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Broker versus Social Networks in Adverse Working Conditions: Cross-Sectional Evidence from Cambodian Migrants in Thailand*

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Abstract

Using unique survey data from Cambodians who worked in Thailand, we investigate the wage and non-wage job values for workers across job search methods, focusing on the difference between social networks and brokers. This paper examines whether cross-border migration through brokers brings more adverse workplace conditions than other job search methods by looking at subjective measures of non-wage job values in the destination country. Compared with migrants who obtained job information by themselves or from friends and family, migrants who got job information through brokers are more likely to receive higher expected wage gains from migration, but they are not likely to receive a higher wage in Thailand. Furthermore, they are more likely to experience adverse non-wage job values (i.e., adverse workplace conditions), even though migrants have similar individual characteristics, migration experiences, and original locations. The migrants who got a job through brokers are also more likely to be categorized a victim of human trafficking by officials in the border area of Poipet, Cambodia. The evidence suggests that brokers are less likely to connect the Cambodian migrants with high wage jobs or better workplaces, and the results are more consistent with the explanation that exploiting strong individual ties (family/friends) are a safer route to obtaining better non-wage job values than brokers. The overall findings of this paper show the importance of a deeper understanding of employer behavior that leads to utilizing brokers to find migrant workers for poor jobs in destination marketplaces.

Keywords: Workplaces conditions, Brokers, Cross-border migration, Cambodia, Thailand.
JEL Classification Number: D83; J01; M50; O15.

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1 Introduction

Social networks have been popular in labor markets within and across borders, but migrant job-seekers and foreign employers still use brokers to find jobs and fill vacancies even though online communications and employee referrals are becoming prevalent. However, it is true that the use of brokers is more important for migrants and foreign firms in cross-border labor markets than job-seekers and vacancies in domestic labor markets. This raises the following questions. How do brokers still play a significant role in cross-border labor markets? What working conditions do migrant job-seekers acquire through brokers compared with those obtained through social networks when they move to other countries? If migrant job-seekers have poor social networks in their country of origin, using a broker may be preferable. Brokers may charge migrant job-seekers a lot, but brokers bring them to the employer at the destination. It is also a convenient avenue for migrant job-seekers to do passive searches, because brokers assist migrants; however, the workplaces may be unseen before arrival. Conversely, while migrant job-seekers may not incur charges when using social networks or employee referrals and the workplace may be better known, it may take longer to find the right job in the destination market through these mechanisms in foreign countries. There is a trade-off between search strategies and job search methods, especially for migrants.

Due to a lack of information, such as possible employment opportunities in the destinations or legal procedures for employment, migrant workers may use their social networks, brokers at the destination, or brokers at their origin. In all of these cases, migrant workers face risks of deceit, exploitation, and other forms of criminal activity on the way to and at the destination; some are deceived by their acquaintances and others by brokers. Using the primary survey data collected by the United Nations Inter-Agency Project on Human Trafficking (UNIAP) on the return of migrant workers from Thailand to Cambodia, this paper looks closely at relations between the use of intermediaries, such as social networks and brokers, and the outcomes of the migration, such as employment conditions and subjective evaluation of the experience. We also examine the effect of intermediation by a broker on wages and workplace conditions.

This paper investigates the working conditions of migrant job-seekers who use brokers and those who depend on social networks to address the question of disparities in wage and non-wage job values across job search methods. To do this, we use the results of a unique survey for Cambodian migrants who worked in Thailand. The survey had three rounds and the repeated cross-sectional dataset includes offered wages, realized wages and non-wage job values at workplaces in Thailand, and job search methods for migrants, as well as the amount of payment to brokers to cross the border and detailed individual characteristics for

Cambodian migrants. These rich and unique features of the data allow us to examine two classical questions in social sciences: how wages and non-wage job values interact with each other in the case of cross-border migration and how working conditions vary across job search methods among migrants. In particular, it is important to examine how non-wage job values differ between migrants who use brokers and those who use social networks because, in addition to remittances, non-wage job value could affect acceptance, exit, and stay decisions.

Utilizing the unique individual-level dataset for Cambodian migrants who worked in Thailand, we empirically investigate both the pecuniary and non-monetary benefits and costs to workers of getting jobs through brokers and social networks. There are three novel results. First, compared with the migrants referred by family members, friends, village neighbors, or employers, those who relied on brokers are more likely to get higher offered wages, even though both sets of migrants have similar skill characteristics, experience, and origin locations. However, although migrants who use brokers have higher expected gains from migration in advance, the realized wages are not as high and there is no indication that realized wages are higher for migrants who use brokers. Second, there is large disparity in non-wage job values between migrants who use brokers and those who use social networks. The migrants who used brokers were working in worse-managed workplaces. Third, the migrants referred by brokers are more likely to be classified as victims of human trafficking by trained surveyors. However, using social networks is not without risk: migrants referred by village neighbors are also substantially less likely to work in a registered workplace with shorter working hours and higher wages. This evidence is consistent with the explanations that brokers deceive migrants and the workplaces to which brokers refer migrants are likely to be poor. In contrast, workplaces to which migrants go as a result of a referral by family and friends are likely to be better. According to these findings, the consequences of cross-border migration differ in non-wage job values across job search methods rather than in realized wages. This leads to a striking question about the role of employers: why do employers with adverse working conditions in Thailand utilize brokers to hire migrant workers to fill vacancies?

The contribution of this paper is two-fold. First, this paper contributes to the traditional and rapidly growing literature of the role of referrals in labor market. Searching and getting jobs through referrals and hiring through referrals are prevalent in many sectors. Ioannides and Loury (2004) and Topa (2011) surveyed the empirical contributions of the role of job networks and theories explaining the benefits of the use of networks. Holzer (1987, 1988) documents the search methods used by young job-seekers and Granovetter (1995) shows the strength of ties that job-seekers rarely meet up with. The most recent work examining the benefits and costs of hiring through referrals is that by Burks, Cowgill, Hoffman, and Housman (2015). Previous

research on labor market networks includes both theoretical and empirical studies. There are several strands of theoretical explanation of the benefits and costs of relying on referral-based networks, for example, Calvo-Armengol and Jackson (2004), Montgomery (1991), Simon and Warner (1992), Casella and Hanaki (2006), Currarini, Jackson, and Pin (2009), Galenianos (2011), Mortensen and Vishwanath (1994), and Montogomery (1991).[1]

Second, this paper contributes to the literature of the role of non-wage job values in labor supply and migration. For some previous studies of non-wage working conditions for migrants, see McKenzie, Gibson, and Stillman (2013) and Stillman, Gibson, and McKenzie (2015). The current paper uses ideas from Cottini, Kato, Westergaard-Nielsen (2011) and Levine, Toffel, and Johnson (2012), and examines workplace hazards as measures of non-wage job values, including employer characteristics and peer characteristics. In our analysis, we assume that adverse workplace conditions imply labor coercion and the use of coercive tactics toward employees (Acemoglu and Wolitzky 2011), then we investigate which search methods are more likely to lead to adverse working conditions for immigrants who work at low-skilled jobs. In the context of human trafficking and illegal migration, non-wage job values is an important dimension in understanding job offers and cross-border migration. Sorajjakook's book on human trafficking in Thailand gives an overview and classifies the several types of human trafficking to Thailand from neighboring countries in Southeast Asia (Sorajjakook, 2013). This paper makes a contribution to studying working conditions for cross-border migrants, especially those working in developing economies.

The rest of the paper is organized as follows. Section 2 explains the background and the survey. Section 3 presents the conceptual framework of the relationship between the adverse working conditions, indirect contacts through brokers, and the Cambodian migrants in Thailand. Section 4 gives the summary statistics of key outcomes, explanatory variables, and control variables. Section 5 describes the results. In that section, we report the relationship between wages and the use of brokers. We also report the relationship between the use of brokers and working conditions for Cambodian migrants in Thailand. We provide evidence of choice of search methods in Section 6. Section 7 contains a discussion of the results and our conclusions.

[1]Observational studies are Rees (1966): Loury (2006), Marmaros and Sacerdote (2002), Datcher (1983), Pistaferri (1999), Kugler (2003), Pellizzari (2009), Bayer, Ross, and Topa (2008), Dustmann, Schoenberg, and Bruecker (2015), Heath (2015), Kramarz and Skans (2014), Stanton and Thomas (2014), Brown, Setren, and Topa (2013), and Hensvik and Skans (2013). (Field) experiments have recently started to test mechanisms of why referrals work: Beaman and Magruder (2012), Beaman, Keleher, and Magruder (2013), Abaluck Hoffman, and Pallais (2013), Pallais (2014), Stanton and Thomas (2015a, b), and Kuzbas and Szabo (2015).

2 Background and data

2.1 Cambodian migrants in Thailand

Thailand is the most popular destination for Cambodian migrants. The number of Cambodian migrants in Thailand in 2013 was 750,109 persons. This is 71.9% of the number of people going to the top five destinations of Cambodian migration. Among the top five origin countries for migrants in Thailand, Cambodia is the third largest, followed by Myanmar and Laos.[2]

During the 1960s and 1970s, Thailand experienced high economic growth and absorbed foreign direct investment (FDI) as well as international migrants mainly from neighboring countries, such as Cambodia, Myanmar, and Laos. In August 2011, Thailand was upgraded to a upper middle-income economies by the World Bank. The Thai economy achieved average economic growth as high as 6.5% from 1960 to 2000. This was enabled by a better environment for FDI, including political stability.[3] This growing economy has absorbed migrants from neighboring countries in various forms and there have been continuous inflows of migrants.

The reasons for the migration include economic purposes and political instability in the origin country. In 1998, the daily wage of a Cambodian worker in Thailand was twice as much as comparable wages in Cambodia.[4] Other than economic factors, some of the migrants have additional reasons for their migration, such as social insecurity and internal conflict in their home countries.[5] This is a typical reason for Cambodian migrants until the early 1990s and Burmese migrants until the early 2000s. After the end of internal conflicts in Cambodia from The 1991 Paris Peace Accords to peacekeeping operation in 1992–1993 by The United Nations Transitional Authority in Cambodia (UNTAC), the great majority of Cambodians granted refugee status were repatriated. Subsequently, internal and external migration started growing within and from Cambodia.

The presence of undocumented migrants in Thailand has been widely recognized since the 1980s and has been repeatedly discussed in the parliament. In 2004, the Thai government registered “unregistered migrants" at no cost to the migrants themselves and found there were 168,000 Cambodians, which was 14% of registered migrants at the time.[6] As a result of the

[2]For the top five origin countries for migrants in Thailand, the total number of migrants was 3,669,251, and the shares of the top three were 51.6%, 25.2%, and 20.4%, respectively. See United Nations, DESA-Population Division and UNICEF (2014) for more details.

[3]See for example, Frankema and Lindblad (2006).

[4]See Sophal and Sovannarith (1999) for more detail.

[5]While Thailand has not signed the 1951 Convention on the status of refugees nor its Protocol 1967, by its cooperation with UNHCR, the Thai government recognizes refugees as “persons of concern to UNHCR”. The immigration Act in 1979 and its subsequent amendment allows for the settlement of about 117,000 displaced persons from Myanmar. See Huguet and Punpuing (2005) for more detail.

[6]The total number of registered migrants was 1.28 million, which is twice as many as in 2001 and 2002. A

efforts made by bilateral agreements, Tunon and Rim (2013) show that since 2006 the number of legally documented migrants has been rapidly increasing. However, it is presumed that there is a large number of undocumented migrants and unregistered workers in Thailand from Cambodia.

During the course of their migration, migrant workers face risks of deceit or exploitation and other forms of criminal activity on the way to and at their destination. Some are deceived by acquaintances and others are deceived by brokers, which are used due to lack of information about border crossing, visas, or possible employment opportunities. The exploitation of migrant workers is not well-captured by public statistics: such statistics are absent in the origin countries and it is also difficult to capture such statistics in the destination countries because the migrants are mostly in informal sectors and are sometimes isolated from society.

Persons may be subject to forced labor when they work against their will.[7] The factors composing human trafficking are deception, transportation, and exploitation. These factors are closely linked with the matching market with asymmetric information. In situations of asymmetric information, in which some people have insufficient access to information, brokers who have more information may take exploitative actions.[8]

2.2 Survey and data collection

We utilize a survey of Cambodian workers deported from Thailand. This survey was undertaken by the UNIAP in 2009–2010 and 2012 in Poipet, Cambodia, where there is a border between Cambodia and Thailand. Baker (2015) summarizes the survey and data collection project, which is called the "Human trafficking sentinel surveillance on irregular migrant workers being deported back to Cambodia".[9] The methodology used in the survey is in-depth and structured interviews based on a comprehensive questionnaire that was designed

similar registration of irregular migrants was implemented in 2011 as well. See Huguet and Punpuing (2005) for more detail.

[7]The definition by the International Labour Organization (ILO) is as follows. Forced labor refers to situations in which persons are coerced to work through the use of violence or intimidation, or by more subtle means such as accumulated debt, retention of identity papers or threats of denunciation to immigration authorities. Forced labor, contemporary forms of slavery, debt bondage, and human trafficking are closely related terms, though not identical in a legal sense. Most situations of slavery or human trafficking are, however, covered by the ILO's definition of forced labor.

[8]We show the definition of human trafficking. Article 3, paragraph (a) of the Protocol to Prevent, Suppress and Punish Trafficking in Persons defines trafficking in persons as the recruitment, transportation, transfer, harboring, or receipt of persons, by means of the threat or use of force or other forms of coercion; of abduction, of fraud, of deception, of abuse of power, or of a position of vulnerability; or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labor or services, slavery or practices similar to slavery, servitude, or the removal of organs.

[9]A pilot study was conducted in 2008 on the Cambodian side of the Aranyaprathet–Poipet border.

to identify indications of human trafficking. The data of this paper integrates the data of the Human Trafficking Sentinel Surveillance: Poipet, Cambodia 2009–2010 with two additional datasets collected at the same border in 2010 and 2012. Thus, we have three rounds of survey data collected at the same border.

3 Sample statistics

3.1 Key outcome variables

Table 1 provides the summary statistics of the outcome variables for Cambodian migrants in Thailand that we use in the following empirical sections. We identify the immigrant workers by the different information sources used to get a job in Thailand and by the use of indirect contact through brokers or direct applications to employers in Thailand. We consider many different types of outcome variables involving both monetary and non-monetary characteristics, capturing pre-migration income, costs of migration to Thailand, post-migration income, and workplace conditions. The first and second columns of Table 1 show the name/definitions and the number of observation of each variable. The third and fourth columns of Table 1 provide the mean and standard deviations of the whole sample.

Table 2 provides the summary statistics of Cambodian immigrants broken down by method of contact. Table 2 shows that average monthly wage of previous job in Cambodia is lower for immigrants who use indirect contact through brokers than immigrants who use direct application to employers in Thailand or indirect contact through friends and family. The subjective measures of quality of life in Cambodia (very poor: 1; very rich: 5) is lower for immigrants who use indirect contact through brokers, on average. The average offered wage is lower for immigrants who use indirect contact through brokers than immigrants who use direct contact to employers or indirect contact through family and friends networks. The gap between monthly offered and wage of previous job is the expected gain of migration to Thailand. Although the offered and previous monthly wages are lower for immigrants who use indirect contact through brokers than immigrants who did not rely on the brokers, the gap between the offered and wage of previous jobs is larger for immigrants who use indirect contact through brokers. The average expected number of working months in Thailand is also longer for immigrants who use brokers.

==**Table 1** here: Summary statistics of outcomes==

3.2 Gap between realized and offered wages

Let us move on to objective measures of employment status in Thailand and average gains from migration to Thailand. Table 2 covers employment rate, rate of working at registered workplace, realized monthly wages, working hours, and wage rates. The Cambodian immigrants have a higher employment rate in Thailand, but the rate of working at a registered workplace is low, especially for immigrants who use indirect contact through brokers, for whom it is only 5%. The average realized wages for immigrants who use indirect contact through brokers and immigrants who use another job search method are almost same. The average working hours per month and average wage rates for the two types of immigrants are also the same. Since we have observed pre-migration monthly wages in Cambodia, offered wages for immigrants from brokers or employers in Thailand, and realized monthly wages in Thailand, we can also calculate the following important metrics of the gains from migration: (1) the gap between realized wage and wage of previous jobs, and (2) the gap between realized wage and offered wages. Table 2 suggests that the average gap between realized wage and wage of previous jobs is larger for immigrants who use indirect contact through brokers; the gap also has a larger standard deviation. The average realized wage is also lower than the offered wage. However, the average gap between these realized and offered wages is larger for immigrants who do not use brokers. In contrast, the gap between the average realized number of months staying in Thailand and the expected number of months staying in Thailand is larger for immigrants who use indirect contact through brokers. These immigrants stayed 10 months longer than expected while the immigrants who did not use brokers stayed 7 months longer than expected.

3.3 Working conditions: physical, scheduling, and human hazards

Table 2 also provides information about occupation and subjective measures of workplace conditions. The Cambodian immigrants are less likely to work in the construction sector and are more likely to work in agriculture and fishing vessels if they use brokers to get a job in Thailand. There are no substantial differences in the rate of employment in manufacturing and other jobs, including domestic (household) services. The survey has collected a lot of subjective five-level measures of workplace conditions in Thailand, including physical environmental hazards, scheduling hazards, and human hazards. The scale starts from very poor (1) to neutral (3) to very good (5). If the subjective measures have lower value, the seriousness of workplace hazards is large. We make a standardized z score of subjective measures of workplace conditions based on these different types of physical and human hazards. This

standardized score has mean 0 and standard deviation 1.

The average subjective measures of physical environmental conditions (e.g., provision of food and water and workplace safety) and scheduling conditions (e.g., rest/working hours, sick leave, freedom at job, and freedom to quit job) are worse for immigrants who use brokers than immigrants who do not use brokers. The average subjective measures of human conditions (workplace violence and bad boss) are also worse for immigrants who use brokers than immigrants who do not use brokers. The standardized score of workplace condition is also lower for immigrants who use brokers. In summary, immigrants who use brokers are more likely to get adverse workplace conditions with higher physical, scheduling, and human hazards. The survey has scrutinized the workplace hazards by collecting information about cheating by employers in Thailand and whether the individual has ever tried to escape from an employer in Thailand. The immigrants who use brokers are more likely to have been cheated and to have tried escape. However, the rate of sending remittances to Cambodia is higher for immigrants who use brokers. The experience of being arrested or deported by Thai police is less likely for immigrants who use brokers. In summary, the standard quality of life in Thailand is much lower for immigrants who use brokers than immigrants who do not use brokers. On average, Cambodian migrants who use indirect contacts through brokers are less likely to be categorized as a victim of human trafficking. This paper is going to test whether and how indirect contact through brokers affects adverse working conditions compared with other information sources of cross-border job search—direct applications to employers and indirect contact through family and friends—by controlling individual-level explanatory variables.

To summarize the role of job information channels on workplace conditions, the summary statistics show that Cambodian migrants who relied on indirect contact through brokers are more likely to have adverse working conditions in terms of physical hazards, scheduling hazards, and human hazards. They also show that Cambodian migrants using indirect contact through brokers are less likely to work at better workplaces as judged by several criteria.

==**Table 2** here: Summary statistics of outcomes by job search channels==

3.4 Explanatory variables

Table 3 reports the summary statistics of main explanatory variables and control variables. The main individual-level explanatory variables for the Cambodian migrants are information sources of jobs in Thailand. We list six different possibilities for acquisition of information

about a job in Thailand: (1) through brokers, (2) through village neighbors, (3) through friends, (4) through family; (5) by searching for a job by themselves (i.e., direct applications to employers); or (6) through employers (i.e., direct applications to employers). One-third of the sample got job information through brokers. The proportion of immigrants who use village neighbors as an information source is only 6%. To examine the role of social and family networks, we will look at friends and family networks separately. The proportion of immigrants who use friends as an information source is 14.4%, while the proportion of immigrants who use their family as an information source is 13.7%. Immigrants who do not rely on indirect contacts through brokers and friends or family networks constitute only 7.5%. Immigrants who can get job information directly from employers in Thailand represent 14.7% of the sample. The survey has information about previous migration experience of the Cambodian immigrants: about 46% of the sample had never been to Thailand while about 12% of the sample had moved to Thailand once before. Males make up slightly more than three-quarters of the sample. Immigrants tend to be young, with an average age of twenty-five years. They are uneducated; on average, the number of years of education is less than four. The majority of them came from agriculture and other miscellaneous sectors in Cambodia rather than the construction, fishing vessel, service, and manufacturing sectors, which employers in Thailand demand. We have four different originating locations (states) that send immigrants to Thailand: (1) Banteay Meanchey, including Poipet; (2) states near to Poipet; (3) states near to Siem Reap; and (4) states near to Phnom Penh. More than one-third of the immigrants came from Banteay Meanchey, which is located close to the Poipet border crossing between Cambodia and Thailand.

==**Table 3** here: Summary statistics of explanatory variables==

4 Theoretical background

Cambodian workers who are considering migration to Thailand have three options: (1) choose to stay in Cambodia; (2) choose to search, use direct contact to employers, and move to jobs in Thailand by themselves; or (3) choose to use indirect contact through brokers. We do not formally explain the role of indirect contact through family and friends here. In the empirical sections, we will carefully check the importance of family and friends networks as information sources for jobs in Thailand. There are good jobs and bad jobs in the labor market in Thailand. The proportion of the bad jobs in the labor market is denoted by q, while the proportion of good jobs is $(1-q)$.

We will now explain the illustrative framework of getting a job in Thailand for Cambodian immigrants. There are two types of jobs: good jobs and bad jobs. In a good job, the employers in Thailand pay the promised wage $\hat{y}$ when the Cambodian immigrants arrive in the workplace. In the case of bad jobs, the realized wage y is lower than the promised wage by a random amount $\varepsilon > 0$ representing the firm's coercion or deductions. For this reason, we also call bad jobs "jobs with noise". Thus, the realized wage y varies with the job obtained as follows:

$$y = \begin{cases} \hat{y} & \text{if good job} \\ \hat{y} - \varepsilon & \text{if bad job.} \end{cases}$$

We assume that the offered wage $\hat{y}$ for bad jobs varies with information sources–direct application to employers ($\hat{y}_{\text{direct}} = y + \varepsilon_{\text{direct}}$) or indirect contact through brokers ($\hat{y}_{\text{brokers}} = y + \varepsilon_{\text{brokers}}$). To derive the value of getting a job in Thailand through direct application or indirect contact through brokers V_j, we define the probability of meeting job offers with noise to be q_j, which also varies with search method $j \in \{\text{direct}, \text{broker}\}$. We assume that the probability of obtaining a bad job for Cambodian migrants is in the same as the share of bad jobs in Thailand q, since the bad employers in Thailand have had two options—public wage posting to potential immigrants with posting costs and indirect contact through brokers with fees to brokers. This paper does not formalize the employer side of profit maximization and the trade-off between the costs of wage posting and transaction fees to brokers. The probability of meeting bad employers in Thailand who have a noisy job offer is q_{direct}. The probability of meeting brokers who introduce bad jobs is q_{brokers}.

The value of getting a job in Thailand through search method j consists of (1) the probability of getting a bad job when the migrant arrives in Thailand q_j, (2) the value of working at a bad job $V(b)$, and (3) the value of working at a good job $V(g)$: $V_j(y) = q_j V(b) + (1 - q_j)V(g)$. The expected value of getting a job is, therefore,

$$V_j(y) = \hat{y} - q_j \cdot \varepsilon. \tag{1}$$

In sum, the timeline of the Cambodian migrants is as follows.

$$\boxed{\text{Observe offered wage } \hat{y}} \rightarrow \boxed{\text{Pay fee to brokers}} \rightarrow \boxed{\text{Migration}} \rightarrow \boxed{\text{Realize } y = \hat{y} \text{ or } y = \hat{y} - \varepsilon}$$

Using this simple framework we can derive the following proposition.

Hypothesis 1. *The wage level for workers who use indirect contact through brokers could be lower than the wage level for workers who use direct application to employers if bad jobs are more likely to be advertised though brokers than direct posting.*

$$V_{\text{direct}}(y) \equiv E(y|q_{\text{direct}}) > E(y|q_{\text{brokers}}) \equiv V_{\text{brokers}}(y). \tag{2}$$

This paper tests this proposition in the following sections. In addition to this, we extend this framework to study non-wage characteristics, that is, workplace conditions or occupational health and safety. We assume that the bad employers also offer a level of non-wage workplace conditions represented as $\hat{h}$, but the actual working conditions of bad employers is $h = \hat{h} - \xi$. The employers in Thailand can invest in improving working conditions to attract and retain workers. Then, the actual occupational health and safety level h is higher for such an employer than for one not investing in improving working conditions. We assume that this investment is costly, but it improves productivity because of the increase in workers' retention. There is a trade-off between improving productivity and an increase in costs. We do not model the employers' maximization problem of profits here, but assume that the employers in Thailand will optimize the level of h by seeking higher productivity and lower costs from improving working conditions to maximize the profits. In equilibrium, both the wages y and working conditions h may also have dispersions because of an employer's optimization in a frictional labor market. In summary, the timeline of the employers in Thailand and brokers is as follows.

$$\boxed{\text{Invest } h} \rightarrow \boxed{\text{Pay fee to brokers}} \rightarrow \boxed{\text{Offer } \hat{y} \text{ and } \hat{h}} \rightarrow \boxed{\text{Employers use coercive tactics or not}}$$

Using this framework we can also derive the following proposition.

Hypothesis 2. *The workplace conditions for Cambodian immigrant workers who use indirect contact through brokers could be lower than the workplace conditions for immigrant workers who use direct application to employers if bad employers who do not invest in occupational health and safety at their workplace in Thailand are more likely to use brokers rather than direct job posting.*

$$V_{\text{direct}}(h) \equiv E(h|q_{\text{direct}}) > E(h|q_{\text{brokers}}) \equiv V_{\text{brokers}}(h). \tag{3}$$

5 Results

5.1 Descriptive results

According to the first look at the data in the previous sections, we generally find that working conditions are adverse for those who used indirect contact through brokers while realized monthly wages and wage rates for those who relied on brokers are not much higher. To summarize this, Table 2 presents the means of labor market outcomes across job information

channels. We will start from the relationship between pre-migration status of immigrants and personal contacts of the job in Thailand. Table 2 looks at the following outcomes: (1) previous monthly wages, (2) offered monthly wages, and (3) the gap between offered and wage of previous jobs. The mean of wage of previous jobs for those who used indirect contacts through brokers and village neighbors is lower than for those who used indirect contacts through friends and family ties and direct contacts to employers. The offered wages for those who used brokers and village neighbors are not lower than those who rely on friends and family ties and direct contacts to employers. The realized monthly wages for those who used indirect contacts through brokers are not lower than for other channels. The realized hourly wage rates for those who relied on brokers are also not lower than other channels.

We begin by discussing the characteristics of pre-migration status by information source before presenting empirical results. To check the patterns of previous monthly wages in Cambodia, we will look at the average level of the logarithm of previous monthly wages for immigrants who use indirect contact through brokers and those who use direct contact with employers. We will also look at the average level of the logarithm of offered monthly wages to Cambodian immigrants who use indirect contact through brokers and those who use direct contact to employers. Finally, this table shows the gap between offered monthly wages and previous monthly wages for two types of immigrants: those who use indirect and those who usedirect contacts to get a job in Thailand.

Average previous monthly wages are almost the same for indirect and direct contacts. The average offered wages are a little bit lower for Cambodian immigrants who use brokers. The expected gain from migration is depicted by the offered over previous monthly wages. It is somewhat higher for those who used brokers and village neighbors. But the wages promised by brokers and village neighbors are not fully paid; the ratio of realized over offered monthly wage is 0.75 and 0.64 for those who relied on brokers and neighbors, respectively. These are lower than the mean values of the whole sample. The realized gain from migration is shown by the realized over previous monthly wages. These are also somewhat higher on average for those who relied on brokers and village neighbors than other channels. This partially explains the use of indirect contacts through brokers; even if brokers charged a lot for crossing the border between Cambodia and Thailand, the expected gain of cross-border migration for immigrants who use indirect contact is higher than that of immigrants who use direct contact with employers.

Finally, Table 2 shows that average workplace conditions are worse for those who relied on brokers. When we look at physical working conditions (food and water and workplace safety), migrants who used indirect contacts through brokers are more likely to have a lower

score for physical working conditions. This suggests that physical hazards are higher for those who relied on brokers. This is also true for scheduling hazards and human hazards. In sum, the standardized z-score of working conditions based on physical, scheduling, and human hazards is lowest for those who relied on brokers among the different information channels.[10] The measures of quality of life in Thailand are also substantially lower for those who used brokers. They are more likely to have less freedom to quit, more likely to be cheated, and more likely to try to escape from the workplace. They are also more likely to be deported from Thailand, and, finally, they are more likely to be evaluated as being a victim of human trafficking. In addition to these, several measures of quality of life in Thailand for Cambodian migrants could vary across the information channels. The summary statistics tell us that Cambodian migrants who relied on indirect contact through brokers are more likely to have a riskier life in Thailand.

5.2 Offered wages in Cambodia

We now move on to the regression results. We examine whether migrants were more likely to be promised higher wages if they had indirect contact through brokers. We provide the main empirical results on the labor market returns for the use of brokers by Cambodian migrants in Thailand. Columns 1 to 3 of Table 4 show pre-migration status and offered wages at the time of pre-migration, which drives expected individual gains from migration to Thailand. The focus of this paper is indirect contact through brokers to study the role of intermediaries in cross-border migration, but we will also look at the impacts of village neighbors to study the role of weak ties within the original village. The village neighbors also play an important role of local intermediaries (local agents) between distant professional brokers and immigrants because village neighbors have local information which the distant professional brokers never know. We are also going to test how village neighbors play a similar role to brokers. We estimate following equation:

$$(\text{offered wages})_i = \alpha + \beta_1(\text{brokers})_i + \gamma(\text{covariates})_i + u_i, \tag{4}$$

where $(\text{offered wages})_i$ is offered monthly wages for migrant i. The covariates are pre-migration conditions of previous monthly wages, expected gains from cross-border migration, and expected working months in Thailand. The dummy variable $(\text{brokers})_i$ is equal to one if

[10]This is clear when we look at two kernel densities of z-score of working conditions for indirect contact through brokers and direct contact with employers (i.e., direct applications). This figure clearly shows that the mean z-score of working conditions for indirect contact through brokers is lower than both zero and the z-score of working conditions for direct contact through employers. The lower tail of the z-score of working conditions for the use of brokers is thicker than one of direct contact through employers.

immigrant i uses indirect contact through brokers, and is otherwise zero. The dummy variable $(\text{neighbors})_i$ is is equal to one if immigrant i uses indirect contact to village neighbors, and is otherwise zero. The error term is u_i.

Column 1 of Table 4 presents the relationship between the previous monthly wages and the use of indirect and direct contacts with employers in Thailand. The ordinary least squares results of Column 1 of Table 4 show that immigrants who use brokers were offered a wage in Cambodia that was 4.2 percentage points higher than immigrants who use direct contacts when controlling for individual characteristics. However, this is not statistically significant. The immigrants with 3 or more migration experiences were offered wages18.6 percentage points higher. Female migrants were offered wages 11.0 percentage points lower. Immigrants with longer education were offered wages 2.5 percentage points higher. These results were all statistically significant.

Column 2 of Table 4 compares direct application and brokers. We find that jobs through brokers offered wages that were 7.6 percentage points higher than job offers directly through employers or supervisors. However, this is not significant. We also find that there is no statistical difference in offered wages between jobs offered through direct application and those offered through village neighbors, friends, and family members. Female migrants are also offered wages 10.9 percentage points lower than male migrants. In column 3 of Table 4, we also investigate whether migrants were more likely to receive higher offered wages if the migrants have indirect contacts through brokers among the network use sample. There is no statistically significant relationship between higher offered wages and the use of brokers. To summarize, the upper of Figure 1 shows the point estimates and 95 percent confidence intervals based on Table 4.

==**Table 4** and **Figure 1** here: Explaining offered and realized wages==

5.3 Realized wages in Thailand

We now move on to realized wages. We report the relationship between migrants' use of brokers and realized monthly wages.[11] We estimate following equation:

$$(\ln \text{wage})_i = \alpha + \beta(\text{broker})_i + \gamma(\text{covariates})_i + \tau_i. \tag{5}$$

Column 3 of Table 4 shows that migrants referred by brokers are less likely to receive higher wages than those who use direct contacts with employers or referrals by other migrants. Furthermore, the coefficient of this is negative but not statistically significant. This suggests that the jobs in Thailand found using brokers do not pay higher wages to Cambodian migrants. The migrants referred by village neighbors are also less likely to receive higher wages.

Columns 4 to 6 of Table 4 show that the realized wage rates for migrants who got job information from brokers is not statistically higher than for other migrants while a migrant who used a village neighbor as an information source is more likely to face substantially lower wage rates in Thailand. Those who relied on brokers or village neighbors do not get higher hourly wage rates. Thus, we find that the migrants were less likely to receive high expected gains from immigration if the migrants have indirect contacts through brokers. Furthermore, the bottom of Figure 1 shows the point estimates and 95 percent confidence intervals based on Table 4.

To complete the discussion of the empirical results on offered and realized wages, we are first going to discuss the results of wage gaps between offered and wage of previous jobs, which is recognized as being the expected gain from migration. Then we move on to the wage gaps between realized and offered wages. We look at these wage differences for indirect contacts through brokers and other migrants. The aim of doing this is to detect which immigrants are less likely to receive promised wages in Thailand. We present the results of testing whether the realized gains from immigration through brokers are lower than those for immigrants who use indirect contacts through friends and family or direct contact to employers. According to the means of outcomes, the gaps between realized wages in Thailand and wages offered to Cambodian migrants is negative for both types of immigrants; that is, the realized wages are lower than offered wages for both indirect and direct contact. The distributions of the gap between realized and offered wages are almost the same, but the

[11] Before looking at the realized wages, we report that migrants referred by brokers have a similar probability of employment as migrants referred by employers and supervisors. Job-seekers using friends and non-referred migrants are, respectively, 3.5 and 4.3 percentage points more likely to be employed in Thailand. The data also show that the impact of job information arrivals through brokers is less substantial but still statistically significant on the probability of employment at a registered workplace. Migrants referred by village neighbors are 6.0 percentage points less likely to be employed at a registered workplace.

wages offered from indirect contacts through brokers are less likely to be equal to realized wages in Thailand (i.e., the gap is less likely to be zero). To assess the relationship between the expected gains from immigration and information sources of job offers, we estimate the following equation:

$$\left(\frac{\text{realized wages}}{\text{offered wages}}\right)_i = \alpha + \beta(\text{broker})_i + \gamma(\text{covariates})_i + u_i. \tag{6}$$

Columns 7 to 9 of Table 4 show that Cambodian immigrants who use indirect contacts through brokers do not have higher wage gains from immigration. Column 7 of Table 4 shows that immigrants who use networks have a wage gap that is 0.3 percentage points higher than immigrants who use direct contact with employers in Thailand. This result is not significant, but the wage gap is higher for immigrants who have migrated two times before and who had a higher quality of life in Cambodia. Happier or wealthier migrants from Cambodia are also less likely to have higher wage increases by moving to Thailand. Column 8 of Table 4 aims to answer the question: whose expected gains from immigration to Thailand are the highest among Cambodian immigrants? There is no evidence that migrants who use brokers received realized wages closer to offered wages compared with those who used direct application. However, immigrants who use indirect contacts through brokers do not receive promised wages more often than immigrants who have direct contact with employers in Thailand.

The final question is whether Cambodian immigrants who use indirect contacts through brokers are more likely to lose their expected gains from immigration among network searchers. Column 9 of Table 4 investigates whether realized wages in Thailand are equal to offered wages for immigrants who use indirect contacts through brokers. It shows that immigrants who use indirect contacts through brokers are less likely to receive promised wages than immigrants who have family networks, but the difference is not statistically significant. However, the ratio of actual over offered wage rates is positively correlated with indirect contacts through friends compared with family networks. The coefficient of 14.2 percentage points is statistically significant. Finally, Figure 2 also shows the point estimates and 95 percent confidence intervals based on Table 4.

5.4 Adverse workplace conditions

Finally, we study the non-wage job values of working conditions in Thailand for Cambodian migrants. There are clear results about the relation between workplace conditions and the job information sources that migrants used. We have three types of hazardous outcome for working conditions in Thailand: (1) physical environmental hazards (food and water provision, safe workplace), (2) scheduling hazards (rest, sick leave, freedom of movement, and freedom

to quit the job), (3) human hazards (violence in the workplace and treatment by the supervisor or boss). The scale for each score runs from 1 (very poor) to 5 (very good) and is evaluated by migrants themselves. In addition to these workplace hazards, we have seven indicators of quality of life. From all of these we construct a standardized score to evaluate working conditions for migrants, integrating results from several different dimensions. We then examine whether migrants are more likely to enter jobs with worse working environments if they have indirect contact through brokers. To do this, we estimate following equation:

$$(\text{workplace health and safety})_i = \alpha + \beta(\text{broker})_i + \gamma(\text{covariates})_i + \tau_i. \tag{7}$$

Columns 1 to 3 of Table 5 present the results of the standardized score of workplace hazards in Thailand which is constructed from physical environmental, scheduling, and human hazards. Column 1 shows that the measure of workplace hazards is not related to network use, whereas columns 2 to 3 show that subjective measures of work place hazards are related to the use of brokers. The migrants referred by brokers evaluated their working conditions as more hazardous by 39.8 σ compared with migrants who searched for the job by themselves. Among immigrants who used a network search, column 3 shows that migrants referred by brokers are less likely to have a safer workplace. Migrants referred by brokers evaluated their working conditions as more hazardous by 49.8 σ compared with immigrants who use family networks.

Columns 4 to 6 explain the relationship between the use of indirect contacts through brokers and adverse working conditions by looking at a standardized hazard score of quality of life. Column 4 shows that the measure of quality of life hazards is related to network use. Cambodian migrants who use a network to find a job are 12.7 σ more likely to evaluate their workplace as risky compared with migrants who find a job by themselves. Column 5 of Table 5 shows that migrants referred by brokers are 42.2 σ more likely to evaluate their workplace as risky. Finally, the quality of life hazard is also worse for migrants referred by brokers among those who used a network search; they evaluated their workplaces 48.1 σ more risky compared with migrants referred by family (column 6). To summarize, Figure 3 shows the point estimates and 95 percent confidence intervals based on Table 5.

Overall, we can derive following message from the results of the standardized working environment score (z-score). Cambodian migrants who got job information from brokers evaluated their working environments in Thailand as risky. According to the empirical results, the immigrants referred by brokers are less likely to have good working conditions than the immigrants who use family networks. The reason for this is that the indirect contacts through brokers are more concentrated in the tail of the distribution of standardized workplace conditions. In sum, the results of occupational health and safety in the workplace in Thailand imply

that the referred immigrants are more likely to experience adverse workplace conditions than immigrants who use direct contact with employers.[12]

==**Table 5** here: Explaining adverse working conditions==

6 Choice of search methods

Finally, this section examines how the information sources of job offers could vary with observable characteristics of Cambodian immigrants when they were in Cambodia. The choice of search method is directly related to arrivals of job offers. We estimate following equation:

$$(\text{indirect or direct contact})_i = \alpha + \gamma(\text{covariates})_i + \epsilon_i, \tag{8}$$

where $(\text{indirect or direct contact})_i$ signifies the exact information source of job offers that Cambodian immigrant i used to get a job in Thailand, $(\text{covariates})_i$ represents the individual observable pre-migration characteristics, and ϵ is the error term. Table 6 shows the determinants of use of indirect and direct contact with employers in Thailand for Cambodian immigrants. The first four columns give the empirical results on indirect contacts through brokers, village neighbors, friends, and family networks. The last two columns give the results on direct contacts with employers in Thailand. The explanatory variables of Table 6 are individual subjective measures of quality of life in Cambodia on a five-level scale (1: very poor; 3: neutral; 5: very rich), migration experiences, gender, age, years of education, previous occupation in Cambodia before immigration to Thailand, and original province in Cambodia to evaluate the role of distance from border.

Columns 1 to 4 of Table 6 show that indirect contacts through brokers, village neighbors, friends, and family networks are not strongly correlated to any individual characteristic except gender. Observable characteristics, like previous migration experiences, age, years of

[12]In addition to these baseline results, we estimate the results of other measures of quality of life in Thailand. There are no strongly significant relationships between the likelihood of entering unpaid work in Thailand and the information sources of jobs. Immigrants who use indirect contacts through brokers are less likely to feel they have the freedom to quit. We also estimate the standardized score of quality of life in Thailand by using the information about the dummy variables of being cheated by the employers, of trying to escape from employers, of being deported, and of being arrested in Thailand. The standardized score of quality of life in Thailand is negatively correlated with indirect contacts through brokers and village neighbors. Immigrants who use indirect contacts though brokers are more likely to be cheated by their employers and are more likely to try to escape from the workplace compared with immigrants who use direct contact with employers. We find that neither being arrested by police nor deportation from Thailand are related to the use of brokers. Finally, we also find that migrants referred by brokers were 26.5 percentage points more likely to be classified as victims of human trafficking of cross-border migration by Cambodian border-control officers when being deported from Thailand and returning to Cambodia.

education, and previous job, and distance from border between Cambodia and Thailand do not strongly explain the use of indirect contacts. Females and males have different patterns of using indirect contacts to find a job in Thailand. Females are less likely to use brokers and friends to get a job and are more likely to use village neighbors and family networks. Columns 5 and 6 of Table 6 show that Cambodian immigrants who have a higher score of quality of life are more likely to find a job in Thailand by themselves. Younger immigrants are also more likely to find a job by themselves. Females are more likely to find a job by themselves, but they are less likely to get job information from employers in Thailand. There is no strong correlation between the use of direct contacts with employers in Thailand and individual capability (i.e., previous migration experiences and years of education), difference in expertise (i.e., previous job), or regional differences (i.e., original provinces in Cambodia). Thus, the arrival of job information from indirect and direct contacts is not related to migration experiences, years of education, occupation, and distance from borders.

In summary, we can conclude that individual and observable pre-migration characteristics in Cambodia are not strongly correlated with the arrival of job information through indirect and direct contacts. Although unobservable selection could be present in the information sources, this paper is going to treat indirect and direct contacts to employers in Thailand as non-endogenous variables that are unrelated to individual observable characteristics of immigrants in the following empirical sections .

==**Table 6** here: Explaining choice of search methods==

7 Discussion and conclusion

Social networks and brokers help migrants and employers to find jobs and to fill vacancies. These two intermediaries seem to play a similar role in cross-border migrations. However, although the labor market intermediaries provide similar services, the consequences of job search strategies and acceptance decisions lead to quite different non-wage job values. In short, the probability of entering adverse working conditions varies across search methods even though wages are similar. We showed evidence that Cambodian migrants who were referred by brokers are less likely to enter workplaces in Thailand that are better-managed with regard to physical, scheduling, and human hazards. In addition to these findings, less experienced migrants are less likely to have better working conditions than experienced migrants, although past migration experiences do not directly relate to the choice of social networks and brokers.

The overall finding of this paper suggests that wages are foreseen for both migrant job-seekers and intermediaries, but non-wage job values are unforeseen, especially for migrants. It is important to study the role of non-wage job values because adverse working conditions play a role in acceptance decisions if wages are the same as for a job with better working conditions.

The natural question is why Cambodian migrant workers referred by brokers are less likely to have good non-wage job values in Thailand. There are two possible explanations. First, if the migrants referred by brokers had lower reservation wages, then they were less likely to have good jobs in their destinations. Even though we control observable characteristics of migrants, the unobserved characteristics may vary across migrants. These unobserved factors (e.g., abilities) may determine both reservation wages and job search networks. Second, if worse employers in the destination country were more likely to utilize brokers compared to better employers, then referred migrants would be more likely to enter into the worse jobs. These two explanations lead to a striking implication for public policies towards employers in destinations that demand migrant workers and towards job-seekers who have poor social networks. If employers invest in better working conditions, then they move from the use of brokers to employee referrals. If job-seekers invest in social capital through educational investment, then they also move from the use of brokers to social networks. These investments can determine the transitions from brokers to social networks for labor demand and supply sides.

The remaining questions are as follows: (1) why brokers introducing badly-managed workplace exist and can survive, (2) which migrants mainly need brokers to get across border between two countries, (3) which employers mainly hire brokers to collect employees from foreign countries, and (4) whether worse non-wage characteristics are compensated by higher wages by looking at the relationship between standardized score of workplace conditions and realized wages in Thailand. It is worth looking at this compensation question for the immigrants who use indirect contacts through brokers and for the immigrants who use direct contacts with employers. If badly managed workplaces are compensated by higher wages, the workplaces are segmented by good jobs which pay lower wages but have better non-wage workplace conditions and bad jobs which pay higher wages but have poor non-wage workplace conditions.

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Table 1: Summary statistics of outcome variables

Variable	Obs	Mean	SD
Wages values			
Ln of wage of previous job per month (THB)	479	7.613	1.017
Ln of offered monthly wages	739	8.792	0.523
Ln of realized wage per month (THB)	756	8.147	1.011
Ln of wage rates (THB)	756	2.726	1.056
Offered over previous monthly wages	479	5.221	11.423
Realized over offered monthly wages	739	0.760	0.769
Realized over previous monthly wages	479	4.875	9.257
Non-wage job values			
Rate of food/water (Very poor:1; Very good 5)	797	3.301	0.710
Rate of workplace safety (Very poor:1; Very good 5)	797	3.256	1.066
Rate of sick leave (Very poor:1; Very good 5)	797	2.827	1.288
Rate of freedom (Very poor:1; Very good 5)	797	2.979	0.723
Rate of violence at the workplace (Very poor:1; Very good 5)	797	3.269	0.716
Rate of boss (Very poor:1; Very good 5)	797	3.167	0.864
Standardized workplace score (Mean: 0; Std: 1)	797	-0.025	0.917
Unpaid work (dummy)	797	0.051	0.221
Freedom of quit (dummy)	797	0.870	0.337
Cheated (dummy)	797	0.205	0.404
Escaped from workplace (dummy)	797	0.072	0.258
Police arrests me (dummy)	797	0.236	0.425
Deported from Thailand (dummy)	797	0.481	0.500
Evaluated as a victim of trafficking(dummy)	797	0.258	0.438

Source: UNIAP 2012 Sentinel Surveillance for Cambodian workers deported from Thailand. Poipet, Cambodia.

Table 2: Means of labor market outcomes in Thailand by job information channels

	All (N=797)	Myself (N=83)	Brokers (N=142)	Neighbors (N=80)	Friends (N=174)	Family (N=164)	Employers (N=154)
Wage values							
Ln of wage of previous job per month (THB)	7.613	7.579	7.555	7.350	7.661	7.648	7.793
Ln of offered monthly wages	8.792	8.667	8.791	8.743	8.786	8.851	8.824
Ln of realized wage per month (THB)	8.147	8.422	8.197	7.960	8.393	7.892	8.020
Ln of wage rates (THB)	2.726	3.010	2.760	2.472	2.966	2.506	2.610
Offered over previous monthly wages	5.221	3.695	6.635	8.339	5.458	2.924	4.750
Realized over offered monthly wages	0.760	0.953	0.751	0.642	0.922	0.632	0.686
Realized over previous monthly wages	4.875	4.498	5.709	6.534	4.998	3.845	3.855
Non-wage job values							
Rate of food/water (Very poor:1; Very good 5)	3.301	3.398	3.155	3.313	3.270	3.439	3.266
Rate of workplace safety	3.256	3.217	2.958	3.188	3.121	3.433	3.552
Rate of sick leave	2.827	3.265	2.704	2.988	2.856	2.713	2.708
Rate of freedom	2.979	3.169	2.852	2.988	3.034	2.939	2.968
Rate of violence at the workplace	3.269	3.313	3.176	3.200	3.155	3.506	3.240
Rate of boss (Very poor:1; Very good 5)	3.167	3.120	2.951	3.113	3.109	3.384	3.253
Standardized workplace score (Mean: 0; Std: 1)	-0.025	0.191	-0.334	-0.035	-0.093	0.156	0.031
Unpaid work (dummy)	0.051	0.000	0.049	0.088	0.023	0.055	0.091
Freedom of quit (dummy)	0.870	0.940	0.746	0.850	0.891	0.927	0.870
Cheated (dummy)	0.205	0.120	0.387	0.238	0.247	0.091	0.136
Escaped from workplace (dummy)	0.072	0.024	0.162	0.063	0.092	0.018	0.052
Police arrests me (dummy)	0.236	0.470	0.331	0.188	0.241	0.146	0.136
Deported from Thailand (dummy)	0.481	0.566	0.500	0.463	0.506	0.470	0.409
Evaluated as a victim (dummy)	0.258	0.145	0.437	0.238	0.299	0.146	0.240

Source: UNIAP 2012 Sentinel Surveillance for Cambodian workers deported from Thailand. Poipet, Cambodia.

Table 3: Summary statistics of explanatory and control variables

	N	Mean	Std. Dev
Arrival of job information: Direct application			
Job search by myself	797	0.104	0.306
Employers at previous workplace	797	0.193	0.395
Arrival of job information: Network use			
Brokers	797	0.178	0.383
Village neighbors	797	0.100	0.301
Friends	797	0.218	0.413
Family	797	0.206	0.405
Other controls			
Female	797	0.238	0.426
Age	797	24.992	6.734
Years of education	797	3.090	3.119
Knew migrants before moving (dummy)	797	0.778	0.416
Previous QOL (Very poor:1; Very good 5)	797	2.413	0.659
Previous migration experiences			
Never been to Thailand	797	0.683	0.466
One time before to Thailand	797	0.178	0.383
Two times before to Thailand	797	0.099	0.299
Three or more times before to Thailand	797	0.040	0.196
Previous jobs			
Never worked	797	0.070	0.256
Agriculture	797	0.627	0.484
Construction	797	0.074	0.262
Fishing vessels	797	0.014	0.117
Services	797	0.023	0.149
Factories	797	0.024	0.153
Other sectors	797	0.168	0.374
Location (States)			
Banteay Meanchey including Poipet	797	0.325	0.469
Near from Poipet	797	0.191	0.393
Near from Siem Reap	797	0.290	0.454
Near from Phnom Penh	797	0.194	0.396

Source: UNIAP 2012 Sentinel Surveillance for Cambodian workers deported from Thailand. Poipet, Cambodia.

Table 4: Explaining the offered and realized wage levels

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent	Offered wages			Realized wages			Realized/Offered wages		
Sample	Whole		Network only	Whole		Network only	Whole		Network only
Reference group	Direct application		Family	Direct application		Family	Direct application		Family
Network use	0.042			0.011			0.003		
	(0.036)			(0.075)			(0.063)		
Family		0.064			-0.114			-0.047	
		(0.053)			(0.112)			(0.084)	
Friends		0.019	-0.062		0.210**	0.339***		0.142	0.213*
		(0.056)	(0.071)		(0.086)	(0.115)		(0.097)	(0.110)
Village neighbors		-0.017	-0.099		-0.168	-0.028		-0.071	0.001
		(0.059)	(0.069)		(0.138)	(0.154)		(0.075)	(0.078)
Brokers		0.076	-0.002		-0.002	0.125		-0.064	0.001
		(0.057)	(0.073)		(0.096)	(0.121)		(0.072)	(0.093)
Migration experience									
2nd time	0.020	0.019	0.034	0.017	0.013	0.038	0.047**	0.045**	0.042*
	(0.021)	(0.021)	(0.026)	(0.042)	(0.041)	(0.048)	(0.021)	(0.021)	(0.025)
3rd or more time	0.186***	0.188***	0.181**	-0.373***	-0.372***	-0.333**	-0.212***	-0.218***	-0.203***
	(0.057)	(0.059)	(0.079)	(0.129)	(0.128)	(0.153)	(0.056)	(0.057)	(0.065)
Length in Thailand	-0.072	-0.075	-0.084	0.331***	0.332***	0.322***	0.191**	0.191**	0.175
	(0.052)	(0.053)	(0.060)	(0.059)	(0.060)	(0.078)	(0.089)	(0.089)	(0.111)
Female	-0.110**	-0.109**	-0.092	-0.222**	-0.175**	-0.138	-0.089	-0.067	-0.093
	(0.053)	(0.055)	(0.065)	(0.086)	(0.087)	(0.105)	(0.063)	(0.062)	(0.069)
Age	0.004	0.004	0.005	0.001	0.001	-0.002	-0.003	-0.003	-0.005
	(0.003)	(0.003)	(0.004)	(0.005)	(0.005)	(0.006)	(0.003)	(0.003)	(0.004)
Years of education	0.025***	0.024***	0.018**	-0.055***	-0.050***	-0.047***	-0.046***	-0.044***	-0.038***
	(0.007)	(0.007)	(0.008)	(0.013)	(0.013)	(0.016)	(0.009)	(0.010)	(0.011)
Knew migrants	0.088*	0.095*	0.159**	-0.066	-0.069	-0.036	-0.081	-0.089	-0.148
	(0.048)	(0.049)	(0.065)	(0.082)	(0.080)	(0.102)	(0.073)	(0.072)	(0.090)
Previous QOL	0.009	0.008	-0.016	0.062	0.067	0.147**	0.096*	0.101*	0.099*
	(0.032)	(0.033)	(0.034)	(0.057)	(0.056)	(0.070)	(0.054)	(0.055)	(0.053)
N	728	728	513	745	745	525	728	728	513
R2	0.097	0.100	0.094	0.147	0.161	0.182	0.115	0.125	0.127

Notes: Other controls are previous job in Cambodia, the last jobs in Thailand, and original locations in Cambodia. The robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.
Source: UNIAP 2012 Sentinel Surveillance for Cambodian workers deported from Thailand. Poipet, Cambodia.

Table 5: Explaining the workplace and quality of life hazards

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent	Workplace hazards			QOL hazards		
Sample	Whole		Network only	Whole		Network only
Reference group	Direct application		Family	Direct application		Family
Network use	0.107			0.127**		
	(0.074)			(0.058)		
Family		-0.088			-0.062	
		(0.088)			(0.062)	
Friends		0.067	0.153		0.078	0.142**
		(0.096)	(0.100)		(0.074)	(0.071)
Village neighbors		0.085	0.150		0.102	0.170*
		(0.123)	(0.125)		(0.098)	(0.092)
Brokers		0.398***	0.498***		0.422***	0.481***
		(0.113)	(0.114)		(0.094)	(0.094)
Migration experience						
2nd time	-0.044	-0.043	-0.026	-0.091***	-0.090***	-0.060
	(0.038)	(0.037)	(0.047)	(0.034)	(0.033)	(0.038)
3rd or more time	0.153	0.194*	0.241**	-0.195***	-0.153**	-0.096
	(0.103)	(0.101)	(0.121)	(0.063)	(0.062)	(0.079)
Length in Thailand	-0.226***	-0.230***	-0.296***	0.002	-0.002	0.032
	(0.084)	(0.085)	(0.109)	(0.079)	(0.078)	(0.102)
Female	-0.110	-0.079	-0.089	-0.024	0.005	0.042
	(0.080)	(0.080)	(0.100)	(0.062)	(0.063)	(0.075)
Age	-0.007	-0.007	-0.006	0.004	0.003	0.003
	(0.005)	(0.005)	(0.006)	(0.004)	(0.004)	(0.005)
Years of education	0.041***	0.046***	0.050***	-0.009	-0.004	-0.010
	(0.012)	(0.011)	(0.013)	(0.009)	(0.009)	(0.010)
Knew migrants	0.098	0.098	0.109	0.182***	0.183***	0.168**
	(0.068)	(0.070)	(0.090)	(0.056)	(0.055)	(0.075)
Previous QOL	-0.261***	-0.257***	-0.325***	-0.133***	-0.129***	-0.116**
	(0.061)	(0.060)	(0.078)	(0.042)	(0.041)	(0.050)
N	786	786	552	786	786	552
R2	0.135	0.157	0.186	0.134	0.171	0.182

Notes: Other controls are previous job in Cambodia, the last jobs in Thailand, and original locations in Cambodia. The robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.
Source: UNIAP 2012 Sentinel Surveillance for Cambodian workers deported from Thailand. Poipet, Cambodia.

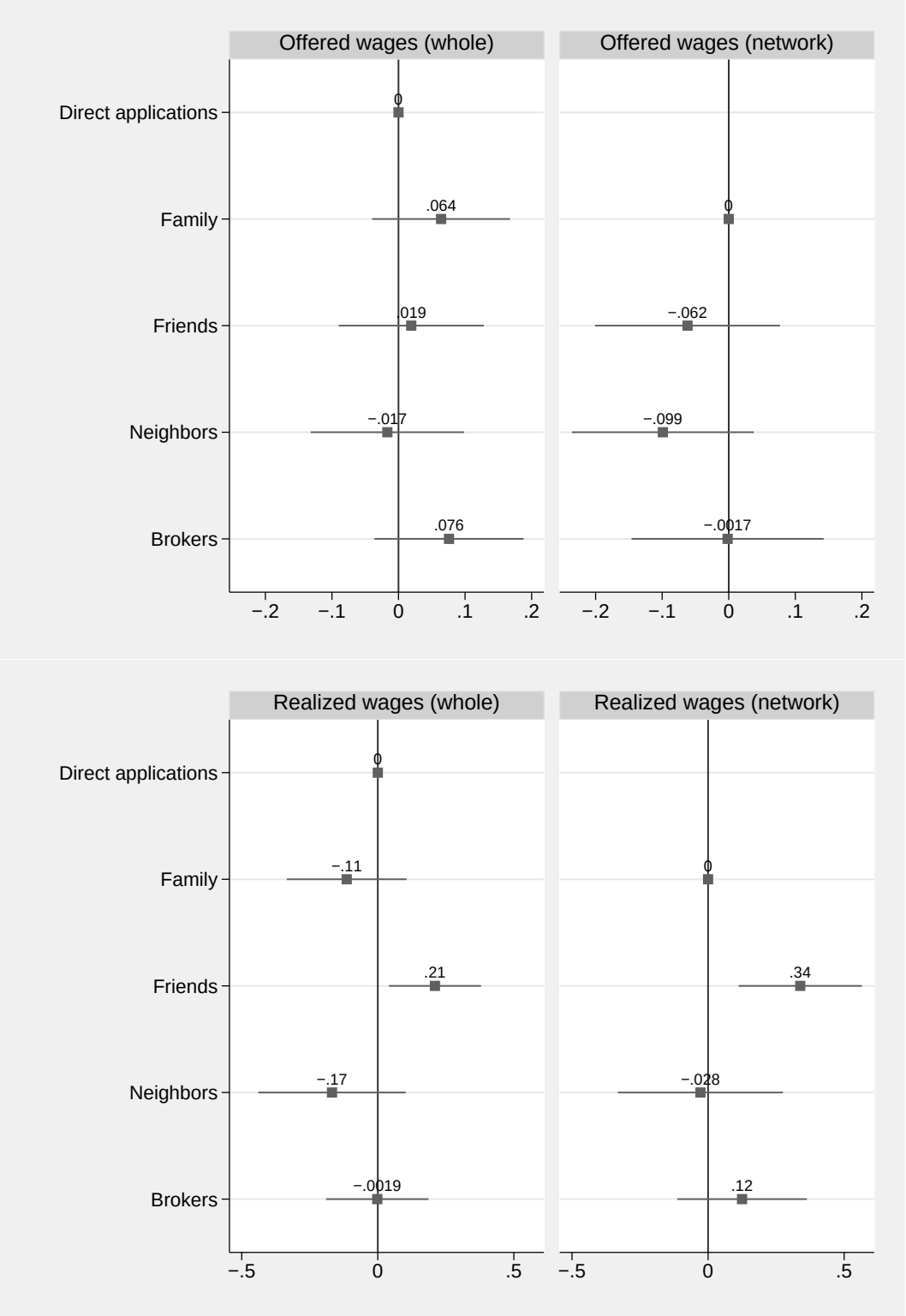
Table 6: Explaining the choice of search methods

Multinomial Logit	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sample	Whole				Network only		
Reference group	Base: Direct application				Base: Family network		
Choices	Family	Friends	Neighbors	Brokers	Friends	Neighbors	Brokers
Migration experiences							
2nd time	-0.174	0.049	-1.296	-0.877	0.098	-1.554	-0.647
	(0.553)	(0.482)	(1.040)	(0.836)	(0.618)	(1.023)	(0.890)
3rd or more time	0.052	-0.596	-1.135**	-0.511	-0.525	-1.086*	-0.513
	(0.417)	(0.366)	(0.494)	(0.364)	(0.457)	(0.579)	(0.457)
Knew migrants before moving	0.168	0.795**	1.826***	0.196	0.603	1.695**	0.031
	(0.380)	(0.347)	(0.674)	(0.346)	(0.441)	(0.753)	(0.441)
Distance to border	-0.015	0.060	0.215	0.032	0.063	0.186	0.003
	(0.198)	(0.151)	(0.204)	(0.170)	(0.208)	(0.252)	(0.219)
Previous monthly salary	0.101	-0.035	-0.188	0.020	-0.125	-0.278	-0.073
	(0.188)	(0.172)	(0.199)	(0.183)	(0.212)	(0.233)	(0.220)
Own residential land	0.322	-0.910**	-1.608***	-1.098***	-1.273**	-1.963***	-1.428***
	(0.492)	(0.392)	(0.434)	(0.423)	(0.554)	(0.583)	(0.554)
Own agricultural land	-0.069	0.271	0.573	-0.597	0.492	0.819	-0.392
	(0.411)	(0.345)	(0.416)	(0.419)	(0.482)	(0.511)	(0.514)
Female	0.532	-0.159	0.772*	0.097	-0.627	0.351	-0.279
	(0.391)	(0.359)	(0.436)	(0.394)	(0.416)	(0.481)	(0.434)
Age	-0.015	0.019	0.046*	0.021	0.034	0.062**	0.033
	(0.026)	(0.021)	(0.025)	(0.023)	(0.027)	(0.031)	(0.028)
Education	0.143**	-0.026	-0.056	-0.075	-0.156**	-0.180*	-0.188**
	(0.065)	(0.062)	(0.096)	(0.084)	(0.074)	(0.105)	(0.086)
Previous QOL	-0.473*	-0.231	-0.314	-0.140	0.134	0.085	0.229
	(0.262)	(0.240)	(0.297)	(0.274)	(0.280)	(0.332)	(0.304)
Previous job in Cambodia							
Never worked	-0.260	0.481	0.345	-0.040	0.766	0.583	0.240
	(0.549)	(0.451)	(0.619)	(0.516)	(0.565)	(0.698)	(0.609)
Construction	0.198	-14.243***	0.240	-0.557	-14.131***	-0.058	-0.922
	(0.978)	(0.658)	(1.199)	(1.198)	(0.720)	(1.325)	(1.084)
Fishing vessels	-0.594	0.533	-0.002	-0.325	1.368	1.043	0.402
	(0.931)	(0.701)	(1.210)	(0.913)	(1.107)	(1.436)	(1.224)
Services	-2.118	-0.083	0.068	-14.118***	2.116	2.499	-11.184***
	(1.318)	(0.648)	(0.885)	(0.560)	(1.462)	(1.658)	(1.579)
Factories	-0.451	-0.239	-0.506	-0.255	0.260	0.038	0.213
	(0.428)	(0.398)	(0.546)	(0.417)	(0.490)	(0.597)	(0.501)
Other	-0.425	-0.091	-1.829	0.104	0.438	-1.331	0.836
	(1.954)	(1.576)	(2.196)	(1.691)	(2.010)	(2.496)	(2.111)
N	436	436	436	436	303	303	303

Notes: The reference for previous jobs in Cambodia is agriculture. Other controls are original locations in Cambodia. The robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

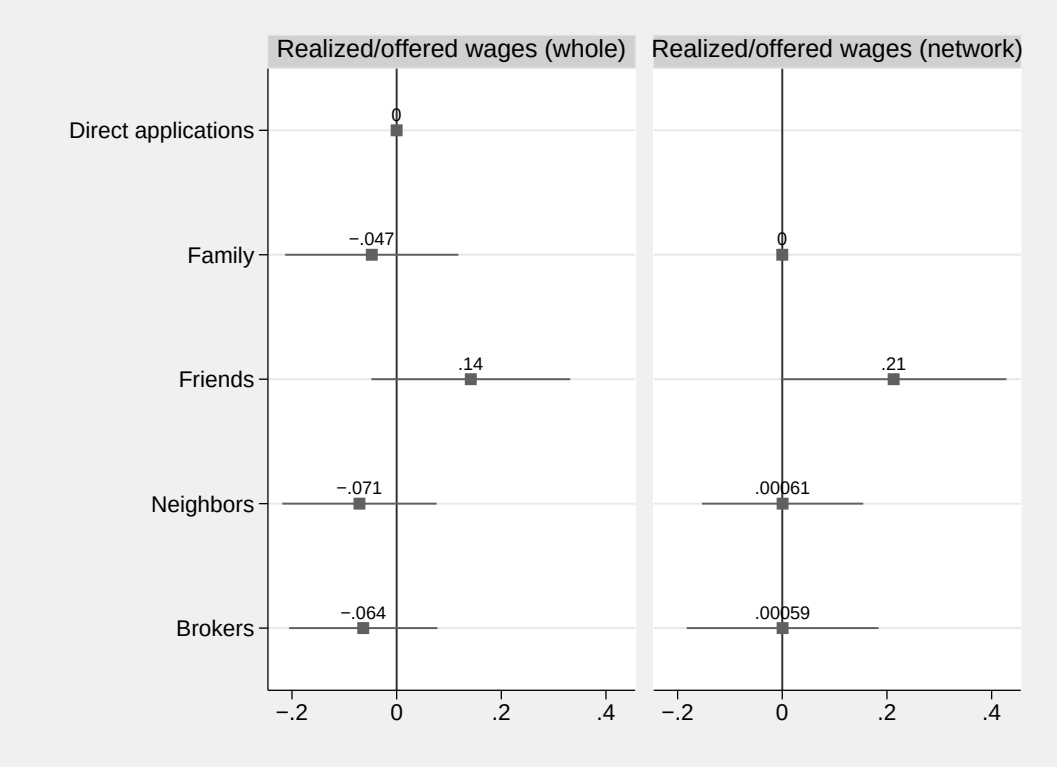
Source: UNIAP 2012 Sentinel Surveillance for Cambodian workers deported from Thailand. Poipet, Cambodia.

Figure 1: Effects on offered and realized wages



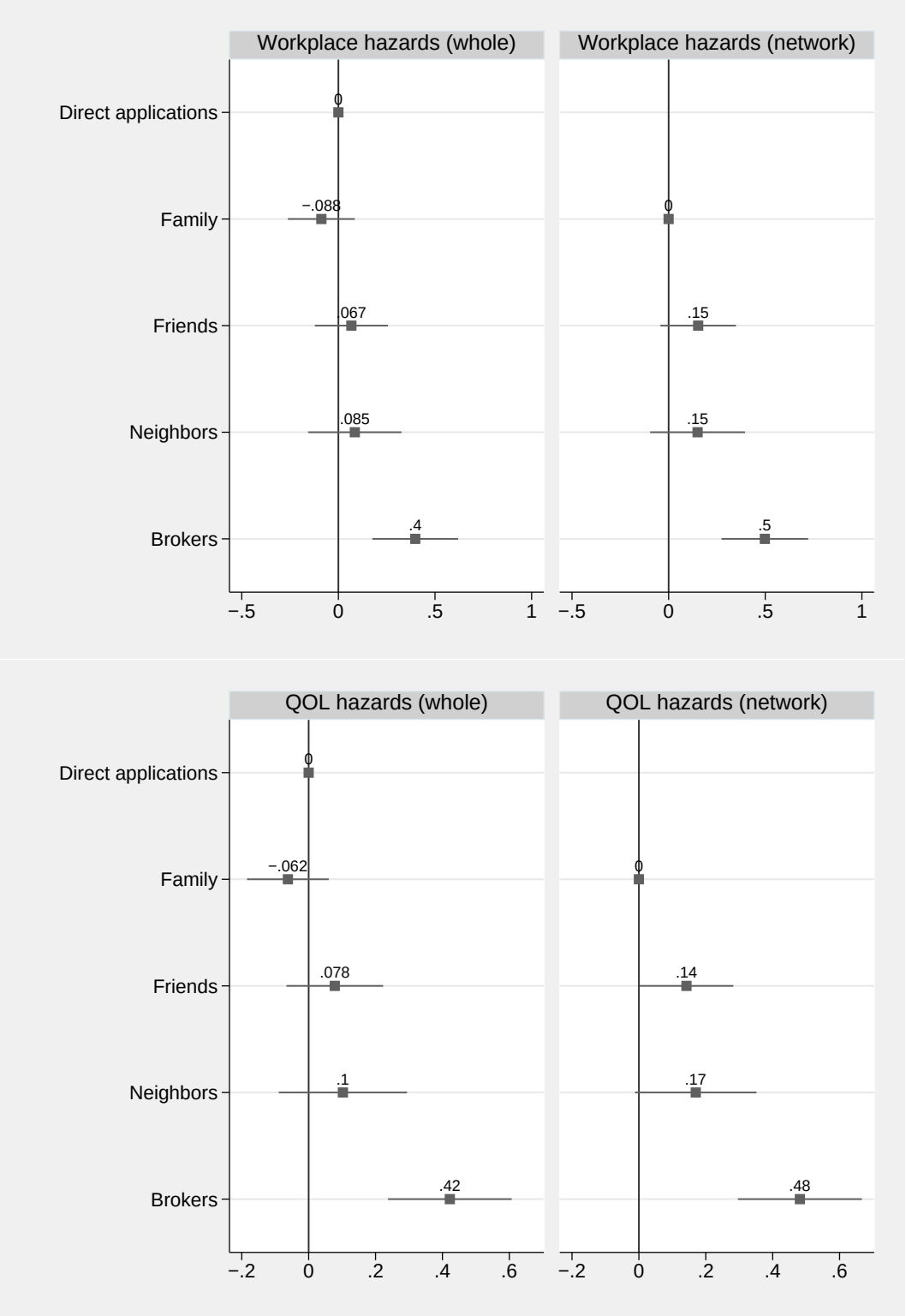
Notes: Point estimates and 95 percent confidence intervals shown in the figure based on the columns (2), (3), (5), and (6) of Table 4. The reference for explanatory variables for whole sample is direct applications. The reference for explanatory variables for network use sample is family.

Figure 2: Effects on ratio of realized/offered wages



Notes: Point estimates and 95 percent confidence intervals shown in the figure based on the columns (8) and (9) of Table 4. The reference for explanatory variables for whole sample is direct applications. The reference for explanatory variables for network use sample is family.

Figure 3: Effects on workplace and QOL hazards



Notes: Point estimates and 95 percent confidence intervals shown in the figure based on the columns (2), (3), (5), and (6) of Table 5. The reference for explanatory variables for whole sample is direct applications. The reference for explanatory variables for network use sample is family.