	-0.003 [0.008]	-0.080** [0.039]	-0.052 [0.032]	-0.047* [0.024]	-0.095 [0.072]	-0.031 [0.043]	-0.093** [0.047]
Constant	0.089** [0.038]	0.046* [0.024]	0.056* [0.032]	0.472*** [0.133]	0.359*** [0.118]	0.163* [0.093]	0.401 [0.244]	0.418*** [0.140]	0.114 [0.185]
Observations	826	826	826	826	826	826	826	826	826
Dep. Mean, Con.	1.6%	0.5%	1.1%	29.8%	18.1%	12.8%	0.42	0.21	0.20

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

Notes: Sample restricted to follow-up respondents. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and interested in working abroad.

Table C.2: Predictors of whether respondents had ever applied overseas at baseline

	Ever applied for overseas work, baseline	
	(1)	(2)
Likeliest wage would earn abroad (in thousands)	0.003** [0.001]	0.001 [0.001]
Likelihood offered job if applied	0.434*** [0.059]	0.251*** [0.058]
Female		0.005 [0.035]
Age		0.001 [0.003]
Any children		-0.043 [0.031]
At least high school graduate		0.126*** [0.029]
College graduate		0.162*** [0.044]
Employed		0.027 [0.036]
Ever worked in Manila		0.070** [0.034]
Interested in working abroad		0.154*** [0.046]
Constant	0.031 [0.064]	-0.091 [0.115]
Observations	862	862
R-squared	0.105	0.173

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

Notes: Sample restricted to baseline respondents with non-missing covariates. Stratification cell and enumerator FE included. Robust standard errors clustered at the neighborhood level reported in brackets. Binary indicators included for missing data on likeliest wages and likelihood offered a job abroad.

Table C.3: Baseline accuracy of respondent perceptions of minimum qualifications for work abroad

	Minimum education required to work abroad				
	Median		Accuracy of respondent estimates		
	Baseline	Workabroad.ph	% Below	% Correct	% Above
Domestic helper	High school	High school	0.11	0.61	0.28
Caretaker	High school	Some college/voc	0.57	0.25	0.18
Plumber	High school	High school	0.14	0.63	0.23
Construction worker	High school	High school	0.10	0.52	0.38
Food service worker	Some college/voc	Some college/voc	0.42	0.29	0.29
Factory worker	High school	Some college/voc	0.53	0.27	0.20

	Minimum years experience to work abroad				
	Median		Accuracy of respondent estimates		
	Baseline	Workabroad.ph	% Below	% Correct	% Above
Domestic helper	1	0	0.00	0.30	0.70
Caretaker	1	1	0.28	0.50	0.22
Plumber	1	3	0.90	0.06	0.04
Construction worker	1	3	0.91	0.06	0.03
Food service worker	1	2	0.76	0.17	0.07
Factory worker	1	1 (men)/0(women)	0.20	0.55	0.25

Appendix D Robustness

Table D.1: Intention-to-treat estimates of voucher and information treatments on steps to migrate, probit specifications

	Look abroad, Apr.-Jan.	Recruitment agency visit, first time	Obtain passport	Interested in working abroad
	(1)	(2)	(3)	(4)
Voucher	0.000 [0.002]	-0.013 [0.012]	0.008 [0.010]	-0.034** [0.017]
Qualification Information	0.005 [0.005]	-0.009 [0.013]	0.011 [0.012]	-0.027 [0.021]
Wage Information	0.006 [0.006]	0.009 [0.015]	0.028* [0.015]	-0.005 [0.020]
Observations	826	826	826	825
Observations	826	826	826	826
Dependent Mean, Control	1.1%	6.0%	1.6%	13.0%

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

Notes: Sample restricted to follow-up respondents. Marginal effects reported at covariate means. Robust standard errors clustered at the neighborhood level reported in brackets. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently employed, ever employed in Manila, and interested in working abroad. Whether ever employed and whether completed at least high school excluded because they perfectly predict some outcome variables.

Table D.2: Intention-to-treat estimates of voucher and information treatments on job-search effort, probit specifications

	Whether look for work two months after job fair		
	Anywhere (1)	Within province (2)	Within Manila (3)
Voucher	0.004 [0.014]	-0.020** [0.008]	0.020* [0.011]
Wage Information	-0.002 [0.015]	-0.005 [0.010]	0.006 [0.009]
Qualification Information	-0.004 [0.016]	-0.008 [0.009]	0.004 [0.009]
Observations	826	826	826
Dependent Mean, Control	5.9%	4.3%	1.6%

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

Notes: Sample restricted to follow-up respondents. Marginal effects reported at covariate means. Robust standard errors clustered at the neighborhood level reported in brackets. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently employed, ever employed in Manila, and interested in working abroad. Whether ever employed and whether completed at least high school excluded because they perfectly predict some outcome variables.

Table D.3: Intention-to-treat estimates of voucher and information treatments on employment status at follow-up survey, probit specifications

At follow-up:	Any (1)	Formal (2)	Informal (3)	Self-employ. (4)
Voucher	0.018 [0.039]	0.037* [0.022]	0.034 [0.030]	-0.059* [0.031]
Wage Information	0.016 [0.042]	-0.011 [0.023]	0.031 [0.034]	-0.025 [0.035]
Qualification Information	0.090* [0.051]	-0.005 [0.023]	0.048 [0.039]	0.019 [0.036]
Observations	826	826	826	826
Dependent Mean, Control	54.1%	12.4%	14.6%	27.0%

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

Notes: Sample restricted to follow-up respondents. Marginal effects reported at covariate means. Robust standard errors clustered at the neighborhood level reported in brackets. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently employed, ever employed, ever employed in Manila, and interested in working abroad.

Table D.4: Robustness of voucher impacts on migration steps, job-search effort, and employment status

	Voucher					
	(1)	(2)	(3)	(4)	(5)	(6)
Whether take steps to find work abroad						
Look for work abroad, 10 mo	-0.002 [0.009]	0.001 [0.009]	0.000 [0.008]	-0.004 [0.010]	-0.002 [0.010]	-0.004 [0.009]
Visit RA first time	-0.022 [0.016]	-0.016 [0.014]	-0.017 [0.013]	-0.013 [0.018]	-0.009 [0.016]	-0.011 [0.014]
Obtain passport	-0.000 [0.015]	0.007 [0.014]	0.005 [0.013]	-0.002 [0.016]	0.004 [0.015]	0.001 [0.015]
Interested in working abroad	-0.051** [0.020]	-0.036** [0.018]	-0.035** [0.015]	-0.044** [0.022]	-0.034* [0.019]	-0.029* [0.017]
Whether look for work, two months after job fair						
Anywhere	-0.001 [0.015]	0.001 [0.014]	-0.002 [0.015]	0.011 [0.016]	0.011 [0.016]	0.006 [0.016]
Within province	-0.023** [0.010]	-0.022** [0.009]	-0.023** [0.010]	-0.022** [0.010]	-0.022** [0.010]	-0.023** [0.011]
Within Manila	0.022* [0.013]	0.022* [0.012]	0.021* [0.012]	0.033** [0.014]	0.033** [0.014]	0.029** [0.013]
Employment status at follow-up survey						
Any	0.000 [0.037]	0.012 [0.031]	0.005 [0.028]	0.011 [0.046]	0.014 [0.038]	0.010 [0.035]
Formal	0.022 [0.028]	0.039 [0.023]	0.047** [0.023]	0.033 [0.026]	0.040* [0.022]	0.046** [0.022]
Informal	0.026 [0.029]	0.029 [0.030]	0.024 [0.026]	0.040 [0.035]	0.041 [0.035]	0.041 [0.030]
Self-employment	-0.049 [0.033]	-0.056* [0.031]	-0.067*** [0.025]	-0.061 [0.039]	-0.067* [0.037]	-0.075** [0.031]
Proxy respondents included	YES	YES	YES	NO	NO	NO
Observations	826	826	826	663	663	663
Individual covariates		X	X		X	X
Stratification cell fixed effects			X			X
Enumerator fixed effects			X			X

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

Notes: Sample restricted to follow-up respondents. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and interested in working abroad.

Table D.5: Robustness of wage information impacts on migration steps, job-search effort, and employment status

	Wage Information					
	(1)	(2)	(3)	(4)	(5)	(6)
Whether take steps to find work abroad						
Look for work abroad, 10 mo	0.008 [0.010]	0.010 [0.010]	0.008 [0.008]	0.010 [0.012]	0.011 [0.012]	0.008 [0.010]
Visit RA first time	0.005 [0.021]	0.013 [0.019]	0.012 [0.018]	0.007 [0.021]	0.012 [0.019]	0.011 [0.019]
Obtain passport	0.030 [0.019]	0.031* [0.018]	0.032* [0.017]	0.039* [0.021]	0.038* [0.020]	0.040** [0.018]
Interested in working abroad	-0.012 [0.030]	-0.007 [0.026]	-0.004 [0.023]	0.003 [0.034]	0.006 [0.030]	0.010 [0.026]
Whether look for work, two months after job fair						
Anywhere	-0.002 [0.017]	-0.001 [0.017]	-0.004 [0.017]	-0.003 [0.018]	-0.001 [0.018]	-0.001 [0.018]
Within province	-0.006 [0.013]	-0.006 [0.013]	-0.007 [0.013]	-0.004 [0.014]	-0.003 [0.014]	-0.000 [0.014]
Within Manila	0.008 [0.013]	0.009 [0.013]	0.008 [0.013]	0.006 [0.013]	0.006 [0.013]	0.006 [0.013]
Employment status at follow-up survey						
Any	-0.016 [0.039]	0.004 [0.033]	0.005 [0.033]	-0.003 [0.051]	0.000 [0.040]	0.000 [0.043]
Formal	-0.007 [0.033]	-0.012 [0.028]	-0.001 [0.028]	0.009 [0.031]	0.002 [0.025]	0.013 [0.023]
Informal	0.027 [0.032]	0.035 [0.032]	0.029 [0.034]	0.030 [0.034]	0.032 [0.033]	0.020 [0.035]
Self-employment	-0.036 [0.038]	-0.019 [0.033]	-0.023 [0.029]	-0.042 [0.044]	-0.033 [0.038]	-0.033 [0.034]
Proxy respondents included	YES	YES	YES	NO	NO	NO
Observations	826	826	826	663	663	663
Individual covariates		X	X		X	X
Stratification cell fixed effects			X			X
Enumerator fixed effects			X			X

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

Notes: Sample restricted to follow-up respondents. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and interested in working abroad.

Table D.6: Robustness of qualification information impacts on migration steps, job-search effort, and employment status

	Qualification Information					
	(1)	(2)	(3)	(4)	(5)	(6)
Whether take steps to find work abroad						
Look for work abroad, 10 mo	0.011 [0.010]	0.010 [0.010]	0.007 [0.009]	0.012 [0.011]	0.012 [0.011]	0.009 [0.009]
Visit RA first time	-0.012 [0.018]	-0.010 [0.017]	-0.009 [0.017]	-0.008 [0.019]	-0.004 [0.018]	-0.002 [0.017]
Obtain passport	0.007 [0.013]	0.011 [0.012]	0.008 [0.013]	0.007 [0.013]	0.012 [0.013]	0.012 [0.014]
Interested in working abroad	-0.046 [0.028]	-0.034 [0.025]	-0.034 [0.025]	-0.051* [0.026]	-0.037 [0.023]	-0.030 [0.024]
Whether look for work, two months after job fair						
Anywhere	-0.010 [0.017]	-0.004 [0.017]	-0.011 [0.016]	0.010 [0.018]	0.015 [0.018]	0.011 [0.017]
Within province	-0.012 [0.012]	-0.011 [0.012]	-0.011 [0.012]	-0.007 [0.013]	-0.006 [0.013]	-0.003 [0.013]
Within Manila	-0.002 [0.012]	0.003 [0.012]	-0.001 [0.011]	0.013 [0.013]	0.016 [0.013]	0.013 [0.013]
Employment status at follow-up survey						
Any	0.051 [0.044]	0.065 [0.041]	0.059 [0.037]	0.057 [0.052]	0.074 [0.046]	0.074* [0.044]
Formal	-0.027 [0.030]	-0.007 [0.026]	-0.000 [0.025]	-0.001 [0.027]	0.013 [0.023]	0.018 [0.023]
Informal	0.042 [0.037]	0.049 [0.037]	0.041 [0.038]	0.065 [0.040]	0.070* [0.039]	0.061 [0.040]
Self-employment	0.035 [0.038]	0.023 [0.036]	0.019 [0.033]	-0.007 [0.045]	-0.009 [0.043]	-0.004 [0.039]
Proxy respondents included	YES	YES	YES	NO	NO	NO
Observations	826	826	826	663	663	663
Individual covariates		X	X		X	X
Stratification cell fixed effects			X			X
Enumerator fixed effects			X			X

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

Notes: Sample restricted to follow-up respondents. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and interested in working abroad.

Appendix E Qualification Treatment Heterogeneity

Like the wage information treatment, information about minimum qualifications for overseas work may have heterogeneous impacts depending on respondents' characteristics, both because their response may depend on their own perceptions, and because what information they receive depends on their gender and may also depend on their education level and work experience. I examine the role of heterogeneity to determine whether the information affects individuals' behavior and labor market perceptions differentially by gender or by educational attainment. I estimate the ITT impact of minimum qualification information on whether individuals attend the job fair, their average accuracy on minimum experience requirements described earlier, their predicted probability of being offered a job overseas if they apply (the "perceived likelihood of job-finding abroad"), and their self-reported qualification level for overseas work. The last measure is based on reports of how qualified respondents say they are for each of six common overseas positions, ranging from "not qualified" (1) to "very qualified" (5).⁶⁶ I take the maximum of these six values as their self-reported qualification level. Appendix Table E.1 reports estimates for these three measures, first using the full sample, then separately by gender and by whether they had completed at least some post-secondary schooling.⁶⁷

Although the qualification information has no net impact overall, men assigned to receive qualification information are 9.1 percentage points more likely to attend the job fair, and they increase their perceived likelihood of job-finding abroad, conditional on applying, by 10.3 percentage points. This change in the perceived likelihood of job-finding abroad is statistically significantly different between men and women.⁶⁸ The impact on the maximum qualification index is also positive for men, though small and not statistically significant.

⁶⁶These positions are domestic helper, caretaker, construction worker, plumber, factory worker, and food service crew member. I control for the baseline reported maximum qualification index in these specifications.

⁶⁷I exclude proxy surveys in all specifications, as the perceived probabilities of job offers and qualification levels are only reported in the full surveys. Attendance results are comparable in the full sample.

⁶⁸The reported p-values of tests of the equality of coefficients between men and women are based on a model that fully interacts a gender dummy with all treatment indicators, covariates, and fixed effects.

These results contrast sharply with the results for women, which are all negative and not statistically significant, and are different from the results for men at the five-percent level. The distinction along education lines is less clear, which is reasonable given that a high school diploma is a sufficient qualification for many occupations and that this does not account for relevant experience, the dimension along which individuals were the least accurate. Consequently, qualification information does not affect attendance or the perceived likelihood of job-finding abroad for those with or without post-secondary education, though individuals with some post-secondary education report that they are more qualified for overseas positions at follow-up.

Together, the heterogeneity in impacts suggest that information about minimum qualifications for overseas work does affect individuals' perceptions about minimum qualifications for overseas work, but that it only translates to changes in one's own labor market perceptions and job-fair attendance for men. In Appendix Table E.2, I find that qualification information has small impacts on migration steps taken (those used in Table 3) by gender and by educational attainment. There are broadly positive impacts on migration steps among those who did not complete any post-secondary schooling, but only one of these - whether an individual searched abroad at all in the ten months following the fair - is marginally statistically significant. There are also small, negative impacts of qualification information on the likelihood of visiting a recruitment agency for the first time among women and those with some post-secondary schooling, but only the latter is marginally statistically significant. I cannot reject the equality of coefficients between gender or education subgroups.

Table E.1: Heterogeneous impacts of qualification information on job-fair attendance and overseas labor market perceptions, by gender and education

	Attend job fair (1)	Abs. average dif. in min. experience (2)	Prob. job offer abroad, if apply (3)	Qualification index, 1(low) -5 (high) (4)
All	0.024 [0.031]	-0.057* [0.031]	0.040 [0.025]	0.106 [0.137]
Men	0.091* [0.047]	-0.067 [0.048]	0.103*** [0.032]	0.140 [0.178]
Women	-0.025 [0.042]	-0.062 [0.043]	0.004 [0.033]	-0.018 [0.153]
High school or less	0.014 [0.041]	-0.044 [0.046]	0.070** [0.035]	-0.016 [0.175]
More than high school	0.020 [0.054]	-0.087** [0.042]	-0.032 [0.039]	0.365* [0.217]
Total observations	862	629	663	663
Dep. Mean, Control	12.7%	1.3	47.5%	3.7
P-value from test for equality of coefficients				
Gender	0.12	0.98	0.01**	0.60
Education	0.80	0.74	0.05*	0.04**

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

Notes: Sample restricted to baseline respondents with full follow-up surveys. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and interested in working abroad.

Table E.2: Heterogeneous impacts of qualification information on steps to migrate, by gender and education

	Look abroad, Apr.-Jan.	Recruitment agency visit, first time	Obtain passport
	(1)	(2)	(3)
All	0.007 [0.009]	-0.009 [0.017]	0.008 [0.013]
Men	0.024 [0.016]	0.024 [0.026]	-0.008 [0.016]
Women	-0.003 [0.009]	-0.034 [0.024]	0.023 [0.023]
High school or less	0.013* [0.008]	0.012 [0.022]	0.010 [0.014]
More than high school	0.007 [0.021]	-0.034 [0.026]	0.002 [0.024]
Total observations	826	826	826
Dependent Mean, Control	1.1%	5.9%	1.6%
P-value from test for equality of coefficients			
Gender	0.17	0.12	0.28
Education	0.74	0.18	0.79

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

Notes: Sample includes all follow-up respondents. Robust standard errors clustered at the neighborhood level reported in brackets. Stratification cell and enumerator fixed effects included. Individual characteristics include sex, age, marital status, education, and dummy variables for whether currently or ever employed, ever employed in Manila, and interested in working abroad.