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Article

Get Rich or Die Tryin': Perceived Earnings, Perceived Mortality Rates, and Migration Decisions of Potential Work Migrants from Nepal

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Abstract

This article reports on a randomized field experiment in which potential work migrants from Nepal to Malaysia and the Persian Gulf countries are provided with information on wages and mortality incidences at their intended destinations. It is found that, particularly for the group of potential migrants without prior foreign migration experience, the information changes their expectations of earnings and mortality risks abroad, which further changes their actual migration decisions. Using the exogenous variation in expectations, it is estimated that the elasticity of migration with respect to mortality rate expectation is 0.8, and the elasticity of migration with respect to earnings expectation is 1.1.

JEL classification: F22, J61, J17, D84, O12

Keywords: migration, expectations, Nepal

1. Introduction

The number of people moving across international borders for work is increasing. By 2013, international migrants accounted for over 12 percent of the total population in the global north, over six times the share in 1990 (UNDESA 2015). A 2011 Gallup poll estimated that more than one billion people wished to migrate abroad for temporary work (Esipova, Ray, and Publiese 2011). Anecdotes and media reports abound on the risks that these migrants are undertaking in search of a better life for themselves or their families. For example, in 2018 alone, about 2,300 migrants died in the Mediterranean Sea on their way to Europe, and 442 died while trying to cross the border between Mexico and the United States (International Organization for Migration 2019). A high death toll is not the plight only of those who try to migrate

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illegally or who are forced to move. *The Guardian* reported that almost a thousand workers, all of whom were legal migrants from Nepal, India, and Bangladesh, died in Qatar in 2012 and 2013 (Gibson 2014).

The intense desire to migrate despite the risks has led policymakers to be concerned that potential migrants may have unrealistic expectations about migration. In countries such as Nepal, where more than 7 percent of adult working-age males leave the country to work abroad in a given year, there is great concern that they make the decision to migrate recklessly.[1]

Policymakers and academics often have contradictory views on whether the level of observed migration is higher or lower than optimal. Policymakers believe that most potential migrants are misinformed—in particular, that they expect to earn more than they actually do upon migration and that they underestimate the risks of working abroad. Many policymakers also believe that potential migrants, knowingly or unknowingly, are trading off risks at unreasonably low prices to the extent that their experience is often termed exploitative.[2] Put together, these views suggest that the observed rate of migration is higher than optimal and that accurate information would lower the migration level.

Academic studies, on the other hand, have found migration to be profitable and hugely beneficial for the marginal migrant and his or her family (e.g., Bryan, Chowdhury, and Mobarak 2014; McKenzie, Stillman, and Gibson 2010). These studies suggest that the level of migration is suboptimal and that increased migration would have a welfare-improving effect. If anything, potential migrants' beliefs about earnings and risks are pessimistic, which suppresses migration (as briefly suggested in Bryan, Chowdhury, and Mobarak [2014]). Other studies, which assume that individuals are fully informed and have rational expectations about the conditions at their destinations, attribute low levels of migration to high costs, monetary and otherwise (see Kennan and Walker [2011], Morten [2019], and Shenoy [2016], for example). These authors argue that the costs, most of which are fixed, keep migration suboptimally low and give rise to a large spatial disparity in earnings.

This article investigates whether misinformation causes suboptimal levels of migration in the context of the migration of Nepali workers to Malaysia and the Persian Gulf countries. Given the concerns on the part of policymakers, the focus is on how potential migrants' beliefs about earnings and the mortality rate abroad affect migration.

The data collected for this study show that potential migrants are indeed misinformed about potential earnings and mortality risk, but not always in a way that policymakers expect. Consistent with the widely held notions described above, inexperienced potential migrants—those who have never before migrated abroad for work—overestimate their earning potential. Compared with experienced migrants—those who are better informed due to having previously migrated abroad for work—the inexperienced ones expect to earn 26 percent more. This article argues that this estimate is a lower bound on the extent of misinformation, as the pool of experienced migrants in the study sample is likely to be positively selected from the actual earnings distribution. However, contrary to popular belief, potential migrants also overestimate their mortality risk abroad. The median inexperienced potential migrant expects the mortality rate to be 8 times the actual mortality rate they face, and the median experienced potential migrant expects the mortality rate to be over 4 times the actual average rate. Misinformation at the mean is even greater, at 13 and 21 times the actual rate for the experienced and inexperienced potential migrants, respectively.

This two-sided misinformation implies that migration decisions are being made inefficiently and that potential migrants would make different choices if they had accurate information. Whether these

1 An extreme example of the opinion of many policymakers is the following quote from an expert on Nepali migration (Pattisson 2013a): "They go without asking questions. They are not ready to listen. They just want to go. They never even bother to ask how much they will earn." Although this statement may be an exaggeration, the view that potential migrants lack information or are misinformed is widely held.

2 The phenomenon of migrants working at high-risk jobs for low wages has been dubbed a form of modern-day slavery. Several newspaper articles and commissioned research reports express this view; see Deen (2013) and The Asia Foundation (2013), among many others.

inefficiencies cause the aggregate migration level to be too high or too low depends on two factors: the elasticity of migration with respect to expected earnings abroad and the elasticity of migration with respect to expected mortality rate abroad.

To estimate these elasticities, a randomized controlled trial was conducted, in which information was provided to potential migrants and the changes in expectations and subsequent migration decisions were observed. Information on earnings and/or mortality incidences of Nepali workers in their destination country of choice was randomly provided to 3,319 potential migrants who came to Kathmandu to apply for a passport in January 2015. The earnings information treatments provided information on the average contractual wages reported to the official authority of Nepal by two cohorts of migrants. The mortality incidence information treatments consisted of death tolls among Nepali migrants from some predetermined districts in Nepal. To avoid deception, individuals were given information from different districts with high and low numbers of deaths. Death information was cross-randomized with wage information.

The informational interventions changed the earnings and mortality rate expectations of potential migrants, particularly of the inexperienced ones, who were more likely to be misinformed. To measure the effect of information on expectations, the potential migrants' beliefs about earnings upon migration and about the mortality risk to be faced while abroad were elicited. The information treatment on deaths, particularly the "low" variant, lowered the migrants' expected mortality rate by 20 percent relative to the expectation of those who did not receive any information (control group). The effect was driven by the inexperienced potential migrants, for whom the "low" death information lowered the expected mortality rate by 26 percent relative to the control group. Information on earnings also lowered earnings expectations for the inexperienced potential migrants: compared to the control group, those who received earnings information expected to earn 6 to 9 percent less. However, for the experienced group, providing wage information had no effect. This is not surprising, as the experienced migrants already had more accurate information about their earning potential abroad.

Moreover, these changes in expectations led to changes in migration decisions for the inexperienced potential migrants. Three months after the interventions, the inexperienced potential migrants provided with "low" death information were 7 percentage points more likely to have migrated, and those provided with wage information were 5 to 6 percentage points less likely to have migrated. The effects equate to about 30 percent of the migration rates observed in the group that did not receive any information. This finding has the clear policy implication that a simple and well-targeted information intervention can change the perceptions as well as the actual migration decisions of potential migrants.

Using the experimental setup, a linear probability model of the migration decisions of inexperienced potential migrants was estimated, with randomized information assignments as instruments for mortality risks and earnings from migration.[3] Under the assumption of exclusion, i.e., that the information treatments did not change unobserved amenities associated with migration, the elasticity of migration with respect to expected mortality rate is estimated at 0.8, and the elasticity of migration with respect to expected earnings is estimated at 1.1. The latter estimate is, however, statistically insignificant at conventional levels because of the weak impact of the "low" wage information treatment. These coefficients imply, albeit imprecisely, a trade-off between mortality and earnings—value of statistical life (VSL)—of US$0.30 million.

This suggests that, given the level of information that potential migrants have, the trade-off they are willing to make does not appear to be unreasonably low. That is, the estimated VSL is within the range of estimates for developing countries. Furthermore, the estimated earnings and mortality elasticities of migration suggest that misinformation along these two dimensions has indeed lowered migration overall.

3 Since the information treatments did not change the expectations of the experienced potential migrants, the focus of this exercise will be on the inexperienced potential migrants.

This result is driven by the fact that misinformation on mortality rate dwarfs misinformation on earnings, whereas the migration responses to changes in these expectations are roughly the same.

Apart from providing an important insight into how beliefs can affect migration, this article offers, in principle, a novel approach to estimating the VSL from revealed preferences. Use of randomized information treatments could potentially solve the omitted variable and endogeneity concerns plaguing the literature on empirical estimates of the VSL (see Ashenfelter [2006] and Ashenfelter and Greenstone [2004] for critiques).[4] Unfortunately, because of the weak effect of wage information treatments in this context, the resulting estimate of the VSL spans a wide confidence interval and is not statistically significant.

This article also contributes to the relatively scant body of research seeking to quantify the extent of misinformation on earnings in the context of international migration. McKenzie, Gibson, and Stillman (2013) and Seshan and Zubrickas (2017), in the context of international migration, and Baseler (2019), in the context of domestic migration, found that individuals who do not migrate, as well as their family members, have different expectations about migrant earnings. However, in contrast to the present work, these studies found that potential migrants and their family members underestimate the potential earnings from migration. The difference could have arisen from the prevalence of recruiting agents who have an incentive to inflate migrant earnings in this context. To the best of the author's knowledge, there are no other rigorous studies that quantify the extent of misinformation on migrant mortality rates and how such misinformation affects migration decisions.

This study also adds to the literature on the effectiveness of providing information in terms of influencing migration or improving outcomes for migrants. Most studies find no effect of information on inducing migration (see Bryan, Chowdhury, and Mobarak [2014], Beam [2016], and Beam, McKenzie, and Yang [2016] for a few examples). However, similar to this study, Baseler (2019) found a positive impact of earnings information on migration in the context of rural-to-urban migration in Kenya. This suggests that the impact of information can depend on the nature of the information as well as the context.

This article builds upon and adapts to the current context existing research on eliciting probabilistic expectations in developing countries. Many studies have adapted the elicitation methodology developed in Manski (2004) and Dominitz and Manski (1997) to diverse contexts in developing countries; see Attanasio (2009) and Delavande, Giné and McKenzie (2011) for recent reviews. Specifically, this study adapts the approach used in Attanasio and Kaufmann (2014) to elicit the range of subject beliefs, as well as the approaches used by Dizon-Ross (2019) and Delavande and Kohler (2009) to elicit a coarse measure of the entire probability distribution of the subjects' beliefs. While the latter studies elicit the probability density function of beliefs within a predetermined and wide range of values, this study allows for the range of values to be determined by the range of beliefs of the respondents themselves. This enables a more precise estimate of the probability density function of the respondents' beliefs to be obtained. As far as the author knows, in a developing country context McKenzie, Gibson, and Stillman (2013) is the only other study to elicit subjective expectations of potential earnings from migration abroad, and Delavande and Kohler (2009) is the only other study to elicit subjective expectations of mortality rate.

Finally, this article relates to a growing literature on the effectiveness of targeted information in ameliorating information failure. Some examples of studies where information interventions have proven to be quite successful include Jensen (2010), Nguyen (2008), and Dinkelman and Martínez A. (2014) on improving schooling; Dizon-Ross (2019) on parental investment in the schooling of children; De Mel, McKenzie, and Woodruff (2011) on better access to credit; Dupas (2011a) and Godlonton, Munthali, and Thornton (2016) on safer sexual behaviors; Madajewicz et al. (2007) on choices of safe drinking water; and Shrestha and Yang (2019) on improving job satisfaction among migrant workers. This study

4 To the best of the author's knowledge, this is the first study that attempts to estimate the VSL directly through exogenous variations in perceived mortality risks and rewards generated from a randomized experiment. However, there are studies that use experimental variations to calculate the VSL indirectly. For instance, Kremer et al. (2011) used the experimental trade-off between incidents of diarrhea and travel time to compute the VSL.

shows another context where providing credible information can be a powerful policy tool for enabling potential migrants to make informed decisions.[5]

The rest of the article is organized as follows: section 2 describes the context and the study setting; section 3 outlines the intervention design and empirical strategy; section 4 discusses the effects of the interventions on perceptions; section 5 describes the follow-up survey and presents the effects of the interventions on migration and other outcomes; section 6 outlines the methodology for VSL estimation and presents the results; and section 7 summarizes the conclusions.

2. Context and Study Setting

With remittances from abroad making up almost a third of GDP, international migration for work is tremendously important for Nepal. This section first describes the national context of migration to Malaysia and the Persian Gulf countries. Then the context specific to this study is described, and the study sample is compared with the population of migrants in the whole country with respect to a few observable characteristics.

Context

In the recent decade, Nepal has been one of the largest suppliers of low-skill labor to Malaysia and the Persian Gulf countries. Historically, the migrant-to-population ratio has hovered slightly above 3 percent, driven mostly by open migration to India. However, between 2001 and 2011, the share of non-India migrants increased six-fold from 0.19 percent to 4.63 percent, with only a small change in the share of India migrants (from census estimates). The increase follows bilateral labor agreements between the governments of Nepal and various destination countries, as well as the boom in demand for low-skilled labor in the destination countries.

This surge of out-migration of workers from Nepal has been driven by work-related migration to the following primary destinations: Malaysia, Qatar, Saudi Arabia, and the United Arab Emirates. This type of migration is typically temporary, with each episode lasting two to three years. In many of the countries, especially in the Persian Gulf, a work visa is tied to specific employment with a specific employer.[6] It is rare that such migrants eventually end up permanently residing in the destination countries.

The process of finding jobs in these destination countries is heavily intermediated. Potential migrants typically contact (or are contacted by) independent local agents who link them to recruitment firms, popularly known as "manpower companies," in Kathmandu. These local agents are typically fellow villagers with good contacts in the manpower companies who recruit people for foreign employment from their own or neighboring villages. In addition, most local agents help potential migrants obtain passports and other travel documents. The manpower companies receive job vacancies from firms (or employment agencies) abroad. They are responsible for screening individuals (if at all) and matching them with job openings, processing contracts, obtaining necessary permits from the Department of Foreign Employment (DoFE), obtaining medical clearances, arranging travel and visas, and other related tasks. Both local agents and the manpower companies receive a commission, which potential workers pay prior to departure. It is unclear what fraction of the total costs of intermediation is borne by the employer and the employee, and what portions of the service charge go to the local agents and the manpower companies.

5 Providing information may not be sufficient to change behaviors in other contexts (see, for example, Bryan, Chowdhury, and Mobarak 2014), especially when other constraints are more binding. In addition, the content of the information, its manner of presentation, the identity of the information provider, and the identity of the recipient may matter in determining the effectiveness of providing information; see Dupas (2011b) for a review of the role of information in the context of health.

6 Naidu, Nyarko, and Wang (2016) studied the impact of relaxing such a constraint in Saudi Arabia.

With a large share of the adult male population working mostly in a handful of destination countries, one might expect that information about the risks and rewards of migration would flow back home. Information, especially about earnings abroad, would be expected to flow well among potential work migrants, though information about mortality rates, due to the relatively rare occurrence of death, may be harder to learn. Potential migrants could even use the social network of current migrants to find work abroad, as in Munshi (2003).

However, there is a growing sense among policymakers that potential migrants do not have accurate information about the rewards of migration. Anecdotes abound on how migrants discover the true nature of their jobs, to their frustration and dissatisfaction, only upon arrival at their destination. Since the intermediaries are paid only when people migrate, they have financial incentives to distort the information they provide, thus drawing potential migrants abroad. Although migrants need contracts from employers to receive clearances prior to migration, recruitment agents and agencies commonly acknowledge that many of these contracts are not honored (the potential migrants may or may not be aware of this). Further, a large share of migrant earnings comes from overtime compensation, which may not be explicitly mentioned in the contracts that workers receive. Because of these varied and biased sources of information, and because of somewhat fraudulent paperwork practices, potential migrants are often misinformed about their potential earnings.

Policymakers and journalists also tend to be of the opinion that potential migrants are submitting themselves to high risk of mortality by migrating to the popular destination countries. In recent years, national and international media have focused considerable attention on the numbers of Nepali workers who die abroad and on the exploitative conditions they work under; see, for example, Pattisson (2013b) and several ensuing articles in *The Guardian*. From a distinctly humanitarian perspective, the media may portray the system as a kind of "modern-day slavery." This focus could give potential migrants a misleading impression of mortality rates, as the stocks of Nepali migrants in the destination countries are rarely included in these reports. Further, deaths of men of the same age group in Nepal rarely receive media or policy attention unless they are a result of some horrific accident. Such biases in reporting could make it much harder for potential migrants to be accurately informed about the death rates associated with migration abroad.

All of this culminates in a belief among policymakers that potential migrants, knowingly or unknowingly, are trading high risks at unreasonably low prices. However, policymakers' beliefs are, after all, beliefs—not often fully guided by rigorous evidence. For instance, no evidence exists on potential migrants' actual beliefs about mortality rates and whether they respond to media coverage of deaths. The higher death tolls in certain countries could, in fact, simply reflect increased migration to those destinations as a result of increased opportunities.

Study Setting and Sample

The baseline survey and the main experiment for this study were conducted at the Department of Passport (DoP) in Kathmandu in January of 2015. Although Nepali citizens can obtain a new passport from the office of the Chief District Officer in their respective district at a cost of US$50, it takes almost three months to receive the passport. On the other hand, if they apply for a passport at the DoP in Kathmandu, they can choose the "fast-track" option and obtain their passport within a week at a cost of US$100. Many potential migrants, often guided by local agents, use this expedited service to obtain their passports. DoP officials estimated that during the period of the study, an average of 2,500 individuals applied for passports every day. However, not everyone who has obtained a passport will eventually migrate.[7] In

7 Estimates of the number of Nepali citizens leaving the country hovers around 1,000 to 2,000 per day, many of whom may have old passports.

fact, many of the study subjects mentioned that they were not sure whether they would eventually take up foreign employment and were applying for passports just to have the option of going abroad.

For this study, passport applicants who had just finished submitting their applications were approached and screened for eligibility for the study. Any male applicant who expressed an intention of working in Malaysia or the Persian Gulf countries was eligible. Enumerators explained the purpose of the study, and applicants who consented to be interviewed were taken to a designated section on the premises of DoP for the full interview.[8] At this stage, the passport applicants were told that the purpose of the study was to find out how well informed potential migrants were about work migration abroad and to see how information affected their migration decision. They were not told the exact nature of the information treatment.

The DoP office is a busy environment, yet the interviews were conducted in an area reserved exclusively for the study, free from outside interference. Because of the large volume of applicants, the DoP prohibits non-applicants from entering the office, so no family members, friends, or local recruitment agents interfered with the interviews.[9]

Between January 4, 2015 and February 3, 2015, 3,319 eligible potential migrants were interviewed. Although the study was conducted in the DoP in Kathmandu, the sample appears to be representative of the population of current Nepali migrants at that time; see table S5.1 in the supplementary online appendix, available with this article at *The World Bank Economic Review* website.[10] The average potential migrant in the study sample was 27.6 years of age and had 7.5 years of schooling, quite similar to the age and schooling of current migrants in the 2011 census (top panel of table S5.1 in the supplementary online appendix, columns 1 and 2). It is important to note that the study sample is predominantly low-skilled. Only 15 percent of the sample had completed more than 10 years of schooling, and only 2 percent had any college education. The study sample is predominantly rural, and participants were equally likely to be from the Southern Plain (Terai) and from the Hills and Mountains region—again, similar to the distribution of migrants in the census (second panel of table S5.1 in the supplementary online appendix, columns 1 and 2). Compared to the migrants in the census, the study sample is slightly more likely to be from the Mid-Western and Far-Western regions. However, this difference could reflect a change in the actual trend, as migration had become more ubiquitous in 2014 than it was in 2011. The distribution of migrants across Malaysia and the Persian Gulf countries also looks similar in both samples (third panel of table S5.1 in the supplementary online appendix, columns 1 and 2).

The study sample consisted of three distinct groups. There were 1,411 "inexperienced" potential migrants who had not yet migrated abroad for foreign employment. Of the rest of the sample, 1,341 were "experienced" potential migrants, who had previously migrated abroad for work but at the time of the study did not have an existing employment contract abroad; that is, these individuals had to search for employment again. The remaining 567 potential migrants were "on leave" from their work abroad; that is, they had an existing employment contract abroad and did not have to look for work. This group of migrants were back in Nepal on holiday and had to renew their passports. This classification will be used in the rest of the article unless explicitly noted otherwise.

The average inexperienced potential migrant is younger and slightly more educated than the average experienced one: 6.4 years younger, with 0.7 more years of schooling (table S5.1 in the supplementary

8 Due to the large volume of people submitting applications, the enumerators could not systematically keep a record of how many people they approached each day. Although the office accepted applications from 8:00 a.m. until 4:00 p.m., most eligible applicants came during the morning hours. On most days, eligible applicants had stopped coming in by 2:00 p.m.

9 The DoP made an exception for this study by allowing the enumerators inside the premises and permitting them to conduct the interviews.

10 To ensure comparability, the census sample is limited to male absentee members who were in the Middle East or Malaysia at the time. It excludes migrants to India and to other developed countries.

online appendix, columns 3 and 4). The difference in schooling is likely a reflection of the national cohort's trend in schooling more than anything else. The geographical distribution of the two groups is quite similar, except that the inexperienced potential migrants were more likely to be from the Mid-Western and Far-Western regions than the experienced ones—again possibly reflecting a geographical trend as migration became more common over the years. In terms of destination choices, the inexperienced potential migrants were more likely to want to go to Malaysia than the experienced ones.

3. Survey Design and Empirical Strategy

This section begins by describing the nature of the information provided, along with the experimental design. Then it describes the process by which expectations of earnings and mortality are measured. Balance checks are discussed next, and finally the empirical specification is presented.

Design of the Informational Intervention

Each of the eligible subjects who consented to be interviewed was asked questions on basic demographics, home location, and previous migration experience. He was also asked to name the destination country he was most likely to go to. Subjects were given some information relevant to their chosen destination. The information was provided verbally by the enumerators as well as in the form of a card that the respondents could keep for the duration of the interview. The precise content of the information depended on a random number generator built into the data-collection devices.

There were three types of information that could be provided to the subjects: basic information, wage information, and death information. The data underlying the information came from two sources. Data on flows of migrants and migrant wages came from the Department of Foreign Employment (DoFE). DoFE requires all migrant workers from Nepal to obtain a permit after receiving their employment contract. The permit application requires prospective migrants to report, among other things, the contractual monthly wage. Data for the basic information and wage information were derived from this source.[11] Data for the death information came from the Foreign Employment Promotion Board (FEPB), which records all deaths of Nepali migrant workers in the destination countries.[12]

When individuals were selected to receive the wage or the death information, they could be given either the "high" variant of the information or the "low" variant. The following lays out the precise wording of the information treatments; the exact information provided is shown in table S5.2 in the supplementary online appendix.

(1) Basic information: Provided to all study participants, this information includes the number of people leaving Nepal each month to work in the subject's destination of choice. For example:

Every month, XXXX people from Nepal leave for work in DEST.

(2) Wage information: A randomly chosen third of the participants did not receive any information on wages. Another third received the "high" variant, which was the average wage for cohorts that migrated in the year 2013; this translated to net earnings of US$5,700 on average over a typical migration episode. The remaining third received the "low" variant with information from 2010, which translated to net earnings of US$3,000 over a typical migration episode. The year of the statistic was clearly mentioned in the information provided, the exact wording of which was as follows:

In YYYY, migrants to DEST earned NRs. EEEE in a month.

11 Note that the information provided on wages was based on contractual wages. This may not be an accurate measure of migrants' total income while abroad, as it does not take into account employer provision of lodgings and food, overtime compensation, and potential contract renegotiations initiated by employers. However, the wage listed in the employment contract is the most credible information that potential migrants receive before departure. Thus, the information provided in the study was directly relevant to their migration decisions.

12 See Shrestha (2019) for more information on the data sources.

Figure 1. Sample Information Cards Shown to Respondents

Source: Author's design.

Note: This figure shows samples of two cards shown to the respondents. The person receiving the card on the left wants to go to Malaysia and is provided with general information on the national flow of workers to Malaysia, wage information from 2013 ("high"), and death information ("low") indicating the number of migrants who died in Malaysia and were from a predetermined district. The person receiving the card on the right wants to go to Qatar and is given general information on the national flow of workers to Qatar, along with death information ("high") indicating the number of migrants who died in Qatar and were from a predetermined district; this individual does not receive any wage information.

(3) Death information: As with the wage information treatment, a randomly chosen third of the respondents received no information on deaths, another third received the "high" variant, and the remainder received the "low" variant. The information provided was the number of deaths among Nepali migrants in the respondent's chosen destination who were from some predetermined reference district.[13] For the "high" variant, the reference district was chosen from the 75th percentile (top 25 percent) of the mortality distribution in the destination country, whereas for the "low" variant the reference district was chosen from the 25th percentile (bottom 25 percent). If the national migrant stock in the destination country were evenly distributed over all the originating districts, the "high" death information would translate to an annual mortality rate of 1.9 per thousand migrants and the "low" death information would translate to a mortality rate of 0.5 per thousand migrants. The exact wording of the information was as follows:

Last year, NN individuals from DIST, one of Nepal's 75 districts, died in DEST.

A random number generator built into the data-collection devices determined what wage and death information (if any) would be provided to each of the respondents. The assignment of wage information treatments was independent of the assignment of death information treatments. Figure 1 shows two

13 Note that the information provided is not sufficient by itself for calculating a mortality rate.

Table 1. Sample Size by Randomization Group

		Death information treatment			
		None	"Low"	"High"	Total
Wage information treatment	None	376	354	384	1,114
	"Low"	339	359	352	1,050
	"High"	382	410	363	1,155
	Total	1,097	1,123	1,099	3,319

Source: Author's calculations based on own survey data.
Note: This table shows the sample size in each of the information treatment cells. Within each of death information and wage information, respondents received no information, "low" information, and "high" information with equal probability. Death information was cross-randomized with wage information.

examples of the cards shown to respondents. On the left is an example of the card shown to a respondent intending to migrate to Malaysia for work and who was chosen to receive "high" wage information and "low" death information. On the right is an example of a card shown to a respondent intending to migrate to Qatar for work and who was chosen to receive "high" death information and no wage information. The full description of information provided to study subjects is given in table S5.2 in the supplementary online appendix. Table 1 shows the breakdown of the sample by randomization group.

Eliciting Beliefs about Earnings and Mortality Rate

After the respondents were shown the information cards, they were asked questions designed to elicit their beliefs about earnings and mortality upon migration.[14] First, the respondents were asked to give a range of possible monthly earnings (or mortality rates) upon migration. The data-collection device then divided the range into five equally sized bins. Respondents were then asked to distribute 10 tokens across the five bins based on their perceived likelihood of the wage (or mortality rate) falling in each of those bins. This process of using tokens is similar to that of Delavande and Kohler (2009) using beans to elicit subjective probability distributions of mortality. Supplementary online appendix S1 shows the exact scripts used as well as the checks to ensure that respondents were giving responses, particularly for mortality rates, consistent with their beliefs.

Balance

Individuals in the initial survey were randomly assigned to various treatment groups by a random number generator built into the software of the data-collection devices. Based on the random number, an appropriate intervention message would appear on the screen, which the enumerator would read out to the subject after giving him the corresponding information card. A few characteristics of the respondents were collected prior to randomization: age, years of schooling, prior migration experience, home location, and intended destination. To check for balance, the means of each of these characteristics were compared between any two arms of each type of intervention. For the death interventions, average characteristics were compared between the control group and the "high" treatment group, between the control group and the "low" treatment group, and between the "high" treatment group and the "low" treatment group. Tables S5.3–S5.8 in the supplementary online appendix show the detailed comparisons.

The overall sample appears well balanced. The joint tests across all group comparisons have a p-value of 0.65 for comparisons within the death information treatment arms and a p-value of 0.48

14 During the pilot, attempts were made to elicit expectations both before and after the information intervention. As the elicitation of expectations constituted the bulk of the questionnaire, respondents resorted to anchoring their answers when the same question was asked after the information intervention. For this reason, elicitation of expectations was done only once in the survey, *after* the information intervention. Consequently, expectations are compared across people of different groups.

for comparisons within the wage information treatment arms. Since most of the analysis focuses on subgroups of inexperienced and experienced migrants, balance between these subgroups was tested for as well.[15] For the inexperienced migrants, the joint tests across all comparisons have a p-value of 0.91 for comparisons within the death treatment arms and 0.56 for comparisons within the wage information treatment arms. The corresponding p-values for the experienced migrants are 0.13 and 0.26. Furthermore, in all of the empirical specifications to follow, the point estimates are similar and the substantive results are the same with inclusion and exclusion of these variables as controls.

Empirical Specification

The randomized nature of the intervention implies that the basic empirical specification for estimating the effect of the treatments is quite straightforward. Let y_i be the outcome for individual i. Then

$$y_i = \delta_1 \text{DeathLo}_i + \delta_2 \text{DeathHi}_i + \alpha_1 \text{WageLo}_i + \alpha_2 \text{WageHi}_i + X_i\beta + \varepsilon_i \quad (1)$$

is estimated, where DeathLo_i, DeathHi_i, WageLo_i, and WageHi_i are indicators of whether individual i receives each of the four treatments; the X_i are a set of controls that includes fixed effects for the chosen destination countries, age, completed education, development region, ecological belt, and indicators of whether the subject's location of origin is urban, whether he has prior migration experience, and whether he is back in Nepal on leave; and ε_i represents the error term. Arbitrary correlation is allowed across individuals at the date of initial survey × enumerator level. With alternative clustering specifications, the standard errors remain quantitatively similar.

4. Does Providing Information Affect Perceptions?

Using data from the control group (which did not receive any information on wages or deaths), the first part of this section establishes that potential migrants are indeed misinformed about the earnings and mortality risks of migration. To do so, only data on the subjects who did not receive any informational intervention are used. In the second part of this section, the impact of the informational treatment on perceptions about mortality and earnings is estimated.

Descriptive Evidence on the Extent of Misinformation

Misinformation on Expected Earnings

Misinformation about earnings abroad can persist even when a large proportion of the population are migrants. As discussed earlier, local agents and recruitment companies have an incentive to exaggerate earnings information to induce potential migrants to move abroad. Moreover, other migrants may provide biased information; they may lie to their social network about their earnings if they fear social taxation, or they may feel pressure to maintain social prestige they have gained from having migrated abroad (as in McKenzie, Gibson, and Stillman [2013], Seshan and Zubrickas [2017], Sayad, Macey, and Bourdieu [2004], and Joseph, Nyarko, and Wang [2018]).[16] This has fueled concern among policymakers that potential migrants may overestimate their earning potential abroad.

However, systematic evidence on the degree of such misinformation is rare. To date, there are no credible surveys of migrants in the destination countries that would allow the actual earnings of Nepali migrants to be determined. Further, the government does not have a way of tracking actual earnings abroad. Even the DoFE data on contractual wages, used for the information treatment, are not publicly available. In this section, the survey data collected in this study are used to compare potential migrants'

15 Since the survey did not have a pre-existing pool of potential candidates, randomization was done in-field in real time without the possibility of stratification by prior experience.

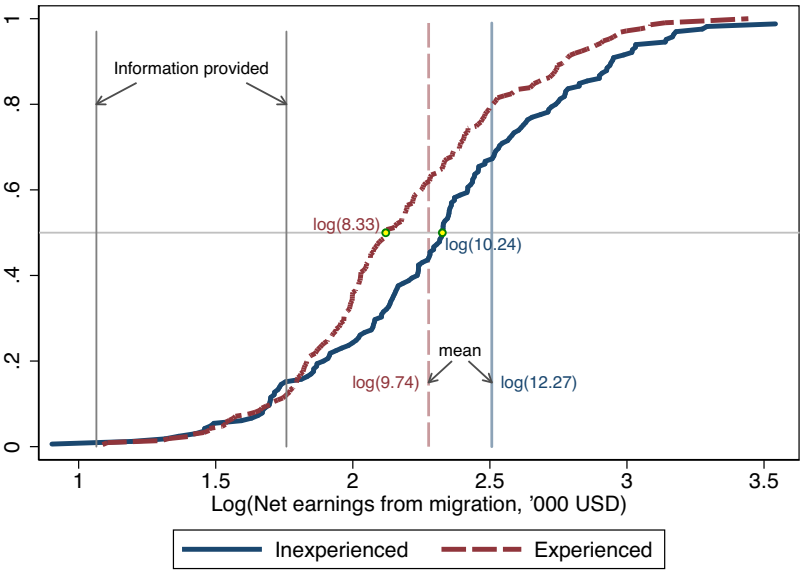
16 Baseler (2019) provides evidence for this in the context of domestic migration from rural Kenya.

expectations against a few benchmarks, showing that potential migrants are misinformed as to their earning potential.

Inexperienced potential migrants have higher expectations of earnings than the experienced ones (those who have migrated before).[17] On average, an inexperienced potential migrant expects to earn US$12,300 (net) from one migration episode, 26 percent more than the expectation of those who have migrated before (fig. 2).[18] This pattern holds for most of the distributions of earnings expectations. Above the 20th percentile, each quantile of expected earnings of inexperienced potential migrants is higher than the corresponding quantile for individuals who have migrated before. For instance, the median inexperienced potential migrant expects to earn 23 percent more than the median migrant with prior migration experience expects to earn, and the extent of the discrepancy remains about the same even at the 95th percentile.

It is quite striking that the inexperienced migrants have higher earnings expectations than those with greater experience and arguably better training. However, the sample of experienced migrants in this study is selective: it includes only those who want to migrate again. If a good experience of migration makes such individuals more likely to migrate again (as in Bryan, Chowdhury, and Mobarak [2014]), then the extent of misinformation found here is likely to be a lower bound on the actual gap in information. If experienced migrants migrate for lower earnings abroad because they view the option of staying home as being much worse, then the extent of misinformation here is likely to be an upper bound. In the current context, however, the former scenario is more likely to be predominant.[19]

Figure 2. Earnings Expectations of Potential Migrants



Source: Author's calculations based on own survey data.

Note: This figure shows the cumulative distribution function (cdf) of expected net earnings from migration for potential migrants in the control group (who did not receive any information on wages or deaths). The solid blue line represents the cdf for the inexperienced potential migrants, and the dashed red line represents the cdf for the experienced ones. "Inexperienced" refers to potential migrants who have not yet migrated for foreign employment. "Experienced" refers to potential migrants who have migrated in the past for foreign employment. The means for these two groups are indicated by vertical lines and labeled accordingly. The black vertical lines on the left show the level of information provided to the "high-wage" and "low-wage" treatment groups.

17 Note the change in definition of experienced migrants for this subsection: here "experienced" also includes migrants who are back in Nepal on leave and still have an existing employment contract abroad.

18 The magnitude of the difference remains similar with the addition of controls.

19 From data collected by The World Bank (2011), returnees who earned more are more likely to express a desire to migrate again in the near future. Those who earned above the median during their foreign-migration experience are 18 percent more likely to express a desire to migrate again.

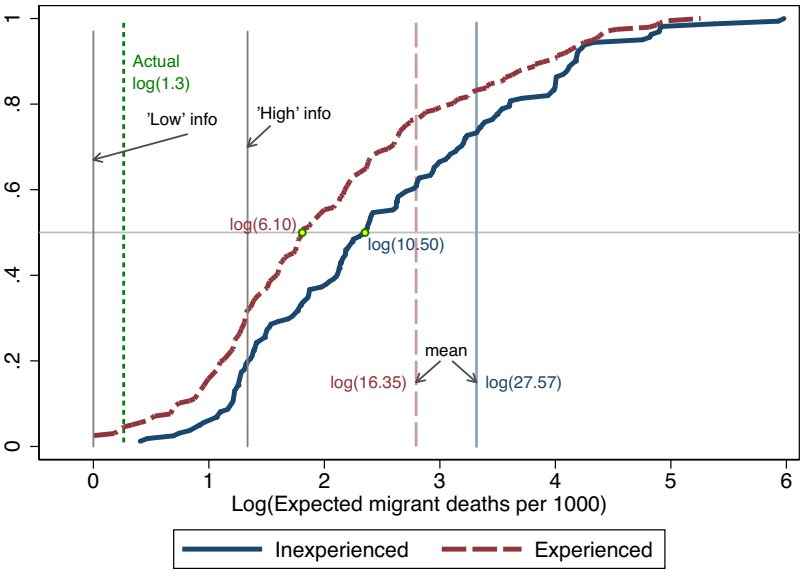
The expectations of potential migrants are also much higher compared to the information provided to them. As fig. 2 shows, only 15 percent of the inexperienced potential migrants and 10 percent of those who have migrated before expect to earn less than the "high" information provided of US$5,700. Virtually no one expects to make less than the "low" information provided of US$3,000. However, the official figures may not reflect the actual earnings of migrants abroad as it does not include overtime pay, which is often a large share of a migrant worker's compensation.

In any case, these comparisons, though not perfect, are suggestive of large information gaps between the earnings expectations of the inexperienced potential migrants and the actual earnings they are likely to accrue while abroad. The actual extent of misinformation for inexperienced potential work migrants is likely to be greater than 26 percent but smaller than that suggested by comparison with the official figure.

Misinformation on Expected Mortality Rate

Contrary to popular belief, potential migrants seem to overestimate their mortality rate abroad by a large factor. The average expected two-year mortality rate of inexperienced potential migrants is 28 per thousand, which is 68 percent higher than the expectation of those who have migrated before. Figure 3 shows that not only the mean but also every quantile of the expected mortality rate of the inexperienced potential migrants is higher than the corresponding quantile for those who have prior migration experience. For instance, the median expected mortality rate for the inexperienced potential migrants is 11 per thousand, whereas it is 6 per thousand for those who have migrated before. However, the expectations of both groups are much higher than the actual mortality rate faced by migrants abroad. Shrestha (2019) estimated the two-year mortality rate of Nepali workers in the destination countries of this study to be 1.3 per thousand. Only 3 percent of inexperienced potential migrants and 11 percent of those who have

Figure 3. Misinformation on Expected Mortality Rate Among Potential Migrants



Source: Author's calculations based on own survey data.

Note: This figure shows the cumulative distribution function (cdf) of expected mortality rate abroad for potential migrants in the control group (who did not receive any information on wages or deaths). The solid blue line represents the cdf for the inexperienced potential migrants, and the dashed red line represents the cdf for the experienced ones. "Inexperienced" refers to potential migrants who have not yet migrated for foreign employment. "Experienced" refers to potential migrants who have migrated in the past for foreign employment. The means for these two groups are indicated by vertical lines and labeled accordingly. The short-dashed green vertical line represents the true mortality rate faced by the migrants, computed using data on deaths from the Foreign Employment Promotion Board of Nepal and the migrant stock data from Census 2011. The black vertical lines on the left show the level of information provided to the 'high-wage" and "low-wage" treatment groups and are labeled accordingly.

migrated before expected the mortality rate to be lower than what it actually is. The overestimation at the mean is 21 times the actual figure for the inexperienced potential migrants and 13 times the actual figure for those who have migrated previously. The extent of overestimation is smaller for the median, but it is still 8 and 4 times the actual rate for inexperienced and experienced migrants, respectively.[20]

Impact of Information on Beliefs

To guide the empirical analysis of the impact of information on beliefs, a simple learning model is constructed, as outlined in supplementary online appendix S2. In this model, individuals have normally distributed priors and believe that the information provided to them is the result of a random draw from another normal distribution. Individuals use Bayes' rule to form their posterior beliefs, which yields a few testable predictions about the effects of information interventions. First, individuals update in the direction of the information. To the extent that potential migrants (especially the inexperienced ones) overestimate their mortality risks and earning potential, information, when effective, would lower their perceived mortality risks and earning potential. Second, information lowers the individual variance of posterior belief. Third, the effect of the information increases with the quantile of the individual belief distribution. The rest of this section will discuss the effects of information on the beliefs about earnings and mortality risk within this framework.

Effect on Perception of Mortality Risks

Consistent with the framework, table 2 shows that the "low" death information lowers potential migrants' perceived mortality risk of migration by 4 per thousand, which is 20 percent of the control group mean (column 1). The effect including the controls (column 2) is only slightly larger. Other information treatments do not seem to alter the perceived mortality rate of migration by a substantive amount.

Table 2. Effects of Information Treatments on Expected Mortality Rate (per 1,000 Migrants)

	All		Inexperienced		Experienced	
	(1)	(2)	(3)	(4)	(5)	(6)
Death info: high	0.216	−0.512	−1.709	−1.769	1.448	0.779
	(1.584)	(1.583)	(3.042)	(3.019)	(2.138)	(2.263)
Death info: low	−4.245**	−4.914***	−7.171**	−7.696**	−2.335	−2.987
	(1.726)	(1.722)	(3.237)	(3.194)	(2.041)	(2.111)
Wage info: high	−0.951	−0.916	1.988	2.183	−2.888	−3.470
	(1.664)	(1.679)	(2.909)	(2.993)	(2.570)	(2.508)
Wage info: low	−0.757	−1.146	2.435	1.714	−3.310	−3.663
	(1.847)	(1.850)	(3.000)	(3.003)	(2.851)	(2.719)
Controls	No	Yes	No	Yes	No	Yes
Observations	3319	3319	1411	1411	1341	1341
R-squared	0.009	0.048	0.009	0.041	0.009	0.048
Control group mean	21.3		27.6		17.4	
Standard deviation	(40)		(51)		(28.8)	

Source: Author's calculations based on own survey data.

Note: This table shows the impact of information treatments on expected mortality rate (per 1,000 migrants) estimated using equation (1). Odd-numbered columns do not have any controls other than the intended country of destination; even-numbered columns also control for fixed effects in age, years of education, region, ecological belt, rural/urban, and previous migration experience where applicable. Standard errors, reported in parentheses, are clustered at the surveyor × date of interview level. "Inexperienced" refers to potential migrants who have not yet migrated for foreign employment. "Experienced" refers to potential migrants who have migrated in the past but do not have an existing job contract abroad; it excludes those who are back home on leave from their work abroad. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$.

20 The finding that (young) adults overestimate their mortality is not uncommon. Delavande and Kohler (2009) found that males aged under 40 in rural Malawi have median mortality expectations that are more than 6 times the true mortality rate, with higher bias for younger cohorts. Similarly, Fischhoff et al. (2000) found that adolescents aged 15 and 16 in the United States overestimate their mortality rate by a factor of 33 even after excluding the "50 percent" responses.

For inexperienced potential migrants, providing the "low" death information lowers their perceived mortality risk of migration by 7.2 per thousand, which is 26 percent of the control group mean (column 3). Adding controls (column 4) slightly increases this point estimate. The "high" death information lowers the expected mortality rate by 1.7 per thousand, but the effect is not very precise (columns 3 and 4). These larger effects for the inexperienced potential migrants follow from the fact that these individuals overestimate their expected mortality rate relative to the truth as well as relative to the information provided to them.

Further analysis shows that for the inexperienced group, the "low" death information has larger effects at higher quantiles of expected mortality rates (fig. S4.1 in the supplementary online appendix). This suggests that the "low" death information corrects expectations for individuals who had higher expectations about mortality rate. That is, information lowers the mortality rate expectations of those who are more likely to be misinformed. Furthermore, the "low" death information not only affects the mean of an individual's belief but also the entire distribution of beliefs (table S5.9 in the supplementary online appendix). The effects at lower quantiles of individual beliefs are lower than those at higher quantiles. For instance, the effect at the lowest point of beliefs is 6.5 deaths per thousand, whereas the effect at the highest point is 10.5 per thousand. This suggests that information lowers the variance of individual beliefs as well.

The "low" death information treatment also lowered the perceived mortality risk of the experienced migrants by 2.3 per thousand (or 3.0 per thousand with controls), corresponding to 13 percent (17 percent with controls), but these effects are estimated imprecisely (table 2, columns 5 and 6). The "high" death information treatment has an imprecisely estimated positive effect on the expected mortality rate for this group, which could be a result of the higher priors of this group.

Effect on Perceptions of Earnings

Table 3 shows that the information interventions reduced the expected net earnings of the inexperienced potential migrants.[21] The "high" wage information reduced the expected net earnings by US$1,100, which is 8 percent of the control group mean (column 3). The "low" wage information reduced expected earnings by US$800, only slightly less than the effect of the "high" wage information treatment. In supplementary online appendix S2, it is shown that potential migrants might have treated the "low" wage information as being noisier. As the statistic was from an earlier year, potential migrants may have considered the "low" wage information less relevant or may have tried to update the statistic to a more relevant figure.

Neither of the wage information treatments had any effect on the earnings expectations of the experienced migrants (table 3, columns 5 and 6). The estimated effects are small and statistically indistinguishable from zero. The lack of effect for the experienced migrants is to be expected, as these individuals have better sources of information about their earnings potential.

Table S5.10 in the supplementary online appendix shows the effects of the interventions on various quantiles of the probability distribution of individual beliefs about earnings. For the inexperienced potential migrants, the "high" wage intervention lowers the 10th percentile of their belief about earnings by approximately US$800 (8 percent), and the "low" wage intervention lowers the 10th percentile of belief by US$600 (6 percent).

Furthermore, for the inexperienced group, the effect of the information treatment seems to come from the higher end of the distribution of expected net earnings. As fig. S4.2 in the supplementary online appendix shows, the "high" wage information appears to have lowered the earnings expectation more at the higher end of the expected earnings distribution, whereas the "low" wage information treatment

21 The value of net earnings from migration is obtained from expected monthly earnings multiplied by the modal duration of a migration episode to the chosen destination after subtracting the expected fees of migrating abroad to that destination. All the effects of the interventions are concentrated in expected monthly earnings, with no effect on the expected fees (monetary costs) of migration. The results remain almost identical if the analysis is repeated on the gross earnings from migration. Net earnings are used here for ease of interpretation.

Table 3. Effects of Information Treatments on Expected Net Earnings

	All		Inexperienced		Experienced	
	(1)	(2)	(3)	(4)	(5)	(6)
Death info: high	−0.472*	−0.379	−0.537	−0.477	−0.476	−0.202
	(0.275)	(0.253)	(0.429)	(0.386)	(0.324)	(0.295)
Death info: low	−0.092	−0.010	−0.458	−0.272	0.175	0.232
	(0.239)	(0.223)	(0.424)	(0.370)	(0.300)	(0.290)
Wage info: high	−0.339	−0.530**	−1.118***	−1.174***	0.221	0.045
	(0.243)	(0.230)	(0.399)	(0.381)	(0.266)	(0.246)
Wage info: low	−0.037	−0.118	−0.799**	−0.631*	0.387	0.305
	(0.256)	(0.230)	(0.391)	(0.370)	(0.323)	(0.298)
Controls	No	Yes	No	Yes	No	Yes
Observations	3319	3319	1411	1411	1341	1341
R-squared	0.089	0.224	0.102	0.228	0.143	0.278
Control group mean	10.9		12.3		9.66	
Standard deviation	(8.18)		(11.1)		(4.4)	

Source: Author's calculations based on own survey data.

Note: This table shows the impact of information treatments on expected net earnings from migration (in thousands of USD) estimated using equation (1). The value of net earnings from migration is obtained from each migrant's expected monthly earnings multiplied by the modal duration of a migration episode to their chosen destination after subtracting the expected fees of migrating to that destination. Odd-numbered columns do not have any controls other than the intended country of destination; even-numbered columns also control for fixed effects in age, years of education, region, ecological belt, rural/urban, and previous migration experience where applicable. Standard errors, reported in parentheses, are clustered at the surveyor × date of interview level. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

seems to have lowered expectations throughout the distribution, without having a higher effect at the higher end of the distribution. This suggests that individuals who did not completely believe the "low" wage information are likely to have been at the higher end of the expected earnings distribution.

5. Does Information Affect Migration and Other Outcomes?

The initial survey in January 2015 collected the phone numbers of each respondent, his wife, and another family member (when available). These subjects were contacted again in April 2015 through a telephone survey. The primary purpose of the telephone survey was to determine the migration status of the initial respondent. Upon contact and consent, enumerators administered a short survey, collecting information on migration-related details, job search efforts, and debt and asset positions. The first part of this section describes the follow-up survey protocols and discusses attrition. The second part discusses the effects of information on migration choices and robustness to various definitions of migration. The last part of this section describes the impact of informational interventions on other outcomes measured during the follow-up survey.

Follow-up Survey and Attrition

Follow-up Survey and Protocol

The follow-up telephone surveys in April 2015 were conducted from the data-collection firm's office under close guidance of two supervisors. A protocol was developed to reach out to as many initial respondents (or their family members) as possible. Enumerators would first call the initial respondent's phone number, followed by the wife's and the other family member's phone numbers if the initial respondent could not be reached. If anyone answered the phone, enumerators would confirm the identity of the initial respondent or their family members. Then enumerators would note the migration status of the initial respondent. If he was available, they administered the follow-up survey to him; if he had already migrated, they administered it to the telephone respondent (usually the wife, a sibling, or a parent of the initial

respondent). In cases where the initial respondent was known to be in the country, enumerators made up to three attempts to administer the follow-up survey to him, before resorting to family members.

If no one could be contacted on any of the phone numbers, the enumerator would try the set of phone numbers again at another time or day. Enumerators attempted to call each set of numbers for six days with at least one attempt every day before giving up on contacting the subjects. If the telephone respondents were busy at the time of the call, enumerators would make an appointment to speak with them again at a time of their choosing. This protocol was designed to ensure that the subjects, or their family members, were contacted whenever possible, and failure to contact them would mean either that the telephone numbers provided were wrong or that the subjects had already migrated.

Attrition

Following this protocol, the enumerators were able to conduct detailed follow-up surveys with 2,799 initial respondents or their family members between March 26 and April 24, 2015. This represents 84 percent of the overall sample, 85 percent of the inexperienced potential migrants, 86 percent of the experienced migrants, and only 78 percent of the subjects who had an existing contract abroad and were back in Nepal on leave. Since the main outcome of interest in this study is migration, attrition from the survey is also potentially an outcome in the sense that one is less likely to obtain information about a subject who has migrated.

Three separate measures of attrition are considered. The first, Attrition-F, is defined by whether the full follow-up survey was conducted or not. The second, Attrition-B, indicates whether it was possible to determine the migration status of the initial respondent. This measure differs from Attrition-F when enumerators were able to determine the migration status of an individual but were not able to conduct the full follow-up interview. The attrition rate according to the Attrition-B measure is 13 percent for the overall sample, with a slightly lower rate for the experienced potential migrants. Among the 13 percent of subjects with unknown migration status, the attempted calls to the numbers provided by them were examined. The phones of many individuals in this group were switched off or not in operation, but a few of the numbers provided were incorrect (as confirmed either by the telephone operator or by the person who answered the phone). In a very small number of cases, the telephone respondents refused to identify themselves or provide any information on the study subjects. Hence the third measure of attrition, Attrition-P, indicates confirmed wrong numbers or refusal to interview. According to this measure, the attrition rate is about 4 percent in the overall sample as well as in the subsamples.

The first measure of attrition, Attrition-F, is correlated with the information treatments. As the top panel of table 4 shows, this measure of attrition is higher for death information treatments (marginally significant) and lower for wage information treatments (columns 1 and 2). For the inexperienced potential migrants, the "high" wage information reduces this measure of attrition by 3 percentage points, significant at the 10 percent level (columns 3 and 4). For the experienced potential migrants, the "low" death information increases attrition by 6 percentage points (column 5).

The second measure of attrition, Attrition-B, is also correlated with the information treatments. As the second panel of table 4 shows, this measure of attrition matches the correlation pattern observed for Attrition-F. For the overall sample, death information treatments increase attrition whereas wage information treatments reduce it (columns 1 and 2). For the inexperienced potential migrants, in particular, the "high" wage information treatment lowers this measure of attrition by 4 percentage points (columns 3 and 4); for the experienced potential migrants, the "low" death information treatment increases attrition by 7 percentage points (column 5).

The third measure of attrition, Attrition-P, is not correlated with any of the information treatments (table 4, bottom panel). The values of this measure of attrition are low and, more importantly, not correlated with treatment status. Particularly for the inexperienced migrants, even the direction of the effects does not match the pattern observed for other measures of attrition.

Table 4. Correlation Between Information Treatments and Various Attrition Measures

	All		Inexperienced		Experienced	
	(1)	(2)	(3)	(4)	(5)	(6)
Attrition-F: Did not conduct full follow-up survey						
Death info: high	0.005	0.005	−0.001	0.002	0.015	0.013
	(0.016)	(0.016)	(0.023)	(0.023)	(0.023)	(0.024)
Death info: low	0.030*	0.034**	0.016	0.022	0.060***	0.065***
	(0.016)	(0.016)	(0.025)	(0.026)	(0.021)	(0.021)
Wage info: high	−0.031**	−0.032**	−0.041*	−0.043*	−0.020	−0.015
	(0.015)	(0.015)	(0.023)	(0.023)	(0.023)	(0.023)
Wage info: low	0.003	0.003	0.009	0.002	0.013	0.015
	(0.017)	(0.016)	(0.025)	(0.025)	(0.024)	(0.024)
Controls	No	Yes	No	Yes	No	Yes
Control group mean	0.162		0.152		0.149	
Standard deviation	(0.369)		(0.36)		(0.357)	
Attrition-B: Migration status unknown						
Death info: high	0.016	0.016	0.005	0.008	0.022	0.020
	(0.015)	(0.015)	(0.022)	(0.021)	(0.020)	(0.021)
Death info: low	0.036**	0.040***	0.014	0.021	0.065***	0.067***
	(0.015)	(0.014)	(0.023)	(0.023)	(0.020)	(0.020)
Wage info: high	−0.031**	−0.031**	−0.044**	−0.046**	−0.014	−0.009
	(0.014)	(0.014)	(0.021)	(0.021)	(0.021)	(0.021)
Wage info: low	−0.003	−0.001	−0.012	−0.017	0.016	0.019
	(0.015)	(0.014)	(0.023)	(0.023)	(0.022)	(0.022)
Controls	No	Yes	No	Yes	No	Yes
Control group mean	0.13		0.127		0.112	
Standard deviation	(0.337)		(0.334)		(0.316)	
Attrition-P: Incorrect phone numbers or refused to interview						
Death info: high	0.001	0.001	−0.002	0.001	−0.002	−0.003
	(0.008)	(0.008)	(0.012)	(0.012)	(0.013)	(0.014)
Death info: low	0.003	0.005	−0.002	0.002	0.013	0.013
	(0.008)	(0.009)	(0.013)	(0.013)	(0.013)	(0.014)
Wage info: high	−0.001	−0.000	−0.012	−0.011	0.001	0.001
	(0.007)	(0.007)	(0.011)	(0.011)	(0.012)	(0.012)
Wage info: low	0.003	0.003	0.010	0.009	−0.004	−0.003
	(0.007)	(0.007)	(0.013)	(0.012)	(0.011)	(0.011)
Controls	No	Yes	No	Yes	No	Yes
Control group mean	0.0399		0.0364		0.0435	
Standard deviation	(0.196)		(0.188)		(0.205)	

Source: Author's calculations based on own survey data.

Note: This table checks whether the three measures of attrition are correlated with information treatments using equation (1). The heading of each panel indicates and defines the measure of migration. Odd-numbered columns do not have any controls other than the intended country of destination; even-numbered columns also control for fixed effects in age, years of education, region, ecological belt, rural/urban, and previous migration experience where applicable. Standard errors, reported in parentheses, are clustered at the surveyor × date of interview level. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Attriters appear broadly similar to non-attriters except for a few characteristics. As table S5.11 in the supplementary online appendix shows, attriters, by all three measures, have similar characteristics to non-attriters except in completed years of schooling (first and second panels). For both of the subgroups, the joint null that attriters and non-attriters have the same age, geography, and location cannot be rejected. However, attriters have over one year less of completed schooling compared to non-attriters (first panel, row 2). This makes sense intuitively, as those who have fewer years of schooling are likely to have fewer

phones in the family or could be more likely to misreport phone numbers. However, as seen in table 4, correlation patterns between treatments and attrition measures remain the same despite adding controls, including schooling.

More importantly, attriters, as classified by the Attrited-F and Attrited-B measures, anticipated earlier migration even during the initial survey in January. In the initial survey, respondents were asked to assign 10 tokens to five bins representing their likely time of migration from the date of the survey: 0–3 months, 4–6 months, 8–9 months, 10–12 months, and 12+ months. Compared to non-attriters, attriters by those two measures were more likely to indicate certainty of migrating within three months or an even earlier expected migration time (third panel of table S5.11 in the supplementary online appendix). However, attriters by the third measure, Attrited-P, did not have different expectations from those of non-attriters.

This suggests that attriters by the Attrited-F and Attrited-B measures attrited precisely because they had migrated. In the next subsection, the migration outcomes used in this study are defined based on different assumptions on the attriters. In measures of migration and other outcomes that suffer from missing variables, the Lee (2009) bounds of effects are also estimated.

Effects on Migration

As mentioned above, various measures of migration status can be defined based on different assumptions that one makes about the attriters. Those whose migration status was observed were treated as migrants if they had already left or were confirmed to be leaving within two weeks of the follow-up survey.[22] For the author's preferred measure of migration, Migrated-P, all attriters are assumed to be migrants except for those who provided wrong phone numbers or refused to give any information to the enumerators; that is, this measure of migration treats Attrition-P as missing and considers subjects with switched-off or unavailable phones as migrants. With this measure, as shown above, missing data are uncorrelated with the information treatments, and hence the estimates of equation (1) are unbiased. Furthermore, subjects with phones switched off or unavailable during the follow-up survey had expected to migrate earlier and are indeed more likely to be actual migrants.

For the inexperienced potential migrants, their migration decisions were consistent with the changes in expectations about earnings and mortality rate. As table 5 shows, "low" death information increased migration by 7 percentage points, whereas the wage information treatments lowered migration by 5 to 6 percentage points (top panel, columns 3 and 4). These effects are equivalent to more than 20 percent of the migration rate observed in the control group. The effects are also what one would expect, given the changes in expectations that the treatments induced. The "low" death information lowered the expected mortality rate abroad, making the destinations more appealing and inducing more of the potential migrants to migrate. On the other hand, the wage information treatments lowered the expected earnings abroad, making destinations less attractive and inducing fewer of the subjects to migrate.

The information effects on expectations also manifested in the migration decisions of the experienced potential migrants. As table 5 shows, the "low" death information, which lowered expected mortality rates abroad, increased migration by 9 percentage points (top panel, columns 5 and 6). On the other hand, the wage information treatments, which failed to induce a change in expectations, also failed to induce a change in migration response.

The effects of information treatments remain qualitatively and quantitatively similar for the second measure of migration, Migrated-A. This measure of migration treats all attriters as having migrated. As the second panel of table 5 shows, the effects of information treatments on this measure of migration are quite similar to the effects on the preferred measure, Migrated-P.

22 The results are essentially the same if the confirmed departure time is changed to one week or zero weeks instead of two weeks.

Table 5. Effects of Information Treatments on Actual Migration

	All		Inexperienced		Experienced	
	(1)	(2)	(3)	(4)	(5)	(6)
Effect on preferred measure of migration, Migrated-P						
Migrated or will do so in two weeks, or reasonable attriters; excludes Attrited-P						
Death info: high	0.032*	0.043**	0.019	0.017	0.046	0.053
	(0.019)	(0.018)	(0.028)	(0.029)	(0.034)	(0.034)
Death info: low	0.059***	0.074***	0.071**	0.073**	0.089***	0.086***
	(0.020)	(0.019)	(0.031)	(0.030)	(0.030)	(0.031)
Wage info: high	−0.013	−0.023	−0.062**	−0.064**	0.009	0.005
	(0.021)	(0.020)	(0.030)	(0.030)	(0.033)	(0.032)
Wage info: low	−0.001	−0.005	−0.047	−0.051	0.034	0.038
	(0.021)	(0.019)	(0.031)	(0.031)	(0.034)	(0.033)
Controls	No	Yes	No	Yes	No	Yes
Observations	3210	3210	1364	1364	1297	1297
Control group mean	0.41		0.308		0.37	
Standard deviation	(0.493)		(0.463)		(0.484)	
Effect on alternative measure of migration, Migrated-A						
Migrated or will do so in two weeks, or all attriters						
Death info: high	0.032*	0.040**	0.016	0.016	0.044	0.051
	(0.019)	(0.017)	(0.028)	(0.029)	(0.033)	(0.033)
Death info: low	0.060***	0.074***	0.068**	0.073**	0.093***	0.088***
	(0.020)	(0.019)	(0.031)	(0.030)	(0.030)	(0.030)
Wage info: high	−0.013	−0.024	−0.068**	−0.070**	0.010	0.007
	(0.022)	(0.020)	(0.031)	(0.031)	(0.032)	(0.032)
Wage info: low	0.001	−0.003	−0.038	−0.043	0.030	0.034
	(0.021)	(0.019)	(0.032)	(0.032)	(0.033)	(0.032)
Controls	No	Yes	No	Yes	No	Yes
Observations	3319	3319	1411	1411	1341	1341
Control group mean	0.434		0.333		0.398	
Standard deviation	(0.496)		(0.473)		(0.491)	
Effect on basic measure of migration, Migrated-B						
Migrated or will do so in two weeks; excludes Attrited-B						
Death info: high	0.024	0.038**	0.015	0.013	0.030	0.039
	(0.020)	(0.018)	(0.027)	(0.028)	(0.033)	(0.034)
Death info: low	0.043**	0.057***	0.064**	0.062**	0.059*	0.053
	(0.021)	(0.020)	(0.030)	(0.029)	(0.032)	(0.032)
Wage info: high	0.010	−0.005	−0.037	−0.038	0.022	0.013
	(0.022)	(0.019)	(0.028)	(0.029)	(0.034)	(0.033)
Wage info: low	0.003	−0.004	−0.033	−0.037	0.026	0.032
	(0.021)	(0.019)	(0.030)	(0.030)	(0.036)	(0.036)
Controls	No	Yes	No	Yes	No	Yes
Observations	2877	2877	1242	1242	1181	1181
Control group mean	0.349		0.236		0.322	
Standard deviation	(0.477)		(0.426)		(0.469)	

Source: Author's calculations based on own survey data.

Note: This table shows the impact of information treatments on various measures of migration estimated using equation (1). The heading of each panel indicates and defines the measure of migration. Odd-numbered columns do not have any controls other than the intended country of destination; even-numbered columns also control for fixed effects in age, years of education, region, ecological belt, rural/urban, and previous migration experience where applicable. Standard errors, reported in parentheses, are clustered at the surveyor × date of interview level. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Because of the missing variables problem, the effects of the information treatments on the basic measure of migration, Migrated-B, are biased. This measure treats all individuals with unconfirmed migration status (Attrited-B) as missing. For the inexperienced potential migrants, "low" death information is not correlated with Attrited-B, and hence, as table 5 shows, its effect on this measure of migration is almost the same as for the previous two measures of migration (bottom panel, columns 3 and 4). However, the effect of the wage information treatment is two-thirds the size of the effect for other measures of migration. This is precisely what one would expect if wage interventions led the potential migrants to not migrate and therefore be more likely to be found during the follow-up survey.

The third panel of table 5 shows the results for this measure of migration (Migrated-B). For the inexperienced potential migrants, the "low" death information treatment increased migration by 6 percentage points. This effect, significant at the 5 percent level, is almost 30 percent of the migration rate in the control group. For this group, "high" death information also increases migration slightly (by 9 percent), but the effect is insignificant. Note that since missing data (Attrition-B) are not correlated with death interventions, this point estimate is similar to the preferred measure of migration. However, since missing data (Attrition-B) are correlated with wage information treatments, the point estimate for wage information treatments is lower and not significantly different from zero at conventional levels. This is precisely what one would expect if wage interventions led the inexperienced potential migrants to not migrate and therefore be more likely to be found during the follow-up survey. Similarly, for the experienced migrants, "low" death information, which increased attrition, has a smaller effect than for other measures. Again, this is what one would expect if "low" death information led the experienced potential migrants to migrate more and therefore become less likely to be found during the follow-up survey.

The Lee (2009) bounds on the effects of the information treatments on the basic measure of migration (Migrated-B) also support the notion that attrition (Attrited-B) captures unobserved migration. As table 6 shows, the bounds on the effects of the death information treatments for inexperienced potential migrants are tight and similar in magnitude to the effects on the preferred measure of migration (second panel, columns 1 and 2). However, the lower bound on the effect of wage information on migration is similar to the effect on the preferred measure (Migrated-P), whereas the upper bound on the effect is similar to the effect on the basic measure (Migrated-B). That is, selectively dropping a random subset of those who migrated and are from the wage information treatment group in order to balance attrition produces an estimate not too different from the effect on the basic measure (Migrated-B). However, selectively dropping a random subset of those who did not migrate and are from the wage information treatment group to balance attrition produces an estimate different from the effect on the basic measure and very similar to the effect on the preferred measure (Migrated-P). This also suggests that attrition is more likely among migrants than among non-migrants.

Effects on Other Outcomes

This subsection examines the effects of the information treatments on other outcomes that were collected in the full follow-up survey. This would help to shed light on other effects of the intervention or the mechanism of the migration effect. Because these measures were collected through the full follow-up survey, they suffer from attrition (Attrition-F).

Information treatments do not affect most of the other measured outcomes, except for some measures of job search behavior. None of the information treatments significantly changed respondents' intended destination country or region (Persian Gulf versus other regions). As table S5.12 in the supplementary online appendix shows, the effects are not just statistically insignificant but also numerically small. However, wage information, particularly the "low" variant, increases the chances that inexperienced potential migrants will change their manpower companies. As table S5.13 in the supplementary online appendix shows, inexperienced migrants receiving wage information are 5 to 8 percentage points more likely to consult a different manpower company after the initial survey (top panel, columns 3 and 4).

Table 6. Lee (2009) Bounds of Treatment Effects on Basic Migration (Migrated-B)

	Death information		*Wage information*	
	High (1)	**Low** (2)	**High** (3)	**Low** (4)
Sample: All				
Lower bound	0.019	0.030	−0.016	0.003
	(0.024)	(0.025)	(0.026)	(0.026)
Upper bound	0.040	0.073***	0.020	0.004
	(0.026)	(0.026)	(0.024)	(0.025)
95% CI	[−0.022, 0.083]	[−0.010, 0.116]	[−0.058, 0.060]	[−0.048, 0.052]
Sample: Inexperienced				
Lower bound	0.014	0.065**	−0.076**	−0.042
	(0.030)	(0.031)	(0.036)	(0.038)
Upper bound	0.018	0.081**	−0.028	−0.029
	(0.035)	(0.036)	(0.032)	(0.033)
95% CI	[−0.044, 0.085]	[0.009, 0.146]	[−0.136, 0.024]	[−0.111, 0.032]
Sample: Experienced				
Lower bound	0.027	0.040	0.011	0.016
	(0.037)	(0.039)	(0.040)	(0.039)
Upper bound	0.051	0.121***	0.024	0.042
	(0.041)	(0.040)	(0.038)	(0.040)
95% CI	[−0.038, 0.122]	[−0.023, 0.187]	[−0.062, 0.094]	[−0.051, 0.111]

Source: Author's calculations based on own survey data.
Note: This table shows the estimated Lee (2009) bounds for the basic definition of migration, Migrated-B (see table 5 and the text for the definition of Migrated-B). Each column in each panel represents a separate estimation of the bounds. Each estimation is performed on the sample of the treatment group indicated by the column heading and the control group. For each estimation a lower bound and an upper bound are reported, with standard errors in parentheses. The 95% confidence interval (CI) on the bounds is given in brackets. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

The Lee (2009) bounds on this estimate are positive and large, suggesting that the effect is large despite the missing variables concern (table S5.14 in the supplementary online appendix, middle panel, columns 3 and 4). This probably reflects an action that inexperienced potential migrants can take upon realizing that they had been misinformed. However, none of the information treatments affect whether these subjects consult with family members or friends (table S5.13 in the supplementary online appendix, middle and bottom panels). Similarly, none of the information treatments changed respondents' household debt position (table S5.15 in the supplementary online appendix).

6. Estimates of Migration Elasticities

Methodology

Since the information treatments are effective in changing the expectations of inexperienced potential migrants concerning both earnings and mortality rate associated with migration, the elasticity of migration with respect to beliefs will now be estimated using the randomized information treatments as instruments. Specifically, the following system of equations is estimated:

$$\begin{aligned} M_i &= \beta d_i + \gamma W_i + \alpha X_i + \varepsilon_i \\ d_i &= \mu_1 \,\mathrm{DeathLo}_i + \mu_2 \,\mathrm{DeathHi}_i + \mu_3 \mathrm{WageLo}_i + \mu_4 \mathrm{WageHi}_i + \alpha_d X_i + \eta_i \,, \\ W_i &= \delta_1 \,\mathrm{DeathLo}_i + \delta_2 \,\mathrm{DeathHi}_i + \delta_3 \mathrm{WageLo}_i + \delta_4 \mathrm{WageHi}_i + \alpha_w X_i + \nu_i \end{aligned} \tag{2}$$

where M_i indicates the migration choice of individual i, W_i is the logarithm of expected earnings from migration, d_i is the logarithm of expected mortality risk from migration, and ε_i represents the unobserved individual-specific factors that influence the migration decision of the individual. Because of unobserved factors such as inherent ability and carefulness, beliefs are correlated with ε_i. Hence, the exogenous variations in d_i and W_i generated by the randomized information treatments—DeathLo$_i$, DeathHi$_i$, WageLo$_i$, and WageHi$_i$—are used as instruments in the first equation.

In the setting of this experiment, the key identifying assumptions in estimating the elasticities are likely to hold. First, in section 4 it was shown that μ_k and δ_k are not jointly nonzero. Second, randomization of information treatments ensures that (η_i, ν_i) are uncorrelated with the information treatments. Furthermore, under the assumption that the treatments do not change unobserved characteristics associated with migration, the information treatment is also uncorrelated with ε.[23] Under these identifying assumptions, the 2-SLS estimation of equation (2) provides estimators of β and γ for the pool of inexperienced potential migrants. Given this setup, the VSL is simply the ratio of the two elasticities.[24] To the best of the author's knowledge, the present study is the first to use a randomized controlled trial in an attempt to estimate the VSL.

Estimates of Elasticities and VSL for Inexperienced Potential Migrants

Both the logarithmic and the level specifications estimate migration elasticities that are quite similar across specifications. As table 7 shows, across all three measures of migration, an increase in the (logarithm of) expected mortality rate lowers the probability of migration, and an increase in the (logarithm of) expected earnings raises the migration probability, as expected (top panel). For the preferred measure of migration (Migrated-P), an increase of 1 percentage point in the expected mortality rate reduces migration by 0.22–0.25 percentage points (columns 1 and 2). This translates to an elasticity of migration with respect to expected mortality risk of 0.7–0.8. Similarly, an increase of 1 percentage point in expected earnings increases migration by 0.35–0.44 percentage points, which translates to an elasticity of migration with respect to expected earnings of 1.2–1.4. The bottom panel of table 7 gives estimates of similar elasticities with the levels specification. An increase in the expected mortality rate by 1 per thousand reduces the migration rate by 1.0–1.1 percentage points (columns 1 and 2). This translates to an elasticity of 0.9–1.0, which is similar to, though slightly higher than, the estimate from the logarithmic specification. An increase of US$1,000 in expected earnings increases the migration rate by 2.5–3.0 percentage points, which implies an elasticity of 1.0–1.2, only slightly smaller than the elasticity estimated using the logarithmic specification. However, while all estimates for elasticities with respect to expected mortality rates are statistically significant at conventional levels, estimates of elasticities with respect to earnings have much larger standard errors to be significant at conventional levels.[25] The results are also robust to using alternative points in the belief distribution.[26]

23 One way to check this assumption is to see whether the information treatments changed their occupation choices, and they did not. Furthermore, for the inexperienced potential migrants, the wage information treatments did not change mortality rate expectations and the death information treatments did not change earnings expectations (columns 3 and 4 of tables 2 and 3). These results suggest that the exclusion assumption is likely to hold in this context.

24 The value of statistical life (VSL) is the (utility constant) trade-off between earnings and mortality risks and is given by $\text{VSL} = \frac{dW}{dd} = -\frac{\partial E[M]}{\partial d} / \frac{\partial E[M]}{\partial W} = -\frac{\beta}{\gamma}$. In this setup, it can be estimated by $\widehat{\text{VSL}} = -\frac{\hat{\beta}}{\hat{\gamma}}$.

25 This is a result of the smaller effect of the "low" wage information in changing beliefs and actual migration, together with the high standard errors of the estimated impacts. This is consistent with potential migrants interpreting the "low" wage information as being noisier (see supplementary online appendix S2). Moreover, table 7 reports the results of tests robust to weak instruments. Across most specifications and across various tests, the null of no joint effect of expected mortality rate and expected earnings on migration is rejected using all common forms of the test.

26 See supplementary online appendix S3 for more details.

Table 7. Instrumental Variable Estimates of Migration Elasticities and Value of Statistical Life

	Migrated-P Preferred		Migrated-A Alternative		Migrated-B Basic	
	(1)	(2)	(3)	(4)	(5)	(6)
Logarithmic specification						
Log(expected mortality	−0.254**	−0.223**	−0.254**	−0.231**	−0.229**	−0.201**
per 1,000)	(0.118)	(0.101)	(0.120)	(0.106)	(0.103)	(0.093)
Log(expected net	0.346	0.436	0.413	0.470	0.103	0.205
earnings, '000 USD)	(0.412)	(0.421)	(0.459)	(0.455)	(0.326)	(0.364)
Weak instrument robust tests of joint significance						
CLR: *F*-statistic	8.63	9.53	8.30	9.38	6.96	6.76
p-value	(0.010)	(0.006)	(0.014)	(0.007)	(0.026)	(0.031)
K: *F*-statistic	7.68	8.37	7.60	8.56	6.74	6.34
p-value	(0.022)	(0.015)	(0.022)	(0.014)	(0.034)	(0.042)
VSL ('000 USD)	298.6	207.8	252.4	201.7	906.1	402.5
	(384.1)	(226.3)	(305.4)	(221.8)	(2907.2)	(748.6)
Controls	No	Yes	No	Yes	No	Yes
Levels specification						
Expected mortality	−0.011*	−0.010*	−0.010*	−0.010*	−0.009*	−0.009*
(per 1,000)	(0.006)	(0.005)	(0.006)	(0.005)	(0.005)	(0.005)
Expected net earnings	0.025	0.030	0.032	0.035	0.004	0.011
('000 USD)	(0.036)	(0.036)	(0.039)	(0.039)	(0.027)	(0.029)
Weak instrument robust tests of joint significance						
CLR: *F*-statistic	8.13	9.57	7.81	9.43	6.16	6.43
p-value	(0.024)	(0.008)	(0.024)	(0.009)	(0.061)	(0.047)
K: *F*-statistic	7.68	9.08	7.53	9.12	6.12	6.36
p-value	(0.022)	(0.011)	(0.023)	(0.010)	(0.047)	(0.042)
VSL ('000 USD)	415.8	329.0	331.5	290.3	2319.4	786.8
	(638.8)	(436.4)	(442.1)	(357.1)	(15853.4)	(2116.2)
Controls	No	Yes	No	Yes	No	Yes

Source: Author's calculations based on own survey data.

Note: This table shows 2-SLS estimates of the effect of expected earnings and expected mortality rate on migration choices of inexperienced potential migrants, estimated using equation (2). Information treatments are used as instruments for expected earnings and expected mortality. The heading of each column indicates the measure of migration used as the outcome variable; see table 5 and the text for the definition of these measures. The heading of each panel indicates whether the logarithm or level of expectations is used in the estimation. Standard errors are clustered at the surveyor × date of interview level. Tests robust to weak instruments are presented below the coefficients. The value of statistical life (VSL), estimated as the ratio of the two coefficients, is reported at the bottom of each panel. Standard errors for VSL are computed using the delta method. Expected net earnings and VSL are given in thousands of US dollars. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

The point estimates suggest that misinformation has actually lowered the migration rate because potential migrants overestimate mortality more than they overestimate earnings. If inexperienced potential migrants had true information on the mortality risk (1.3 per thousand over a two-year period rather than 27.57), migration would increase by 29 percentage points from the current level (assuming the effect to be the same for large changes in perceptions). Similarly, if inexperienced potential migrants had the same net earnings expectations as the experienced ones ($9,660 instead of $12,270), migration would decrease by 7 percentage points. The net effect on migration would therefore be an increase of 22 percentage points—a remarkable 70 percent increase. Even assuming a much lower actual earnings expectation of $6,000 for the inexperienced potential migrants (since the expectation of the experienced migrants is likely to be an upper bound on the counterfactual earnings), migration would still go up by 10 percentage points (33 percent from the current level).

The VSL implied by this choice is the ratio of the marginal effects of the expectations on migration decision. For the preferred measure of migration (Migrated-P), estimates of the VSL range from US$0.21 million to US$0.42 million, with the levels estimates being slightly higher than the logarithmic ones (table 7, columns 1 and 2). The estimates are slightly higher for other measures of migration. Specifications with additional controls produce slightly lower estimates of the VSL. As with the estimates of earnings elasticity, the estimates of VSL are not significant statistically.[27]

Further evidence and analysis in Shrestha (2019) provide an explanation for the high expected mortality rate in the data. Shrestha (2019) found a large reduction in migration outflow in response to actual migrant deaths. If the elasticity estimates from the present study are combined with the migration response to actual migrant deaths to calculate the implied change in perception induced by a single migrant death, a large response is found—an increase of 5.3 per thousand in the two-year mortality expectation in response to a single migrant death. It can be shown that such responses, and the patterns of migration response, are not explained by models of rational Bayesian learning. Models of learning fallacies, such as belief in the "law of small numbers" (à la Rabin [2002]), provide a better explanation of the level of belief updating and the nature of the migration response. Given the large response to actual migrant deaths, the expected mortality rate of 27.6 per thousand per migration episode can be generated by potential migrants observing six months of migrant deaths in their own districts to form their priors. That is, the high expectation of mortality rate among potential migrants is consistent with the personal experience potential migrants probably have of learning about migrant deaths happening around them, as well as the fallacious way they appear to process such information.

7. Conclusion

The gain from international migration is expected to be huge, but there could still be important noninstitutional barriers to migration. This article shows that misinformation about both the rewards and the risk associated with migration could be an important deterrent, even in a context where a large share of the population migrates for work. It is found that potential work migrants from Nepal to Malaysia and the Persian Gulf countries overestimate their earnings potential and the mortality rate abroad. Contrary to the prevalent belief among policymakers, the extent of overestimation of mortality rate far outweighs the extent of overestimation of earnings. At the estimated levels of elasticities, potential migrants would be more willing to migrate if they had accurate information about earnings and mortality risks abroad.

However, the reason for low migration in this study differs from the reasons found in other studies. Although misinformation on earnings has been documented previously in other contexts, most notably by McKenzie, Gibson, and Stillman (2013), misinformation on the risks of migration has not. The findings of this article suggest that information frictions, particularly concerning risks that workers face abroad, could suppress migration substantially. Failing to take these into account could lead researchers to estimate high (fixed) costs of migration. In this regard, the estimated costs of migration have to be interpreted not only in monetary and psychic terms but also in terms of perceived costs stemming from misinformation on earnings and, more importantly, risks.

Furthermore, in conjunction with the findings of Shrestha (2019), this article shows that misinformation on mortality rate may arise because of fallacious inference by potential migrants. While Shrestha (2019) found that potential migrants seem to drastically update their beliefs about mortality rate in response to an actual death of a migrant, this article shows that even in such cases there is room for simple information intervention to change the priors of potential migrants.

27 In terms of magnitude, these estimates are generally lower than the estimates for the United States (Viscusi and Aldy 2003; Cropper, Hammitt, and Robinson 2011). Estimates from developing countries are rare and can vary widely in magnitude, ranging from under US$1,000 to US$0.9 million (Kremer et al. 2011; Leòn and Miguel 2017).

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