Effects of Emigration on Rural Labor Markets

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Abstract

Rural to urban migration is integral to scholarship on structural transformation and economic development, but there is little evidence on how out-migration transforms the rural labor market. We offer to subsidize transport costs for 5792 potential seasonal migrants in Bangladesh, randomly varying the proportion of landless agricultural workers across 133 villages induced to move, to generate labor supply shocks of different magnitudes in different villages. We use this variation coupled with a general equilibrium model to document spillover effects on the village labor market. The decision to migrate is a strategic complement: A larger number of simultaneous migration offers in the village increases the likelihood that each individual takes up the offer, and induces those connected to offer recipients to also migrate. The 35% emigration rate in control villages increases to 42% in lower intensity villages, and to 66% with the higher density of offers. This increases the male agricultural wage rate in the village with an elasticity of about 0.2. Migration offers lead to large increases in income earned at the destination, but also increases income earned at home due to the increase in the wage rate and in available work hours. The wage bill for agricultural employers increases, which reduces their profit, with no significant change in yield. There is not much intra-household substitution in labor supply. The primary worker earns more when he returns home from the city during weeks in which many of his village co-residents were induced to move. Although most of the migration income is consumed, there is no systematic effect food prices, suggesting that food markets are better integrated than labor markets across villages. Seasonal migration generates both direct and indirect spillover benefits on the origin economies.

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1. Introduction

A shift in labor from rural to urban areas has been integral part of the process of economic development, and central to theories of long-run growth and structural transformation (Lewis 1954, Harris and Todaro 1970). Migration marked American agricultural development in the 19th century, Chinese development in the late 20th century, and has been a feature of the growth path of virtually every developing country (Taylor and Martin 2001). Understanding the causes and consequences of mobility – both for the migrant, and for the broader rural society – are therefore central to understanding development.

A modern literature links migration to development by carefully documenting that workers are more productive in cities, both within developed (Glaeser and Mare 2001) and developing (Gollin et al 2001) economies.[1] The accompanying empirical literature has largely focused on the benefits of migration to the migrant and his immediate family (e.g. McKenzie et al 2010, Garlick et al 2016), but not the spillover effects on the broader rural economy that are surely central to the links between migration and development. Many scholars have theorized that migration "may deprive source regions of critically needed human capital," (Greenwood 1997), "increase rural poverty and income inequality," (Connell 1981), but generations of review articles (e.g. Lucas 1997, Foster and Rosenzweig 2008) lament the lack of evidence on these topics. This study attempts to fill that gap by conducting a field experiment in which we randomly vary the fraction of landless households in Bangladeshi villages that are induced to out-migrate temporarily, to generate labor supply shocks of varying magnitudes, and use those to study spillover effects on the rural economy.

[1] This is likely due to the benefits of agglomeration (Combes et al 2010). There is also evidence that cities speed up human capital accumulation, producing growth (and not just level) effects in productivity (Glaeser and Resseger 2010).

While social scientists and policymakers have noted the pervasiveness of rural-urban migration in both developed and developing societies[2], the facts that (a) most of this migration is internal rather than international[3], and (b) that much of the internal rural-urban movement is seasonal and circular in nature, are less well known. The rural-urban wage gap varies within the year due to crop cycles, and seasonal migration is one of the primary methods used by Indians (Banerjee and Duflo 2007) and Bangladeshis (Bryan et al 2014) to diversify income and cope with seasonality. Such seasonal fluctuations in rural labor productivity are widespread in Ethiopia (Dercon and Krishnan 2000), Thailand (Paxson 1993), Indonesia (Basu and Wong 201x), Malawi (Brune et al 2016) and Ghana (Banerjee et al 2015). Seasonal migration also appears to be more responsive to policy interventions and to changes in local labor market conditions than permanent migration (Imbert and Papp 2015).

Bryan et al (2014) encourage a sample of 1292 landless households in rural Bangladesh to migrate during the 2008 lean season using conditional transfers to cover the roundtrip travel cost to nearby cities, and show that migration significantly improves the consumption in induced households. That simple research design can only evaluate the direct effects of migration opportunities on beneficiary households, and does not answer questions about spillover effects on non-beneficiaries. We expand on that design in several ways during the 2014 lean season to study general equilibrium effects on the rural labor market, and in the process, provide a more comprehensive evaluation of a program to encourage migration.

[2] Long (1991) notes that over 6% of the US population migrates internally within a year, and about 20% of the population of US and Canada move over a 5-year interval. Long-run panel data from India and Bangladesh show that 23 percent of men left the village after 17–20 years (Foster and Rosenzweig 2008).

[3] There were 240 times as many internal migrants in China in 2001 as there were international migrants (Ping 2003), and 4.3 million people migrated internally in the 5 years leading up to the 1999 Vietnam census compared to only 300,000 international migrants (Ahn et al, 2003).

First, in addition to randomly assigning migration subsidies to an expanded sample of 5792 poor landless households, our design also randomly varies the *proportion* of the eligible population in the village receiving such offers, because that market-level variation is necessary to track general equilibrium effects on wages and prices. Second, we collect data from both households that receive the randomized offers as well as households that do not, to track spillover effects on the migration and labor supply choices of non-beneficiaries. Third, we collect high-frequency data on earnings and hours worked by week, by location, and by individual worker, to create a richer description of the effects of migration including intra-household adjustments in labor supply. Fourth, we collect data from employers in the village to study effects on market wages, labor costs and profits. Fifth, we collect price data from local shopkeepers to study equilibrium effects on goods market prices.

We develop a general equilibrium model of the village labor market with endogenous migration to organize our empirical results on migration, labor supply, earnings, wages and prices. While the prior literature has explored whether migration generates indirect benefits through risk sharing (Morten 2015, Munshi and Rosenzweig 2016, Meghir et al. 2016), no study estimates equilibrium effects on the village economy. Scholars have theorized that migration may increase rural poverty and income inequality (Connell 1981), or that it has "the effect of draining away from the rural areas, either temporarily or permanently, some of the strongest, most able, most energetic young men" (Hance 1970), but empirical evidence on these spillover issues is lacking.[4]

[4] Lipton (1980) counters that the departure of young men would not necessarily lower the productivity or earnings of those left behind. Pritchett (2006) shows using census data that agricultural, coal mining and cotton farming areas of the United States lost 27-37% of its population to emigration between 1930 and 1990, but the population exodus was not accompanied by any large decrease in absolute or relative income. Rempel and Lobdell (1978) informally argue that net remittances are too small to have much effect on enhancing rural productivity, and that remittances are generally consumed not invested. Other scholars (e.g. Ashraf et al 2015) have employed modern research methods to describe remittance behavior and use more rigorously, but have not attempted to tackle effects on the village economy.

We find that emigration generates a few different categories of spillovers. First, migration decisions are strategic complements: a larger number of simultaneous migration subsidy offers in a village increases each household's propensity to migrate. Much of the spillover benefit to non-beneficiaries stem from their own increased propensity to migrate when their neighbors receive subsidies. Second, although these induced migrants earn much more in nearby cities, the time spent away does not displace home income. On the contrary, the income that the family earns at home also increases, due to increases in both the equilibrium agricultural wage rate at home and in available works hours. We use individual-specific data to explore whether departure of the migrant induces other household members to supply more labor (Rosenzweig 1988), but find that the increase in home-income is mostly due to the primary worker earning more when he returns home from the city during weeks in which many of his village co-residents are away. Third, the increased agricultural wage rate increases the wage bill for employers and reduces their profit. Fourth, there are no systematic changes in food prices in the village, which suggests that food markets are spatially well integrated.

Our results carry several important implications for development theory and policy. First, the increase in the agricultural wage rate that we document implies that rural labor supply is not as elastic as labor surplus models (e.g. Lewis 1954) presumed. Second, the marginal product of labor in agrarian societies is highly seasonal. Models of rural labor markets should be augmented to account for seasonality, to provide better descriptions of the links between migration and rural development. Third, our results should encourage policymakers to re-think the various restrictions to internal mobility they have instituted under the guise of rural development policy (Oberai 1983). Anti-migration bias remains rampant in policy circles, and many governments, including China,

Indonesia, South Africa, have historically reacted to migration as if "it were an invasion to repel" (Simmons 1981). The large direct benefits for the migrant's family and indirect benefits for non-migrants competing in those same labor markets that we document suggest that this mode of thinking, and the associated restrictions imposed on migrants' transport, settlement and employment by policymakers, may be misguided. Concerns about emigration increasing rural poverty and inequality appear to be unfounded, at least in our context.

This paper also contributes more broadly to the burgeoning economics literature on program evaluation by developing an experimental and analytical framework that goes beyond estimation of direct effects on the treated population. Comprehensive evaluation requires consideration of general-equilibrium changes, especially if we are interested in assessing possible effects of programs when they are scaled up (Heckman, 1992; Rodrik, 2008; Acemoglu, 2010). For example, providing skills training to large numbers of beneficiaries (Banerjee *et al.* 2007; Blattman *et al.* 2014) may change skilled wages, or providing livestock assets on a large scale (Banerjee et al 2015, Bandiera *et al* 2015) may affect livestock prices. Randomized controlled trials examining aggregate effects of equilibrium price changes induced by programs implemented on a large scale are still rare[5], but our results suggest that these considerations might be important.

We describe the problem of seasonality and earlier research on seasonal migration in the next section. We develop a framework to organize our analysis of migration decisions and general

[5] One exception is Mobarak and Rosenzweig (2016), who use a general equilibrium model to study labor market effects of rainfall insurance. It is more common for RCTs to track non-market spillovers on the non-treated, including health externalities (Miguel and Kremer 2004), financial transfers (Angelucci and DeGiorgi 2009), and social learning (Kremer and Miguel 2007, Oster and Thornton 2012, Miller and Mobarak 2015). Crepon *et al.* 2012 and Muralidharan and Sundararaman (2013) study aggregate effects in relevant markets, but do not estimate price or (teacher) wage effects. Cortes (2008) is a non-experimental study exploring the price and wage effects of international migration.

equilibrium effects in Section 3. We describe the experiment and the data in Section 4, and present empirical results in Section 5.

2. Context

2.1 Background on Seasonality and Seasonal Migration

Globally, approximately 805 million people are food insecure (FAO 2016), of which about 600 million are rural residents. Estimated conservatively, half of these people—300 million of the world's rural poor—suffer from seasonal hunger (Devereux et al, 2009). In predominantly agrarian economies, seasonal deprivation often occurs between planting and harvest, while farmers have to wait for the crop to grow. Labor demand and wages are low during this period, and the prices of staples like rice tend to increase.

These two facts combine to produce a dire situation in the Rangpur region of Northern Bangladesh, where rice consumption drops dramatically during the lean season.[6] This is an annually repeating phenomenon known as "monga" in Bangladesh, and by other names in other agrarian societies around the world ("hungry season" in southern Africa (Beegle et al 2016), and "musim paceklik" in eastern Indonesia (Basu and Wong 2012)). The landless poor supplying agricultural labor on others' farms are especially affected when demand for agricultural labor falls. They constitute around 56% of the population in our sample area, and will be the target of the seasonal migration encouragement intervention that we design. Our sampling frame is representative of this

[6] Figure A.1 uses nationally representative Household Income and Expenditure Survey (HIES) data collected by the Bangladesh Bureau of Statistics to illustrate these facts. Figure A.2 shows the drop in labor hours and earning capacity in the agricultural sector during the pre-harvest lean season using a different data source (Khandker and Mahmud 2012).

landless population in the Rangpur region of Northern Bangladesh. According to the Bangladesh Bureau of Statistics, there are roughly 15.8 million such inhabitants in Rangpur (BBS, 2011).

According to anthropological accounts, nearby urban and peri-urban areas do not face the same seasonal downturns, and these locations offer low-skilled employment opportunities during that same period (Zug, 2006). This contrast suggests a seasonal labor misallocation, or a spatial mismatch between the location of jobs and the location of people during that particular season.

Inspired by these observations, Bryan et al (2014) conduct a randomized controlled trial to encourage landless households from the Rangpur region facing seasonal deprivation to migrate during the Monga period to nearby cities to find work. They document positive effects of migration on consumption, and then explore why these households were not already migrating. A conditional transfer of about $8.50-$11 (equivalent to the round-trip travel cost by bus) increases the seasonal migration rate in 2008 by 22%, increases consumption amongst the migrant's family members by 757 calories per person per day in 2008 on average, and also induces 9.2% of the treated households to re-migrate the following year.

Bryan et al (2014) show that the fact that these households were not already migrating in spite of these large consumption gains can be explained by a model in which people living very close to the margin of subsistence are unwilling to take on the risk of paying the cost of migration and sending a member away. Even a small chance that the costly migration fails to generate income could be catastrophic if the household faces a risk of falling below subsistence. Thus, uninsured risk creates a poverty trap in which the extreme poor fail to take advantage of migration opportunities that turn out to be profitable on average. A conditional transfer can address that constraint and create efficiency gains.

2.2 Potential Spillover Effects of Seasonal Migration

Bryan et al (2014) only focused on households that received migration subsidies, not the spillover effects on non-beneficiaries, or any general equilibrium changes associated with increased scale of emigration. Consideration of general equilibrium effects requires a fundamentally different, and more complicated, data collection and experimental strategy that we employ in this study.

To study market-level effects, the scale of our experiment is five times as large, and we further randomize the proportion of the village population induced to migrate. This design, coupled with data on both households that receive these offers and households that do not, and data from employers and grocers, allow us to report results on general equilibrium effects in labor and food markets. This has become a policy-relevant question, because implementers and funding agencies are advocating for and deploying seasonal migration subsidies in large scale as a social policy to counter seasonal poverty (Evidence Action 2016). Such scale up should be evaluated in terms of both direct and indirect effects.

3. Experiment and Data

The next two sub-sections set out the details of the experiment and the data collection. Figures 1 and 2 provide a visual account of the main features of the experiment and the type and timing of data collection.

3.1 Intervention

The basic form of our intervention was the offer of a cash grant worth Taka 1,000 ($13.00 USD) to rural households in northern Bangladesh to cover the round-trip cost of travel to nearby cities where there are job opportunities during the lean season. This is a conditional transfer, where

the subsidy is conditional on one person from the household agreeing to out-migrate during the lean season. As offers were made, we let households know that they may have a better chance of finding work outside of their village, but we did not offer to make any connections to employers. No requirement is imposed on who within the household has to migrate, or what city they have to go to. As in Bryan et al (2014), migration was carefully and strictly monitored by project staff to ensure adherence to the conditionality.

3.1.1 Sampling

The experiment was conducted in 133 randomly selected villages in Kurigram and Lalmonirhat districts of Rangpur. We first conducted village censuses to identify all households that would be "eligible" to receive this intervention in each of these villages. A household was deemed eligible if (1) it owns less than 0.5 acres of land, and (2) it reported back in 2008 that a member had experienced hunger (i.e., skipped meals) during the 2007 monga season. We focused on landownership because land is the most important component of wealth in rural Bangladesh, and it is easily measurable and verifiable. We used the second question on skipping meals to avoid professional, non-agricultural households (who may not own much land, but who are comparatively well off). Our census data suggests that about 57% of households in these villages were eligible to receive the intervention after applying these two criteria.

3.1.2 Random Assignment

We randomly assigned the 133 villages into three groups:

(a) Low Intensity – 48 villages where we targeted migration subsidies to roughly 14% of the eligible population.

(b) High Intensity – 47 villages where we targeted roughly 70% of the eligible population with migration subsidy offers.

(c) Control – 38 randomly selected villages where nobody is offered a migration subsidy.

The high vs low intensity design was chosen to generate significant variation in the size of the emigration shock, but the precise target (14% vs 70%) varied a little across villages within treatment arms. This is because our village population estimates were dated (from 2008) for most (100) villages, and imprecise in the 33 other villages, which made it difficult for us to precisely estimate the ratio (offers/eligible population) in each village.

The sample of 133 villages included the 100 villages that were part of the earlier Bryan et al (2014) experiment, but the majority of the households in our sample are new, and were not included in the earlier experiment. We show in Appendix Tables A2-A4 that participation in the earlier rounds of the experiment has no significant effect on migration decisions this year, and therefore does not materially affect the main results of this paper on the downstream effects of migration on income earned. Controlling for village level random assignment in the earlier rounds does not affect our results either.

Landless households are engaged in both agricultural and non-agricultural work. We had provided experimental instructions to target non-agricultural households first in some (randomly chosen) villages, and our randomization of low vs high intensity was stratified and perfectly balanced by this instruction. During implementation we learned that in reality most households supply labor to some form of agriculture. We show in Tables A2-A4 that the stratification had no effect on migration decisions, nor does it affect our estimates of the effect of treatment intensity on migration or income outcomes.

There were a total of 883 subsidy offers made in the 48 low-intensity villages, 4,881 subsidy offers made in the 47 high intensity villages. The total number of households resident in these 133 villages was 36,808.

3.1.3 Timing

We disbursed grants during the latter part of the monga season, in early November, 2014. Figure 2 provides a timeline of project activities. Ideally, seasonal migration subsidy offers should be made in September after the rice planting work is done, but our disbursement was delayed due to political disturbance in Bangladesh at that time. Despite this delay, we observe high overall take-up and migration during both the late Monga, and as well as some post-harvest migration after January. We will also report results on re-migration a year later, covering the full 2015-16 migration season.

3.1.4 Implementing Organizations

All of the implementation activities – the offers and marketing, grant disbursement, and monitoring to ensure adherence to the conditionality, were conducted by RDRS, a local NGO with a long history of engagement in Rangpur, and substantial presence in the region. RDRS runs a microfinance program among other poverty alleviation activities, and this expertise was useful to handle the disbursement of grants, and ensure recovery of funds in cases of non-compliance with the condition associated this grant.

Innovations for Poverty Action in Bangladesh (IPA-B) coordinated all research activities and was responsible for testing and fielding surveys, collecting, cleaning and maintaining data. They also monitored RDRS' implementation activities to ensure that they were conducted in accordance with the research protocol.

3.1.5 Protocol and Logistics

After the research team conducted the sampling and randomization, they provided RDRS staff a list of eligible households in the village and their treatment assignment, and RDRS staff are deployed to the village to implement the intervention. Staff members approach a specific household on their list and first verify that they satisfy the eligibility criteria. Then the household is offered the grant to migrate, and the conditionality is made explicit. The head of the household is told that it if it accepts the grant, one member must use it toward migration travel expenses, and that this will be monitored. Households were also informed that nearby areas may offer better chances of employment than their home village.

Once the conditions of the offer are explained clearly, the household is provided guidance on how to collect the grant funds from their local RDRS office. The staff member collects identification information from the household. If the beneficiary visited the RDRS office to collect the grant, an officer checked their ID before disbursing funds. The grant amount (1000 Taka) was large enough to cover the cost of a round trip bus ticket to nearby popular urban destinations, with some money left over for a few days of board and lodging.[7]

RDRS carefully monitored adherence to the conditionality. After funds disbursement, an RDRS officer visited the household to check whether someone had migrated or not. If no one had migrated at the time, the officer reminded the head of household that the grant he received was conditional on migration and if he would not migrate he would be required to return the funds. The officer made two more visits to the households that had failed to migrate, and requested that funds be returned in migration still had not taken place.

[7] We considered the possibility of providing bus tickets to migrants, but the logistics of contracting with multiple transport companies, and finding flexible means to match transporters to migrants were too daunting. Previous experience also suggested that it was possible to get beneficiaries to adhere to the migration condition, so we settled on cash transfers.

3.2 Data Collection

We conducted four separate types of surveys in 2014-15 to capture effects on the labor market choices, other household impacts, effects on employers, and effects on food prices. We conducted two additional surveys a year later (after the lean season in the following year) to capture longer-term persistent effects on households and employers in 2015-16. Figure 1 depicts sample sizes by experimental cell, Figure 2 lays out the timeline of data collection and intervention activities relative to the agricultural season.

3.2.1 High Frequency Labor Market Survey of Households

Soon after the travel grants were disbursed in November 2014, we started surveying 2294 households in both treatment and control villages about their wage and employment conditions. The survey was administered once every 10 days for six rounds starting on December 22, 2014. We therefore refer to this as the "High Frequency Origin Survey". The survey instrument asked respondents about labor market outcomes (income, time spent working, location, industry) and a brief set of questions on consumption (essential food and non-food items) and migrant remittances.

We focus on income and labor market outcomes given our interest in general equilibrium effects, in contrast to Bryan et al (2014), who largely focused on consumption to evaluate the direct effects of inducing migration. Income is generally thought to be more difficult to measure well in rural, agrarian areas of low income countries due to seasonal variation, multiplicity in sources of income, weekly variation in activities over the course of the agricultural cycle, self-employment and family employment (Deaton and Muellbauer 1982). This is why we engage in a very expensive method of surveying, visiting households six times on an almost weekly basis and asking about income-generation activities of all household members over only the previous week to minimize

recall bias. We also conduct the surveys during a narrow two-month window during which seasonal and employment variation is minimized. The surveys focus on landless households that have minimal self-employment or unpaid family employment on their own farm. This provides us with labor supply choices of all working individuals within each household, the location where they worked (inside the village or at migration destinations), and how much they earn on a daily basis.

This method of surveying produces some ancillary benefits. First, it allows us to track high-frequency movements back and forth between the village and the city. Many migrants travel for only 3-4 weeks at a time and engage in multiple trips during the season. We observe 1.6 trips per migrant on average in our data. Second, the technique also allows us to track intra-household substitutions in labor supply, because we collect data at the individual level. Third, it allows us to cross-validate the direct (income) effects of migration that we estimate, with the consumption outcomes Bryan et al (2014) collected using a completely different surveying method six years prior, but administered on a similar population chosen using the same sampling frame. The magnitudes of income and consumption effects need to be coherent. Fourth, we can also validate our income estimates from the high-frequency survey using income measures collected at the endline household survey we ourselves conduct a few months later. The endline survey, conducted on an overlapping sample of households, asked about migration experience and income during the same season, described in further detail below.

The high-frequency surveys were administered to 709 households that did not receive migration offers in treatment villages, in addition to 865 households that did. Our goal was to track whether offers to a certain sub-group of households lead others to migrate, and track any spillover income and employment effects on those households either at home or at the destination.

3.2.2 Food Price Data: High Frequency Survey of Shopkeepers

We pair the brief consumption module in the high-frequency survey described above with a survey of shopkeepers (i.e. grocery store owners) that was administered simultaneously, in order to collect prices for the same food items that the consumption module asked households about. We collected data on the prices of major food items, including rice, wheat, pulses, edible oil, meat, fish, eggs, milk, salt and sugar. These data allow us to explore whether encouraging migration at large scale in a village (and the extra income that generates) leads to a general equilibrium effects on food markets. It also allows us to convert the food consumption effects to monetary values.

3.2.3 Endline Survey

Next, we conducted a detailed endline survey of 3,602 households during April 2015, before the next rice planting season starts. Figure 1 displays the sample breakdown across treatment arms and across types of households (those offered grants and those who were not). This endline survey collected a broader set of information on migration and other socio-economic outcomes that were not sensible or possible to ask repeatedly on a weekly basis, as in the high frequency survey. Core modules focused on collecting detailed information on the migration experience, including number of members who migrated, timing of migration events and destinations. The survey also delved into income generated by households (especially from migration), behavior and attitude changes, risk coping, credit and savings.

3.2.4 Employer Survey

To measure impacts on the demand-side of the labor market we conducted a survey of 1,099 employers across all villages on the wages they paid for employees around (and after) the time that we disbursed migration grants. We also asked employers to provide qualitative assessments of the

ease of finding and hiring workers during that period. We collected data on wages for multiple activities in both agricultural and non-agricultural sectors, separately for males and females hired (since almost all seasonal migrants are male). Unlike the high-frequency wage survey, the employer survey was retrospective, and asked employers to recall wage and employment conditions for every two-week period starting mid-October through the end of December 2014. We are confident of high quality recall because (a) our survey referred to wages paid for specific agricultural activities (e.g. for planting or for harvest), (b) employers tend to maintain records for their businesses, and (c) survey staff were trained to prompt employers with cues on types and timing of events (e.g. associating the timing of a given employment activity with a significant cultural or religious event).

3.2.5 Follow-up Survey 2016: Households

To study the longer-term behavior of households, we conducted a follow-up survey in 2016 enquiring about a number of items over the time period beginning mid-August 2015 through mid-August 2016. This survey included questions on migration – specifically, timing and number of episodes, income from migration and questions about resource-sharing by migrants – and the household's experience of hunger over the previous year. This was administered to the original endline sample from the 2014-2015 round of study and we were able to effectively re-interview 3,386 households (from the original 3,602).

3.2.6 Follow-up Survey 2016: Employers

The second component of our follow-up survey work targeted the demand-side of the labor market i.e. employers. We administered a labor demand and wage survey to agricultural employers to better understand the impacts of emigration on their enterprise and decisions. The employer labor demand and wage survey was administered to 649 employers across all 133 villages.

4. Theory

4.1 Offer Intensity and Migration

Our theory characterizes the response of rural labor markets to labor supply shocks (migration). We define a village as the local labor market in which two types of households interact:

a. Landless households that supply labor

b. Landed farmers that hire labor

Our intervention targeted landless households. In any given village, a proportion, x, of landless households was provided a travel grant, B. The proportion that received the grant was experimentally varied. A member of a landless household that receives the grant, B, decides to migrate if the value of migration is greater than wage income from the local labor market,

$$w^m + B - F_I - F_S(x) \geq w(x) \tag{4.1.1}$$

Where, w^m is wage at migration destination, B is the migration subsidy conditional on migration, F_I is the individual specific cost of migration, F_S is the cost of migration that can be shared with other migrants (hence a function of x) and w is the village wage. F_S can be interpreted as sharing risk as well, and both F_S and w can be influenced by x.

And for the remaining $(1 - x)$ households (those who did not receive the grant) decide to migrate if,

$$w^m - F_I - F_S(x) \geq w(x) \tag{4.1.2}$$

In the above, we assume that the individual cost of migration is distributed,

$$F_I \sim G(.) \tag{4.1.3}$$

The above set up suggests that for households that receive the grant (x), the probability of migration can be expressed as,

$$\Pr\left(F_I \leq w^m + B - F_S(x) - w(x)\right) = G(w^m + B - F_S(x) - w(x)) \quad (4.1.4)$$

And, similarly for the remaining $(1 - x)$ unincentivized households the probability of migration is,

$$\Pr\left(F_I \leq w^m - F_S(x) - w(x)\right) = G(w^m - F_S(x) - w(x)) \quad (4.1.4)$$

This yields an aggregate migration rate in a village, $M(x)$,

$$\mathrm{M}(x) = x \cdot \mathrm{G}(w^m + B - F_S(x) - w(x)) + (1 - x) \cdot \mathrm{G}(w^m - F_S(x) - w(x)) \quad (4.1.5)$$

First derivative of the above expression yields the change in migration rate as a function of our field experiment:

$$M'(x) = [\mathrm{G}(w^m + B) - \mathrm{G}(w^m)] + \left(-\frac{\partial F_S}{\partial x} - \frac{\partial w}{\partial x}\right) Z \quad [8] \quad (4.1.6)$$

For any $B > 0$, the first term on the right-hand side is positive and denotes the proportion of the population that are not infra-marginal (who are induced to migrate by the transfer *B*). This is the first order effect of providing *B* on the migration rate. The first part of the second term, $\frac{\partial F_S}{\partial x} < 0$, denotes how the shared cost of migration decreases as more people from the village are offered travel grants simultaneously. The second part of the second term, $\frac{\partial w}{\partial x}$, depends on the effects of B on inducing migration, and the resultant shift in local labor supply. The sign of the second term, $\left(-\frac{\partial F_S}{\partial x} - \frac{\partial w}{\partial x}\right)$, depends on whether having more migrants from the village reduces the cost of travel

[8] $Z = xg\left(w^m + B - F_S(x) - w(x)\right) + (1 - x)g\left(w^m - F_S(x) - w(x)\right)$ is a positive number.

(by permitting sharing) by more than the benefits of staying back at home to take advantage of the fact that wages will not fall by as much when many other people in the village emigrate. The relative size of these two factors is testable in our setting: We can compare how each individual receiving a migration subsidy (*B*) in the low- versus high- intensity village respond to the offer. The response to the exact same offer of *B* will be stronger in the high intensity village if $\left(-\frac{\partial F_S}{\partial x}\right)$ is larger in magnitude than $\left(\frac{\partial w}{\partial x}\right)$.

4.2 Income and Wage in Origin Labor Market

Suppose each landless household who has not migrated out has a Cobb-Douglas utility function,

$$U = L^{\alpha} C^{1-\alpha} \tag{4.2.1}$$

Where C denotes consumption goods measured in taka and L are hours of leisure. C is given by,

$$C = wh + V$$

Where h is labor hours supplied within the village, w is wage in the village, V is outside income including income from migration. The time constraint function is given by,

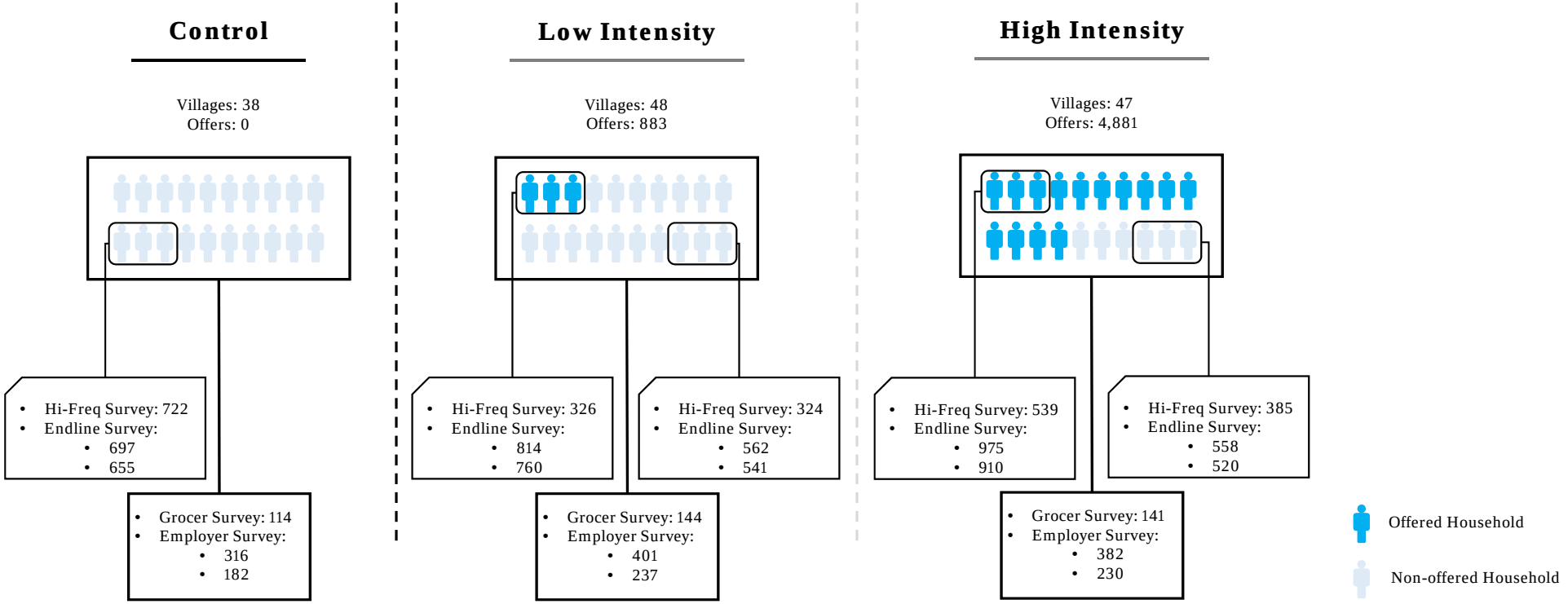
$$1 - h = L$$

The household maximizes expected utility subject to the budget and time constraint,

$$\underset{h}{\text{Max}}\, U = (1-h)^{\alpha}(wh + V)^{1-\alpha} \tag{4.2.2}$$

The FOC condition is,

Fig 1: Experimental Design to understand GE



Endline survey and the employer survey administered twice.

Fig 2: Intervention and Data Collection Calendar

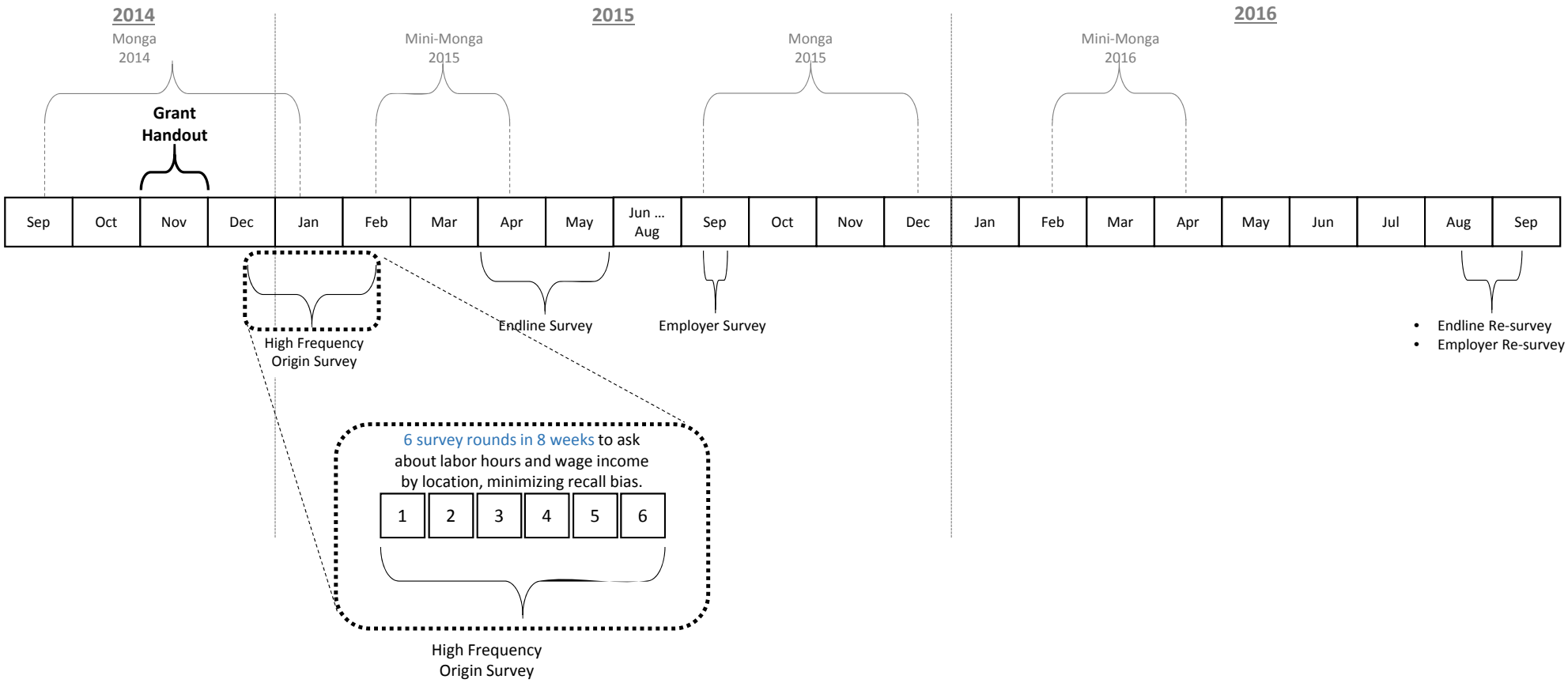


Table 1. Migration in 2014-15 and Remigration in 2015-16 in Response to Treatments in 2014

VARIABLES	(1) At least one migrant (2014-15)	(2) Number of migrants (2014-15)	(3) Migration episodes (2014-15)	(4) Re-migration in 2016 at least one migrant
Offered Grant in Low Intensity Treatment Village	0.248***	0.260***	0.390***	0.188***
	(0.0366)	(0.0409)	(0.0669)	(0.0341)
Not Offered Grant in Low Intensity Treatment Village	0.0333	0.0318	0.0660	0.0282
	(0.0388)	(0.0442)	(0.0730)	(0.0347)
Offered Grant in High Intensity Treatment Village	0.398***	0.415***	0.618***	0.293***
	(0.0333)	(0.0382)	(0.0636)	(0.0352)
Not Offered Grant in High Intensity Treatment Village	0.0965**	0.111**	0.123*	0.127***
	(0.0397)	(0.0463)	(0.0742)	(0.0371)
Mean in control	0.34	0.37	0.50	0.38
Observations	3,600	3,600	3,600	3,382
R-squared	0.14	0.12	0.12	0.09
Upazila FE	YES	YES	YES	YES

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The results in this table were generated using household level data from the endline survey.

The dependent variable in specification (1) is an indicator for whether the household had at least one migrant over the period September 15 2014 - April 30 2015. The dependent variable in specification (2) is the total number of unique migrants sent by the household over this period. The dependent variable in specification (3) is the total number of migration episodes (i.e. the total number of trips taken by all migrant members of a household) over this period. The dependent variable in specificaiton (4) is re-migration a year later (September 1 2015 - May 31 2016). No further incentives were provided that year, but we collected data to study longer term responses.

All specifications include Upazila fixed effects (an Upazila is an administrative unit that encompasses groups of villages in the sample; there are a total of 14 Upazilas across our sample of villages).

Table 2. Effect of Household's Network on Probability of Migrating in 2014-15

VARIABLES	(1) At least one migrant (2014-15)	(2) At least one migrant (2014-15)
Offered Grant in Low Intensity Treatment Village and Connected to Someone Offered	0.209*** -0.0444	0.191*** -0.0526
Offered Grant in Low Intensity Treatment Village and Partially Connected to Someone Offered		0.226*** (0.0522)
Offered Grant in Low Intensity Treatment Village and Not Connected to Someone Offered	0.208*** -0.0637	0.216*** -0.0636
Not Offered Grant in Low Intensity Treatment Village and Connected to Someone Offered	0.0991* -0.0556	0.122* -0.0678
Not Offered Grant in Low Intensity Treatment Village and Partially Connected to Someone Offered		0.0666 (0.0772)
Not Offered Grant in Low Intensity Treatment Village and Not Connected to Someone Offered	-0.0443 -0.137	-0.0473 -0.137
Offered Grant in High Intensity Treatment Village and Connected to Someone Offered	0.311*** -0.0589	0.344*** -0.0717
Offered Grant in High Intensity Treatment Village and Partially Connected to Someone Offered		0.249*** -0.0692
Offered Grant in High Intensity Treatment Village and Not Connected to Someone Offered	0.112 -0.374	
Not Offered Grant in High Intensity Treatment Village and Connected to Someone Offered	0.126** (0.0632)	0.156* (0.0833)
Not Offered Grant in High Intensity Treatment Village and Partially Connected to Someone Offered		0.0686 (0.0865)
Not Offered Grant in High Intensity Treatment Village and Not Connected to Someone Offered	-0.213 (0.23)	-0.173 (0.245)
Mean in control	0.33	0.33
Observations	998	994
Upazila FE	YES	YES

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The results in this table were generated using a combination of network data from 2013 and migration and treatment data from the 2014 endline survey. Estimations are at the household level.

The network data was generated by asking subject households to answer questions about each of 20 randomly selected households from the same village, including: whether the respondent household knows them at all; whether it knows them well; and whether they can rely upon those other households. The dependent variable in all specifications is the probability that a household had any member who migrated in 2014. The results shown are average marginal effects on a probit regression. Thus the coefficients represent the change in the probability that a household will migrate based on the treatment arm and connection to other households.

Specification (1) shows results for when households are "connected" to at least one other household in the village where "connected" simply means knowing another household. In specification (2) "connected" means knowing another household well enough to rely on them and "partially connected" means knowing another household, but not well, and "not connected" means not knowing the other household at all.

"The independent variables intersect the network data with the treatment data, thus placing households in groups according to two criteria: whether they themselves were offered a subsidy to migrate, and whether they know households that were offered a subsidy. Thus, for instance, "Offered Grant in Low Intensity Treatment Village and Connected to Someone Offered" refers to a household in a low intensity village that was made a migration grant offer and knows another household with someone who was also offered a grant.

All specifications include Upazila fixed effects.

Table 3. Accomodation Sharing and Traveling with Companions Among Migrants (2015-16)

VARIABLE	Number of campanions with whom sharing accomodation	Number of travel companions
Offered Grant in Low Intensity	-0.123	0.586
Treatment Village	(0.778)	(0.583)
Not Offered Grant in Low Intensity	-0.164	1.007
Treatment Village	(1.017)	(0.642)
Offered Grant in High Intensity	1.293	2.819***
Treatment Village	(0.892)	(0.708)
Not Offered Grant in High Intensity	-0.286	2.434***
Treatment Village	(0.781)	(0.641)
Mean in control	10.12	6.17
Observations	1,678	1,756
R-squared	0.052	0.091
Upazila FE	YES	YES

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The results in this table were generated using household level data from the 2015-16 follow-up survey.

Both specifications use the subset of the sample that migrated in the year subsequent to the intervention-year i.e. the 1,793 households that sent at least one migrant during the period September 1 2015 - May 31 2016. The dependent variable in specification (1) is the number of companions with whom a migrant shared their accomodation during this period. The dependent variable in specification (2) is the number of companions with whom a migrant traveled during this period.

All specifications include Upazila fixed effects.

Table 4. Population Movements in Aggregate

VARIABLES	(1) Proportion of Landless/Eligible Households Migrated	(2) Landless/Eligible Migration Rate as a Fraction of Total Households in the Village	(3) Proportion of Landless/Eligible Households Migrated	(4) Landless/Eligible Migration Rate as a Fraction of Total Households in the Village	(6) TotalMigrated_int	(5) Proportion of Landless/Eligible Households that Re-Migrated in 2015-16
Low Intensity Treatment Village	0.0697*	0.0317	0.0759**	0.0443*	0.0287	0.0596*
	(0.0363)	(0.0273)	(0.0380)	(0.0258)	(0.0276)	(0.0304)
High Intensity Treatment Village	0.313***	0.120***	0.291***	0.162***	0.161***	0.206***
	(0.0368)	(0.0278)	(0.0402)	(0.0274)	(0.0282)	(0.0319)
Mean in control	0.35	0.21	0.35	0.21	)703217951637:	0.36
Observations	132	126	116	110	100	111
R-squared	0.59	0.49	0.59	0.59	0.602	0.59
Sample	FULL	FULL	PARTIAL	PARTIAL	COMPACT	PARTIAL

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The results were generated using a combination of the 2014-15 endline survey and the 2014-15 employer survey.

The dependent variable in specification (1) is the proportion of landless households eligible for a subsidy in each village that migrated at any point over the period September 15, 2014 - April 30, 2015. The number of eligible households in a village (the denominator) computed based on census data collected in 2008. The formula we used to compute the fractions accounts for the fact that differing fractions of offered and non-offered households were sampled, and we know the sampling probabilities. Specification (2) changes the denominator to "number of total households in the village" also reported in the census data. Note that we do not know the migration rate among landed/ineligible households, so the dependent variable is smaller than the total fraction of the village population that out-migrates.

Specifications (3) and (4) limit the sample to villages where we have the highest quality listing data on numbers of total and eligible landless households in the village (which are the denominators of the dep. vars.). All specifications are at the village level. All specifications include Upazila fixed effects.

Table 5. Treatment Effects on Migration Income, Labor Income and Profits at Home, and Savings using Endline Survey

VARIABLES	(1) Income from migration	(2) Savings	(3) All non-migration income and profits	(4) Non-migration labor market income	(5) All Income and Profits (inclusive of migration income)	(6) All labor market income (wages earned at home and destinations)	(7) Income from Re-migration in 2015-16
Offered Grant in Low Intensity Treatment Village	3,537***	16.71	-920.2	-747.9	3,200***	2,706***	5,392***
	(819.6)	(201.1)	(999.6)	(783.3)	(1,033)	(995.3)	(1,359)
Not Offered Grant in Low Intensity Treatment Village	1,349	-91.24	-705.2	523.9	978.7	2,339**	241.6
	(860.5)	(221.6)	(924.5)	(751.2)	(986.1)	(993.2)	(1,196)
Offered Grant in High Intensity Treatment Village	4,519***	-15.26	-2,628***	-1,599**	2,440***	3,114***	7,500***
	(747.3)	(205.4)	(891.6)	(701.6)	(919.3)	(910.2)	(1,380)
Not Offered Grant in High Intensity Treatment Village	1,463*	116.6	-1,512*	517.2	462.5	2,169**	3,867***
	(784.0)	(271.4)	(910.9)	(697.9)	(962.8)	(961.9)	(1,370)
Mean in control	5,829	5,829	18,758	11,776	24,231	17,880	9,204
Observations	3,281	3,600	3,600	3,600	3,281	3,281	3,382

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The results in this table use household level data from the 2014-15 endline survey. The dependent variable in specification (1) is gross income from migration that migrants generated during the period September 15 2014 - April 30 2015. There are a few massive outliers in reported income, and all columns therefore trim out the extreme 1% of values for the dependent variable (top and bottom). The dependent variable in specification (2) is savings reported by the household, accruing over the same period. All specifications include Upazila fixed effects.

Table 6. Treatment Effects on Labor Income and Working Days in the Village and at Migration Destinations (using High Frequency Labor Surveys)

Panel A. Full Sample

VARIABLES	(1) Income	(2) Income (home)	(3) Income (away)	(4) Income per capita	(5) Days worked	(6) Days worked (home)	(7) Days worked (away)	(8) Daily income	(9) Daily income (home)	(10) Daily income (away)	(11) Food expenditure per capita
Offered Grant in Low Intensity	377.5	226.1	184.7	8.409	1.330	1.077	0.230	6.374	2.404	16.75**	8.991**
Treatment Village	(314.8)	(245.3)	(317.7)	(10.29)	(1.388)	(1.331)	(1.270)	(4.136)	(3.758)	(7.435)	(3.953)
Not Offered Grant in Low Intensity	37.79	269.2	-214.1	9.853	0.236	1.159	-1.034	2.908	2.910	10.93	-1.288
Treatment Village	(309.9)	(223.9)	(297.4)	(10.10)	(1.483)	(1.316)	(1.201)	(4.579)	(3.901)	(8.367)	(4.783)
Offered Grant in High Intensity	1,263***	199.4	1,049***	7.984	4.839***	0.425	4.367***	10.31***	5.520*	7.159	1.231
Treatment Village	(359.5)	(227.9)	(383.7)	(10.14)	(1.637)	(1.287)	(1.638)	(3.726)	(3.222)	(5.377)	(4.926)
Not Offered Grant in High Intensity	419.4	-15.13	460.3	7.105	1.652	-0.316	2.002	3.521	0.275	2.223	5.922
Treatment Village	(342.9)	(261.9)	(356.1)	(11.33)	(1.529)	(1.358)	(1.543)	(3.630)	(3.536)	(6.804)	(4.848)
Mean in control	6,760	4,429	2,279	186	37	27	10	180	166	229	201
Observations	2,293	2,293	2,293	13,637	2,293	2,293	2,293	2,276	2,115	988	13,637

Panel B. Partial Sample (117 Villages with Higher Quality Data on Population)

	Income	Income (home)	Income (away)	Income per capita	Days worked	Days worked (home)	Days worked (away)	Daily income	Daily income (home)	Daily income (away)	Food expenditure per capita
Offered Grant in Low Intensity	411.9	273.4	171.1	13.18	1.628	1.461	0.178	5.219	1.973	15.32**	8.178**
Treatment Village	(325.4)	(260.8)	(340.3)	(10.85)	(1.447)	(1.454)	(1.368)	(3.935)	(3.850)	(6.918)	(3.959)
Not Offered Grant in Low Intensity	87.33	282.1	-184.1	9.501	0.816	1.674	-0.999	1.677	0.341	11.91	-2.124
Treatment Village	(318.6)	(239.1)	(300.0)	(10.63)	(1.520)	(1.417)	(1.213)	(4.811)	(4.057)	(8.157)	(4.876)
Offered Grant in High Intensity	1,401***	265.2	1,094**	11.74	5.830***	0.962	4.764**	8.276**	3.835	6.136	4.681
Treatment Village	(417.3)	(242.0)	(458.1)	(11.32)	(1.849)	(1.339)	(1.959)	(3.696)	(3.378)	(5.567)	(5.077)
Not Offered Grant in High Intensity	618.9*	106.8	534.8	13.27	2.619*	0.457	2.181	3.686	0.691	4.978	4.719
Treatment Village	(345.3)	(268.4)	(384.7)	(11.34)	(1.529)	(1.365)	(1.675)	(3.795)	(3.636)	(6.717)	(5.142)
Mean in control	6760.45	4429.54	2279.07	186.32	36.85	26.89	9.83	180.48	165.61	229.10	201.92
Observations	2,032	2,032	2,032	12,086	2,032	2,032	2,032	2,016	1,878	864	12,086

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The results in this table were generated using household level data from the high frequency survey which interviewed households 6 times between 22nd December 2014 to 28th February 2015.

The dependent variable in specification (1) is total income (in takas) generated by the household i.e. income generated from participation in the origin and the away (i.e. migrant) labor markets for the period covered by the high frequency survey. The dependent variables in specifications (2) and (3) are income (in takas) generated by the household from participation only in the origin labor market and income (in takas) generated by the household from participation only in the away (i.e. migrant) labor market respectively for the period covered by the high frequency survey. The dependent variable in specification (4) is similar to specification (2) but normalized by number of household members i.e. income (in takas) generated by the household from participation only in the origin labor market divided by total number of household members for the period covered by the high frequency survey. The dependent variable in specification (5) is the total number of days that working members of the household participated in the origin and the away (i.e. migrant) labor markets for the period covered by the high frequency survey. The dependent variables in specifications (6) and (7) are number of days that working members of the household participated only in the origin labor market and only in the away (i.e. migrant) labor market respectively, for the period covered by the high frequency survey. The dependent variable in specification (8) is the average daily wage rate across home and away labor markets, computed based on the reported income and days worked by the surveyed household for the period covered by the high frequency survey. The dependent variable in specification (9) is the average daily wage rate in the home labor market, computed based on the reported income and days worked by the surveyed household for the period covered by the high frequency survey. The dependent variable in specification (10) is the average daily wage rate in the away labor market, computed based on the reported income and days worked by the surveyed household for the period covered by the high frequency survey. The dependent variable in specification (11) is the total expenditure on food consumed by the household normalized by number of household members i.e. food consumption by the household divided by total number of household members for the period covered by the high frequency survey.

Daily Income can be computed only for households that have positive number of days worked at that location.

All specifications include Upazila fixed effects.

Table 7. Treatment Effects on Employment Outcomes using Village-Level Treatment Indicators (using High Frequency Labor Surveys)

VARIABLES	(1) Income	(2) Income (home)	(3) Income (away)	(4) Income per capita	(5) Days worked	(6) Days worked (home)	(7) Days worked (away)	(8) Daily income	(9) Daily income (home)	(10) Daily income (away)	(11) Food expenditure per capita
Low Intensity Treatment Village	206.8	247.2	-14.97	9.125	0.779	1.117	-0.404	4.635	2.651	14.09**	3.895
	(272.6)	(198.6)	(271.5)	(9.091)	(1.216)	(1.144)	(1.103)	(3.935)	(3.412)	(6.307)	(4.095)
High Intensity Treatment Village	912.2***	110.3	803.9**	7.620	3.513**	0.117	3.382**	7.489**	3.319	5.337	3.169
	(307.9)	(215.2)	(331.3)	(9.488)	(1.425)	(1.168)	(1.421)	(3.261)	(2.980)	(5.012)	(4.394)
Mean in control	6,760.45	4,429.54	2,279.07	186.32	36.85	26.89	9.83	180.48	165.61	229.10	201.92
Observations	2,293	2,293	2,293	13,637	2,293	2,293	2,293	2,276	2,115	988	13,637
Upazila FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The results in this table were generated using household level data from the high frequency survey which interviewed households 6 times between 22nd December 2014 to 28th February 2015. These results complement the results in table 7. The dependent variables are the same as in table 7 but the independent variables indicate village level treatment assignment. The sample includes all households surveyed in the high frequency survey i.e. households offered the travel grant and those not offered the grant.

The dependent variable in specification (1) is total income (in takas) generated by the household i.e. income generated from participation in the origin and the away (i.e. migrant) labor markets for the period covered by the high frequency survey. The dependent variables in specifications (2) and (3) are income (in takas) generated by the household from participation only in the origin labor market and income (in takas) generated by the household from participation only in the away (i.e. migrant) labor market respectively for the period covered by the high frequency survey. The dependent variable in specification (4) is similar to specification (2) but normalized by number of household members i.e. income (in takas) generated by the household from participation only in the origin labor market divided by total number of household members for the period covered by the high frequency survey. The dependent variable in specification (5) is the total number of days that working members of the household participated in the origin and the away (i.e. migrant) labor markets for the period covered by the high frequency survey. The dependent variables in specifications (6) and (7) are number of days that working members of the household participated only in the origin labor market and only in the away (i.e. migrant) labor market respectively, for the period covered by the high frequency survey. The dependent variable in specification (8) is the average daily wage rate across home and away labor markets, computed based on the reported income and days worked by the surveyed household for the period covered by the high frequency survey. The dependent variable in specification (9) is the average daily wage rate in the home labor market, computed based on the reported income and days worked by the surveyed household for the period covered by the high frequency survey. The dependent variable in specification (10) is the total expenditure on food consumed by the household normalized by number of household members i.e. food consumption by the household divided by total number of household members for the period covered by the high frequency survey.

All specifications include Upazila fixed effects.

Table 8. LATE (IV) Estimates to Study the Differential Effects of Migration from Low-Intensity and High-Intensity Villages

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Migration Income	Migration Income	Savings	Savings	All Income and Profits (inclusive of migration income)	All Income and Profits (inclusive of migration income)	All labor market income (wages earned at home and destinations)	All labor market income (wages earned at home and destinations)
Migrated	16,157***	12,906***	-247.1	151.2	13,734**	7,030**	16,134***	10,318***
	(2,328)	(1,621)	(1,201)	(690.9)	(5,936)	(2,999)	(5,556)	(2,804)
Observations	1,828	2,052	2,069	2,226	1,828	2,052	1,828	2,052
R-squared	0.479	0.447	0.008	0.021	0.006	0.045	0.099	0.145
Sample	Only Control and Low-Intensity	Only Control and High-Intensity	Only Control and Low-Intensity	Only Control and high-Intensity	Only Control and Low-Intensity	Only Control and High-Intensity	Only Control and Low-Intensity	Only Control and high-Intensity
1st-Stage	Low-Intensity	High-Intensity	Low-Intensity	High-Intensity	Low-Intensity	High-Intensity	Low-Intensity	High-Intensity
First stage partial R-squared	0.02	0.06	0.02	0.07	0.02	0.06	0.02	0.06
First stage F-test	15.70	55.56	19.50	79.30	15.70	55.56	15.70	55.56
First stage P-value	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The results in this table show IV specifications using household level data from the endline survey.

The dependent variable in specifications (1) and (2) are gross migration income; in specifications (3) and (4) are savings; in specifications (5) and (6) are all income (i.e. income from migration, income from home-labor market participation and own-enterprise profits); and, are all labor market income (i.e. income from migration and income from home-labor market participation) reported by the household, accruing over the period September 15 2014 - April 30 2015. Specifications (1), (3), (5) and (7) restrict the analysis to only the control and low-intensity arms; specifications (2), (4), (6) and (8) restrict the analysis to only the control and high-intensity arms. There are a few massive outliers in reported income, and all columns therefore trim out the extreme 1% of values for the dependent variable (top and bottom).

The dependent variable is regressed on a binary variable "Migrated" that takes on the value 1 if at least one member of household migrated during the relevant period and zero otherwise. This variable was instrumented in a 2SLS regression using assignment to low-intensity or high-intensity treatment (as indicated). All specifications include Upazila fixed effects.

Table 9. LATE (IV) Estimates of the Effects of Migration on Labor Income and Days Worked in the Village and at Migration Destinations (using High Frequency Labor Surveys)

Panel A. Full Sample (Both High and Low Intensity Treatment Villages compared to Control)

VARIABLES	(1) Income	(2) Income (home)	(3) Income (away)	(4) Income per capita	(5) Days worked	(6) Days worked (home)	(7) Days worked (away)	(8) Daily income	(9) Daily income (home)	(10) Food expenditure per capita
Migrated	8,255***	555.3	7,549***	33.18	31.54***	-0.446	32.01***	59.32***	26.24	12.59
	(1,748)	(1,483)	(1,299)	(95.25)	(9.220)	(7.888)	(5.906)	(20.41)	(21.77)	(43.43)
Observations	2,293	2,293	2,293	13,637	2,293	2,293	2,293	2,276	2,115	13,637
First stage partial R-squared	0.0141	0.0141	0.0141	0.00869	0.0141	0.0141	0.0141	0.0137	0.0131	0.00869
First stage F-test	4	4	4	3	4	4	4	3	3	3
First stage P-value	0	0	0	0	0	0	0	0	0	0

Panel B. Only High Intensity Treatment Villages Compared to Control Villages.

Migrated	9,135***	1,787	7,171***	93.19	34.15***	3.971	29.67***	80.05***	51.16*	11.84
	(2,452)	(1,881)	(1,567)	(116.1)	(11.89)	(9.678)	(6.953)	(24.78)	(29.44)	(48.20)
Observations	1,644	1,644	1,644	9,769	1,644	1,644	1,644	1,629	1,516	9,769
First stage partial R-squared	0.0141	0.0141	0.0141	0.00835	0.0141	0.0141	0.0141	0.0138	0.0119	0.00835
First stage F-test	5.636	5.636	5.636	5.167	5.636	5.636	5.636	5.217	4.500	5.167
First stage P-value	0	0	0	0	0	0	0	0	0	0

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The results in this table show a set of IV specifications that were generated using household level data from the high frequency survey which interviewed households 6 times between 22nd December 2014 to 28th February 2015. The data across six rounds of surveys are pooled. Labor income is measured as total income (in takas) generated by all household members participating in the labor market in their the origin village or away from the village for the period covered by the high frequency origin survey (HFOS). Specifications (2) and (3) break down income by location. The HFOS also allows to track the number of working days for all household members. The "average daily income" divides home earnings by number of days worked at home, and approximates a wage rate earned by household members working in the home village. HFOS also added just a few questions on food consumption in a few aggregate categories, and we report effects on the total expenditure on food per capita in the last column.

"Migrated", the RHS variable is binary, and =1 if at least one member of household migrated during the entire period covered by HFOS. This variable is instrumented in a 2SLS regression using assignment to treatment (High and Low Intensity, Offered and Non-offered). All specifications include Upazila fixed effects.

Table Food Security 1. LATE(IV) Estimates of the Effects of Migration on Frequency of Meal Downsizing in the Village During Lean and Non-Lean Seasons

Panel A. Both High and Low Intensity Treatment Villages compared to Control

VARIABLES	(1) Monthly Frequency of downsizing meals, Average Across Lean Season Months (August-January)	(2) Monthly Frequency of downsizing meals, Average Across Non-Lean Season Months (January-August)	(3) Monthly Frequency of downsizing meals, Average Across Lean Season Months (August-January)	(4) Monthly Frequency of downsizing meals, Average Across Non-Lean Season Months (January-August)	(5) Monthly Frequency of downsizing meals, Average Across Lean Season Months (August-January)	(6) Monthly Frequency of downsizing meals, Average Across Non-Lean Season Months (January-August)
Share of eligible villagers who migrated in 2015-2016	-0.316	-0.388	-0.644*	-0.677*	-0.852**	-0.778**
	(0.284)	(0.286)	(0.373)	(0.369)	(0.376)	(0.388)
Observations	3,088	3,191	2,448	2,540	2,156	2,244
R-squared	0.073	0.049	0.085	0.047	0.081	0.047
Mean	0.919	0.573	0.92	0.586	0.921	0.586
Upazila FE	YES	YES	YES	YES	YES	YES
Sample	All 133 villages	All 133 villages	117 villages	117 villages	100 villages	100 villages
First stage partial R-squared	0.35	0.35	0.327	0.33	0.32	0.32
First stage F-test	29.28	30.28	26.83	27.6	23.37	24.15
First stage P-value	0.00	0.00	0.00	0.00	0.00	0.00

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
The results in this table show a set of IV specifications that were generated using village level data from the 2016 follow-up survey. The independent variable throughout is the share of eligible villagers who migrated in 2015-2016, instrumented by treatment assignment to high- or low-intensity villages (two excluded dummy variables).

Food insecurity is measured as follows. For every given month from mid-August 2015 to midAugust 2016, each household was asked how many days in that month any member of that household had to cut down on meal portions or number of meals in a day: rarely (0-5 days) or more than that (6 days to the whole month). In our data, rarely is marked as "0" and more than that as "1". Averaged across each village, this gives a village-level measure of food insecurity per month, where a higher score (from 0 to 1) represents more food insecurity (i.e. more hunger). For these tables, the monthly numbers were averaged across the lean months (mid-August 2015-mid-January 2016) and nonlean months (mid-January 2016 to mid-August 2016), giving a measure of food insecurity in each village across these periods. Columns (1), (3) and (5) represent the lean month averages while (2), (4) and (6) represent the nonlean averages. Columns (1) and (2) use the full sample of villages, columns (3) and (4) use the partial sample, where data on village population is of higher quality, and columns (5) and (6) use the compact sample, which is the subset of villages for which we have the most consistent and precise data.

Panel B restricts the sample to the high intensity and control villages only.

All specifications include Upazila fixed effects.

Table Food Security 2. LATE(IV) Estimates of the Effects of Migration on Various Food Security Variables in the Village

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	How Many Times in the Last Week Did Household Members:									How Many Times in the Last 12 Months Did Household Members:
VARIABLES	Worry About Having Enough Food?	Eat Less Preferred Food?	Limit Variety of Foods?	Limit Meal Portion Sizes?	Reduce Number of Daily Meals?	Go 24 Hours Without Eating?	Have no Food at All in the House?	Go to Sleep Hungry?	Borrow Food from Others or on Credit?	Sell an Animal to Buy Food?
Share of eligible villagers who migrated in 2015-2016	-1.508*	-1.022*	-0.00403	-0.964	-0.694	-0.0428	-0.0501	-0.255	0.885	0.875
	(0.831)	(0.567)	(0.602)	(0.598)	(0.527)	(0.066)	(0.290)	(0.354)	(0.570)	(0.729)
Observations	2679	2679	2679	2679	2679	2679	2671	2679	2679	1122
R-squared	0.089	0.124	0.124	0.071	0.067	0.007	0.028	0.037	0.044	0.024
Mean	2.884	2.814	2.843	2.503	2.133	0.038	0.397	0.589	1.829	2.23
First stage partial R-squared	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.346
First stage F-test	26.28	26.28	26.28	26.28	26.28	26.28	26.24	26.28	26.28	28.18
First stage P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
The results in this table show a set of IV specifications that were generated using village level data from the 2016 follow-up survey. The independent variable throughout is the share of eligible villagers who migrated in 2015-2016, instrumented by treatment assignment to high- or low-intensity villages (two excluded dummy variables).

Each column represents the village-level average of answers to the questions shown in the columns, where "0" represents a "no" and "1" represents a "yes".

All these specifications use the partial sample of 117 villages, for which we have higher-quality data on village population (the denominator on the RHS).

All specifications include Upazila fixed effects.

Table 10. LATE (IV) Estimates of the Effects of Emigration on Wages Paid in the Home Village as Reported by Employers

VARIABLES	(1) Male wage for agricultural work	(2) Male wage for non-agricultural work	(4) Ln(Male wage)	(3) Log of male agricultural wage	(4) Log of male non-agricultural wage	(5) Log of female agricultural wage	(6) Log of female non-agricultural wage	(7) Log of male agricultural wage	(8) Log of male non-agricultural wage
Proportion Eligible Migrated	50.77*	-0.425	0.172	0.265*	0.0619	0.224	0.362	0.178*	0.00664
	(30.23)	(36.30)	(0.122)	(0.137)	(0.151)	(0.216)	(0.245)	(0.107)	(0.110)
Observations	333	239	477	333	239	187	45	380	268
1st-Stage	High Intensity	High Intensity	High Intensity	High Intensity	High Intensity	High Intensity	High Intensity	High Intensity	High Intensity
First stage partial R-squared	0.447	0.476	0.463	0.447	0.476	0.439	0.645	0.506	0.512
First stage F-test	48.09	44.11	53.06	48.09	44.11	25.97	24.06	66.24	47.13
First stage P-value	1.75e-09	9.53e-09	3.30e-10	1.75e-09	9.53e-09	6.37e-06	5.29e-05	0	2.64e-09
Sample	Partial	Partial	Partial	Partial	Partial	Partial	Partial	Full	Full

Standard errors clustered at the village level reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Uses data from the employer survey which interviewed agricultural and non-agricultural employers across all villages in the sample, and asked about wages paid during the period of out-migration. The survey asked separately about male and female wages, and about agricultural and non-agricultural wages.

The dependent variable is regressed on the proportion of the eligible population that migrated in each village. This was constructed as a ratio of total migrant households in a village and total eligible households in a village. The number of eligible households was available based on previous census data. The total number of migrants was constructed using the same data and formulas used in Table 1. The independent variable was intrumented with village level assignment to the high intensity treatment.

All specifications include Upazila fixed effects.

Table 11 Treatment Effects on Employment Outcomes Restricting Only to Contributions Made by Non-primary Workers (using High Frequency Labor Surveys)

VARIABLES	(1) Income	(2) Income (home)	(3) Income (away)	(4) Days worked	(5) Days worked (home)	(6) Days worked (away)	(7) Daily income	(8) Daily income (home)	(9) Daily income (away)
Low Intensity	-318.7	14.67	-351.8**	-1.252	0.221	-1.615***	-11.44	-5.752	12.10
Treatment Village	(203.4)	(101.6)	(152.3)	(1.051)	(0.763)	(0.593)	(8.483)	(7.963)	(13.28)
High Intensity	136.9	-18.84	133.3	0.574	-0.170	0.631	-6.091	-8.388	0.0824
Treatment Village	(228.7)	(90.62)	(189.9)	(1.085)	(0.626)	(0.774)	(8.070)	(7.464)	(9.291)
Mean in control	2090.11	856.6759	1212.00	12.22064	6.901385	5.207064	149.1694	121.2275	232.1413
Observations	2,293	2,293	2,293	2,293	2,293	2,293	1,152	973	400
Upazila FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The results in this table were generated using household level data from the high frequency survey which interviewed households 6 times between 22nd December 2014 to 28th February 2015. The sample is restricted to the contributions of only non-primary working members to each of the outcomes (dependent variables as described below).

The dependent variable in specification (1) is total income (in takas) generated by the non-primary working members i.e. income generated by non-primary working members from participation in the origin and the away (i.e. migrant) labor markets for the period covered by the high frequency survey. The dependent variables in specifications (2) and (3) are income (in takas) generated by non-primary working members from participation only in the origin labor market and income (in takas) generated by non-primary working members from participation only in the away (i.e. migrant) labor market respectively for the period covered by the high frequency survey. The dependent variable in specification (4) is similar to specification (2) but normalized by number of household members i.e. income (in takas) generated by the household from participation only in the origin labor market divided by total number of household members for the period covered by the high frequency survey. The dependent variable in specification (5) is the total number of days that non-primary working members of the household participated in the origin and the away (i.e. migrant) labor markets for the period covered by the high frequency survey. The dependent variables in specifications (6) and (7) are number of days that non-primary working members of the household participated only in the origin labor market and only in the away (i.e. migrant) labor market respectively, for the period covered by the high frequency survey. The dependent variable in specification (8) is the average daily wage rate across home and away labor markets, computed based on the reported income and days worked by the non-primary working members for the period covered by the high frequency survey. The dependent variable in specification (9) is the average daily wage rate in the home labor market, computed based on the reported income and days worked by the non-primary working members for the period covered by the high frequency survey.

All specifications include Upazila fixed effects.

Table 12. Proportion of Contribution to Employment Outcomes Made by the One Primary Worker in the Household

Variable	Control Village	Low Intensity Treatment Village	High Intensity Treatment Village
Income	0.78	0.84	0.81
Income (Home)	0.82	0.84	0.84
Income (Away)	0.57	0.72	0.69
Days Worked	0.75	0.81	0.79
Days Worked (Home)	0.79	0.80	0.81
Days Worked (Away)	0.57	0.72	0.68
Daily Income	0.78	0.81	0.80
DailyIncome (Home)	0.82	0.84	0.84
DailyIncome (Away)	0.88	0.92	0.91

The results in this table were generated using household level data from the high frequency survey which interviewed households 6 times between 22nd December 2014 to 28th February 2015. The table presents the proportion of the primary worker's contribution to the total for 9 key labor market outcomes for all households sampled.

The variable in row (1) is income (in takas) generated by the primary worker divided by total household income, for income generated from participation in both the origin and the away (i.e. migrant) labor markets for the period covered by the high frequency survey. The variables in rows (2) and (3) are income (in takas) generated by the primary worker divided by total household income from participation only in the origin labor market and income (in takas) generated by the primary worker divided by total household income from participation only in the away (i.e. migrant) labor market respectively for the period covered by the high frequency survey. The variable in row (4) is the total number of days worked by the primary worker divided by the total number of days worked by the household, for working members of the household that participated in the origin and the away (i.e. migrant) labor markets for the period covered by the high frequency survey. The variables in specifications (5) and (6) are number of days worked by the primary worker divided by the total number of days worked by the household only in the origin labor market and only in the away (i.e. migrant) labor market respectively, for the period covered by the high frequency survey. The variable in specification (7) is the average daily income earned by primary working members divided by household daily income across home and away labor markets, computed based on the reported income and days worked by the surveyed household for the period covered by the high frequency survey. The variables in rows (8) and (9) are the average daily income earned by primary working members divided by household daily income only in the origin labor market and only in the away (i.e. migrant) labor market respectively, computed based on the reported income and days worked by the surveyed household for the period covered by the high frequency survey.

Table 13. Migrants' Time Spent Away, Number of Trips Taken and Probability of Another Migrant Being Away

VARIABLE	Control Village	Low Intensity Treatment Village	High Intensity Treatment Village
Proportion of Time Migrant Spends Away	0.33	0.32	0.32
Number of Trips Migrant Makes	1.49	1.55	1.56
Probability that when one Ever-Migrant is Home Another Randomly Chosen Ever-Migrant in the Same Village is Away	0.75	0.76	0.75

The results in rows (1) and (2) of this table were generated using household level data from the endline survey, while results in row (3) were generated using household level data from the high frequency survey.

Row (1) presents simple arithmetic means of the time that migrant members spend away as a proportion of the total time enquired about (over the period September 15 2014 - April 30 2015) for all households in the endline sample. Row (2) presents simple arithmetic mean number of trips that migrant members take (over the period September 15 2014 - April 30 2015) for all households in the endline sample. Row (3) presents the probability that, for a given household in a given round of the interview with no members away, at least one other household within their village has a member away (i.e. a member who is migrant.

Table 14. Treatment Effects on Employment Outcomes Restricting Only to Contributions Made by Primary Workers while at Home (using High Frequency Labor Surveys)

	(1)	(2)	(3)
VARIABLES	Income (home)	Days worked (home)	Daily income (home)
Low Intensity Treatment Village	59.76**	0.231*	3.745
	(29.35)	(0.128)	(2.516)
High Intensity Treatment Village	88.03***	0.349***	4.776**
	(28.47)	(0.133)	(2.408)
Mean in control	592.57	3.37	177.61
Observations	9,730	9,730	8,310
Upazila FE	YES	YES	YES

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The results in this table were generated using household level data from the high frequency survey which interviewed households 6 times between 22nd December 2014 to 28th February 2015. The sample is restricted to the contributions of only primary working members to each of the outcomes and only employment outcomes at origin are studied (dependent variables as described below).

The dependent variable in specification (1) is total income (in takas) generated by the primary working member from participation in the origin labor market for the period covered by the high frequency survey. The dependent variable in specification (2) is the total number of days that the primary working member of the household participated in the origin labor market for the period covered by the high frequency survey. The dependent variable in specification (3) is the average daily wage rate in the home labor markets, computed based on the reported income and days worked by the primary working members for the period covered by the high frequency survey.

All specifications include Upazila fixed effects.

Table 15. Treatment Effects on Employment Outcomes Restricting Only to Contributions Made by Primary Workers while at Home for Week when they Earned Highest Income (using High Frequency Labor Surveys)

	(1)	(2)	(3)
VARIABLES	Income (home)	Days worked (home)	Daily income (home)
Low Intensity Treatment Village	69.61*	0.264*	1.344
	(37.99)	(0.142)	(3.838)
High Intensity Treatment Village	74.36*	0.173	5.145
	(38.35)	(0.148)	(3.755)
Mean in control	1,088.65	5.50	199.89
Observations	1,985	1,985	1,901
Upazila FE	YES	YES	YES

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The results in this table were generated using household level data from the high frequency survey which interviewed households 6 times between 22nd December 2014 to 28th February 2015. The sample is restricted to the contributions of only primary working members to each of the outcomes in the week for which they reported highest income (across all survey periods) and only employment outcomes at origin are studied (dependent variables as described below).

The dependent variable in specification (1) is total income (in takas) generated by the primary working member from participation in the origin labor market during the week in which they earned the highest income (across all survey rounds). The dependent variable in specification (2) is the total number of days that the primary working member of the household participated in the origin labor market during the week in which they earned the highest income (across all survey rounds). The dependent variable in specification (3) is the average daily wage rate in the home labor markets, computed based on the reported income and days worked by the primary working members during the week in which they earned the highest income (across all survey rounds).

All specifications include Upazila fixed effects.

Table 16. LATE (IV) Estimates of the Effect of Emigration on Employer Profits

VARIABLES	(1) Profits per decimal Aman 2015 (current)	(2) Profits per decimal Aman 2014 (previous)	(3) Change in Profits per decimal from 2013 to 2015	(1) Profits per decimal Aman 2015 (current)	(2) Profits per decimal Aman 2014 (previous)	(3) Change in Profits per decimal from 2013 to 2015
Share of eligible villagers who migrated in 2015-16	-254.9**	-204.3*	-19.55	-290.2**	-234.8*	-15.46
	(124.8)	(115.9)	(72.23)	(136.0)	(134.9)	(82.65)
Observations	626	626	626	547	547	547
Sample	FULL	FULL	FULL	PARTIAL	PARTIAL	PARTIAL
R-squared	0.086	0.088	0.040	0.095	0.092	0.041
Control Mean	83.361	95.842	-23.578	83.361	95.842	-23.578
Control Median	45.454	60	-18.399	45.454	60	-18.399
Firststage_R2partial	0.305	0.305	0.305	0.296	0.296	0.296
Firststage_Ftest	24.56	24.56	24.56	24.49	24.49	24.49
Firststage_Pvalue	8.94e-10	8.94e-10	8.94e-10	1.41e-09	1.41e-09	1.41e-09

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The IV results in these tables were generated with the 2016 Follow-up Employer Survey, combined with 2015 migration rates per village derived from the 2016 Follow-up Household Survey. Analysis is conducted at the village level. Uses data from the full sample of villages, and results from the partial sample (with higher quality data on population) look very similar. All money-related variables are measured in taka.

Dependent variables are all measures of profit (net revenues) per decimal (land unit) paid by the employer. Column (1) measures this for 2015; column (2) for 2014; column (3) for 2013; column (4) measures the change in profits per decimal from 2013 to 2014; column (5) measures the change in profits per decimal from 2013 to 2015.

The dependent variable is regressed on a binary variable "Migrated" that takes on the value 1 if at least one member of household migrated during the relevant period and zero otherwise. This variable was instrumented in a 2SLS regression using assignment to low-intensity or high-intensity treatment (as indicated). All specifications include Upazila fixed effects. All specifications include Upazila fixed effects.

Table 17. LATE (IV) Estimates of the Effect of Emigration on Employer Revenues

VARIABLES	(1) Revenues per decimal Aman 2015 (current)	(2) Revenues per decimal Aman 2014 (previous)	(3) Revenues per decimal Aman 2013=>Aman 2015	(1) Revenues per decimal Aman 2015 (current)	(2) Revenues per decimal Aman 2014 (previous)	(3) Revenues per decimal Aman 2013=>Aman 2015
Share of eligible villagers who migrated in 2015-16	-163.1	-183.5	-83.04	-133.8	-164.5	-102.6
	(232.4)	(220.2)	(119.4)	(272.4)	(261.3)	(144.9)
Observations	626	626	626	547	547	547
Sample	FULL	FULL	FULL	PARTIAL	PARTIAL	PARTIAL
R-squared	0.119	0.111	0.063	0.123	0.115	0.07
Control Mean	367.521	383.882	1.68	367.521	383.882	1.68
Control Median	254.545	294.193	-10.714	254.545	294.193	-10.714
Firststage_R2partial	0.305	0.305	0.305	0.296	0.296	0.296
Firststage_Ftest	24.56	24.56	24.56	24.49	24.49	24.49
Firststage_Pvalue	8.94e-10	8.94e-10	8.94e-10	1.41e-09	1.41e-09	1.41e-09

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The IV results in these tables were generated with the 2016 Follow-up Employer Survey, combined with 2015 migration rates per village derived from the 2016 Follow-up Household Survey. Analysis is conducted at the village level. Uses data from the full sample of villages, and results from the partial sample (with higher quality data on population) look very similar. All money-related variables are measured in taka.

Dependent variables are all measures of revenues per decimal (land unit) paid by the employer. Specification (1) has revenue per decimal for 2015; specification (2) has this for 2014 and column (3) has the change in revenues per decimal from 2013 to 2015.

The dependent variable is regressed on a binary variable "Migrated" that takes on the value 1 if at least one member of household migrated during the relevant period and zero otherwise. This variable was instrumented in a 2SLS regression using assignment to low-intensity or high-intensity treatment (as indicated). All specifications include Upazila fixed effects.

Table 18. LATE (IV) Estimates of the Effect of Emigration on Employer Costs

VARIABLES	(1) Costs per decimal (Aman 2015)	(2) Costs per decimal (Aman 2014)	(3) Change in Costs per decimal from 2013 to 2015	(4) Wage bill per decimal (Aman 2015)	(5) Non-wage costs per decimal (Aman 2015)	(1) Costs per decimal (Aman 2015)	(2) Costs per decimal (Aman 2014)	(3) Change in Costs per decimal from 2013 to 2015	(4) Wage bill per decimal (Aman 2015)	(5) Non-wage costs per decimal (Aman 2015)
Share of eligible villagers who migrated in 2015-16	145.6	58.48	224.1**	81.41	64.17	210.1	118.9	268.9**	93.78	116.3
	(174.6)	(165.1)	(103.3)	(79.42)	(108.0)	(214.8)	(203.9)	(124.8)	(98.13)	(132.3)
Observations	626	626	626	626	626	547	547	547	547	547
Sample	FULL	FULL	FULL	FULL	FULL	PARTIAL	PARTIAL	PARTIAL	PARTIAL	PARTIAL
R-squared	0.108	0.099	0.030	0.108	0.095	0.100	0.092	0.034	0.095	0.090
Control Mean	288.564	289.163	-25.507	149.011	139.553	288.564	289.163	-25.507	149.011	139.553
Control Median	232.33	231.481	4.962	122.125	103.634	232.33	231.481	4.962	122.125	103.634
Firststage_R2partial	0.305	0.305	0.305	0.305	0.305	0.296	0.296	0.296	0.296	0.296
Firststage_Ftest	24.56	24.56	24.56	24.56	24.56	24.49	24.49	24.49	24.49	24.49
Firststage_Pvalue	8.94e-10	8.94e-10	8.94e-10	8.94e-10	8.94e-10	1.41e-09	1.41e-09	1.41e-09	1.41e-09	1.41e-09

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The IV results in these tables were generated with the 2016 Follow-up Employer Survey, combined with 2015 migration rates per village derived from the 2016 Follow-up Household Survey. Analysis is conducted at the village level. Uses data from the full sample of villages, and results from the partial sample (with higher quality data on population) look very similar. All money-related variables are measured in taka.

Dependent variables in the first three specifications are all measures of costs per decimal (land unit) paid by the employer. Column (1) has cost per decimal for 2015; specification (2) has this for 2014 and specificaiton (3) has the change in costs per decimal from 2013 to 2015. The dependent variable in specificaiton (4) is wage per decimal (land unit) paid by the employer in 2015 (including labor costs of land preparation, sowing, maintenance and harvesting). The dependent variable in specification (5) encompasses costs per decimal incurred by the employer non-wage costs.

The dependent variable is regressed on a binary variable "Migrated" that takes on the value 1 if at least one member of household migrated during the relevant period and zero otherwise. This variable was instrumented in a 2SLS regression using assignment to low-intensity or high-intensity treatment (as indicated). All specifications include Upazila fixed effects.

Table 19. Treatment Effects on Local Food Prices

VARIABLES	(1) Rice (kg)	(2) Flour (kg)	(3) Pulses (kg)	(4) Edible oil (liter)	(5) Fish (kg)	(6) Meat (kg)	(7) Egg (per egg)	(8) Milk (liter)	(9) Salt (kg)	(10) Sugar (kg)
Low Intensity Treatment	-0.258**	0.0366	-0.432	-0.108	0.206	0.829	0.0222	0.836**	0.0724	-0.360**
Village	(0.103)	(0.199)	(0.757)	(0.597)	(3.146)	(1.708)	(0.226)	(0.396)	(0.0882)	(0.147)
High Intensity Treatment	-0.176*	-0.240	-0.315	0.916	8.122*	1.713	-0.114	0.000563	0.00832	0.0110
Village	(0.0964)	(0.197)	(0.682)	(0.683)	(4.644)	(1.967)	(0.143)	(0.435)	(0.0919)	(0.145)
Mean in control	31.62	33.37	101.53	110.84	209.88	113.96	8.66	39.56	10.72	46.51
Observations	2,374	2,374	2,374	2,374	2,374	2,374	2,374	2,374	2,374	2,374
Upazila FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Errors are clustered at the village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The results in this table were generated using shopkeeper (grocery store) level data from the endline survey which interviewed households 6 times between 22nd December 2014 to 28th February 2015. The dependent variable in each specification is the price per unit of a given item of food in the local village market.

All specifications include Upazila fixed effects.

Table A1. Randomization Balance on Observables at Baseline

	Control	Low Intensity (L)	High Intensity (H)	L - C	p-Value	H - C	p-Value	Treat. - C	p-Value
Baseline Characteristics for 100 Villages Inducted in 2008									
Value of total purchased meat consumed per HH per month	86.55	62.44	64.18	-24.10*	0.05	-22.37	0.10	-23.25*	0.05
	(11.01)	(5.35)	(7.86)	(12.15)		(13.43)		(11.86)	
Value of total purchased milk-egg consumed per HH per month	33.73	32.29	37.12	-1.44	0.69	3.39	0.40	0.92	0.78
	(2.49)	(2.7)	(3.23)	(3.64)		(4.04)		(3.23)	
Value of total purchased fish consumed per HH per month	156.70	150.18	160.97	-6.52	0.66	4.27	0.79	-1.21	0.93
	(11.2)	(9.69)	(11.31)	(14.69)		(15.79)		(13.32)	
Household size	4.04	3.87	4.00	-0.17	0.12	-0.04	0.70	-0.10	0.26
	(0.08)	(0.08)	(0.07)	(0.11)		(0.10)		(0.09)	
Value of purchased food consumed per HH per month	2161.77	1982.55	1975.06	-179.23*	0.08	-186.72*	0.07	-182.89**	0.05**
	(82.94)	(57.89)	(58.94)	(100.40)		(101.00)		(91.73)	
Monthly total food expenditure	2988.85	2863.19	3002.75	-125.66	0.23	13.89	0.89	-57.12	0.55
	(86.08)	(57.35)	(56.85)	(102.68)		(102.40)		(94.50)	
Value of medical exp incurred for males per HH per month	91.95	71.91	81.05	-20.03*	0.07	-10.90	0.39	-15.55	0.14
	(8.96)	(5.98)	(8.89)	(10.69)		(12.53)		(10.33)	
Value of medical exp incurred for females per HH per month	67.44	72.55	54.42	5.12	0.60	-13.02	0.12	-3.83	0.63
	(6.44)	(7.25)	(5.12)	(9.62)		(8.16)		(7.83)	
Value of clothes and shoes in 3 months per HH	140.70	137.15	150.45	-3.56	0.66	9.75	0.24	2.98	0.68
	(5.98)	(5.37)	(5.79)	(7.97)		(8.25)		(7.13)	
Value of edu exp in 3 months per	30.12	28.80	29.26	-1.31	0.74	-0.86	0.82	-1.09	0.75
	(3.14)	(2.39)	(2.07)	(3.91)		(3.73)		(3.47)	
Montly total non-food expenditure	924.15	952.88	962.29	28.72	0.55	38.14	0.42	33.34	0.42
	(33.87)	(34.37)	(32.67)	(47.90)		(46.70)		(40.94)	
Calorie intake per person per day	1,960.56	1,955.12	1,984.76	-5.44	0.89	24.20	0.53	9.13	0.79
	(27.95)	(30.43)	(26.32)	(41.02)		(38.10)		(34.17)	
Total Calories (per person per day)	2,062.61	2,047.24	2,095.15	-15.36	0.71	32.54	0.39	8.22	0.81
	(29.13)	(29.2)	(24.7)	(40.94)		(37.91)		(34.64)	
Number of males in HH	2.03	1.91	2.05	-0.12	0.11	0.02	0.76	-0.05	0.44
	(0.06)	(0.06)	(0.04)	(0.08)		(0.07)		(0.07)	
Number of females in HH	2.01	1.94	1.95	-0.06	0.29	-0.05	0.35	-0.06	0.25
	(0.05)	(0.05)	(0.04)	(0.06)		(0.05)		(0.05)	
Number of children in HH aged 0-18	1.90	1.78	1.83	-0.11	0.22	-0.07	0.45	-0.09	0.26
	(0.07)	(0.07)	(0.06)	(0.09)		(0.09)		(0.08)	
Number of children in HH aged 6-18 attending school	0.76	0.80	0.78	0.03	0.53	0.02	0.74	0.03	0.59
	(0.04)	(0.04)	(0.04)	(0.05)		(0.05)		(0.05)	
Subjective expectation: Monga occurrence this year	77.79	78.76	77.96	0.97	0.68	0.18	0.95	0.58	0.79
	(1.86)	(1.52)	(1.8)	(2.38)		(2.56)		(2.17)	
Subjective expectation: Can send remittance from Dhaka	58.51	59.27	59.31	0.76	0.73	0.80	0.72	0.78	0.68
	(1.6)	(1.5)	(1.54)	(2.17)		(2.19)		(1.90)	
Subjective expectation: Will get social network help in Dhaka	49.71	53.26	54.21	3.54	0.14	4.50*	0.06	4.02**	0.05**
	(1.56)	(1.81)	(1.84)	(2.37)		(2.39)		(2.00)	
HH Head Education (1=Educated)	0.26	0.23	0.24	-0.04	0.20	-0.02	0.42	-0.03	0.23
	(0.03)	(0.02)	(0.03)	(0.03)		(0.03)		(0.03)	
Number of Males Age>14	1.20	1.15	1.19	-0.06	0.15	-0.01	0.84	-0.03	0.35
	(0.04)	(0.03)	(0.03)	(0.04)		(0.04)		(0.03)	
Number of Children Age<9	1.07	1.01	1.03	-0.06	0.41	-0.04	0.50	-0.05	0.40
	(0.06)	(0.05)	(0.04)	(0.07)		(0.06)		(0.06)	

Table A1. (Continued) Randomization Balance on Observables at Baseline

	Control	Low Intensity (L)	High Intensity (H)	L - C	p-Value	H - C	p-Value	Treat. - C	p-Value
Baseline Characteristics for 33 Villages Inducted in 2011									
Value of total purchased meat consumed per HH per month	18.39	18.87	11.10	0.48	0.94	-7.29	0.23	-3.40	0.56
	(5.56)	(4.57)	(3.04)	(6.83)		(5.93)		(5.77)	
Value of total purchased milk-egg consumed per HH per month	6.66	5.83	5.76	-0.83	0.75	-0.91	0.74	-0.87	0.73
	(2.61)	(0.9)	(1.13)	(2.56)		(2.65)		(2.47)	
Value of total purchased fish consumed per HH per month	565.28	588.74	590.72	23.46	0.61	25.45	0.57	24.46	0.56
	(43.52)	(22.13)	(17.21)	(45.66)		(43.53)		(41.87)	
Household size	4.20	4.05	4.11	-0.15	0.28	-0.09	0.47	-0.12	0.31
	(0.12)	(0.09)	(0.06)	(0.14)		(0.12)		(0.12)	
Value of purchased food consumed per HH per month	602.76	631.21	619.53	28.45	0.58	16.76	0.73	22.62	0.62
	(45.84)	(28.23)	(20.85)	(50.62)		(46.97)		(45.09)	
Value of medical exp incurred for males per HH per month	13.96	36.02	27.99	22.05***	0.01**	14.03***	0.01**	18.04***	0.01**
	(2.45)	(5.64)	(3.54)	(6.02)		(4.16)		(4.02)	
Value of medical exp incurred for females per HH per month	14.15	22.62	25.24	8.46	0.20	11.09*	0.07	9.77**	0.05**
	(3.37)	(5.63)	(4.82)	(6.38)		(5.69)		(4.75)	
Value of clothes and shoes in 3 months per HH	147.68	157.55	153.22	9.87	0.36	5.54	0.59	7.69	0.41
	(9.12)	(6.36)	(5.77)	(10.49)		(10.15)		(9.30)	
Value of edu exp in 3 months per	32.07	42.62	36.22	10.55	0.18	4.15	0.60	7.33	0.31
	(7.11)	(3.83)	(4.39)	(7.56)		(7.85)		(7.09)	
Montly total non-food expenditure	14,965.80	17,021.89	15,530.85	2,056.09	0.18	565.05	0.70	1,300.36	0.33
	(1270.04)	(889.74)	(832.88)	(1,464.33)		(1,431.04)		(1,306.78)	
Number of males in HH	2.23	2.08	2.15	-0.15	0.24	-0.08	0.47	-0.12	0.30
	(0.12)	(0.07)	(0.05)	(0.12)		(0.11)		(0.11)	
Number of females in HH	1.97	1.97	1.97	0.00	0.99	-0.00	0.98	-0.00	1.00
	(0.12)	(0.05)	(0.05)	(0.12)		(0.12)		(0.11)	
Number of children in HH aged 0-18	4.10	3.94	4.08	-0.16	0.18	-0.02	0.84	-0.09	0.37
	(0.1)	(0.08)	(0.07)	(0.11)		(0.10)		(0.10)	
Number of children in HH aged 6-18 attending school	4.10	3.94	4.08	-0.16	0.18	-0.02	0.84	-0.09	0.37
	(0.1)	(0.08)	(0.07)	(0.11)		(0.10)		(0.10)	
Subjective expectation: Monga occurrence this year	37.58	38.74	36.84	1.17	0.79	-0.74	0.86	0.21	0.95
	(3.43)	(3.03)	(2.9)	(4.35)		(4.26)		(3.73)	
Subjective expectation: Can send remittance from Dhaka	57.37	53.00	52.29	-4.37	0.25	-5.08	0.12	-4.72	0.11
	(2.36)	(3.04)	(2.27)	(3.71)		(3.12)		(2.83)	
Subjective expectation: Will get social network help in Dhaka	48.84	45.23	46.81	-3.62	0.21	-2.03	0.55	-2.83	0.23
	(1.38)	(2.53)	(3.08)	(2.80)		(3.30)		(2.32)	
HH Head Education (1=Educated)	0.15	0.28	0.30	0.13**	0.04**	0.16**	0.02**	0.14**	0.02**
	(0.06)	(0.04)	(0.04)	(0.06)		(0.06)		(0.05)	
Number of Males Age>14	1.27	1.25	1.30	-0.01	0.79	0.03	0.46	0.01	0.82
	(0.03)	(0.05)	(0.04)	(0.05)		(0.04)		(0.04)	
Number of Children Age<9	0.91	0.93	0.93	0.02	0.89	0.01	0.90	0.02	0.89
	(0.11)	(0.09)	(0.06)	(0.12)		(0.11)		(0.10)	

VARIABLES	(1) At least one migrant (2014-15)	(2) At least one migrant (2014-15)	(3) At least one migrant (2014-15)	(4) At least one migrant (2014-15)	(5) At least one migrant (2014-15)	(6) At least one migrant (2014-15)	(7) At least one migrant (2014-15)	(8) At least one migrant (2014-15)	(9) At least one migrant (2014-15)	(10) At least one migrant (2014-15)	(11) At least one migrant (2014-15)	(12) At least one migrant (2014-15)	(13) At least one migrant (2014-15)
Offered Grant in Low Intensity Treatment Village	0.248***	0.238***	0.253***	0.263***	0.253***	0.266***	0.248***	0.238***	0.215***	0.228***	0.215***	0.215***	0.214***
	(0.0366)	(0.0371)	(0.0396)	(0.0672)	(0.0368)	(0.0685)	(0.0402)	(0.0412)	(0.0350)	(0.0411)	(0.0350)	(0.0350)	(0.0351)
Not Offered Grant in Low Intensity Treatment Village	0.0333	0.0246	0.0368	0.0174	0.0360	0.0286	0.0292	0.0198		0.0137			
	(0.0388)	(0.0419)	(0.0402)	(0.0436)	(0.0386)	(0.0394)	(0.0415)	(0.0447)		(0.0429)			
Offered Grant in High Intensity Treatment Village	0.398***	0.391***	0.399***	0.410***	0.398***	0.413***	0.394***	0.386***	0.364***	0.379***	0.301***	0.301***	0.368***
	(0.0333)	(0.0353)	(0.0335)	(0.0337)	(0.0332)	(0.0348)	(0.0344)	(0.0365)	(0.0360)	(0.0380)	(0.0327)	(0.0328)	(0.0358)
Not Offered Grant in High Intensity Treatment Village	0.0965**	0.0882**	0.0987**	0.0858**	0.0974**	0.0942**	0.0934**	0.0846*	0.0632	0.0777*			0.0650
	(0.0397)	(0.0416)	(0.0412)	(0.0411)	(0.0398)	(0.0393)	(0.0417)	(0.0438)	(0.0412)	(0.0436)			(0.0417)
Village with Agricultural Households Targeted		0.0177						0.0180					
		(0.0272)						(0.0273)					
Household Received Incentive in 2013			-0.00608	0.0269			0.00402	0.00499					
			(0.0209)	(0.0308)			(0.0220)	(0.0223)					
Household Received Incentive in 2011							-0.0154	-0.0169					
							(0.0320)	(0.0317)					
Household Received Incentive in 2008							-0.0211	-0.0202					
							(0.0336)	(0.0332)					
Household Received any Incentive Over All Years (2008, 2011, 2013)					-0.00801	0.0129							
					(0.0183)	(0.0241)							
Household Located in Treatment Village in 2013									0.0333				0.0363
									(0.0388)				(0.0393)
Household Located in Treatment Village in 2011													-0.0189
													(0.0273)
Household Located in Treatment Village in 2008													0.00373
													(0.0252)
Village Was a Treatment Village in 2008, 2011 or 2013										0.0467			
										(0.0522)			
Interaction: Low Intensity and Offered X Received Incentive in 2013				-0.0447									
				(0.0784)									
Interaction: High Intensity and Offered X Received Incentive in 2013				-0.0727									
				(0.0441)									
Interaction: Low Intensity and Offered X Received Incentive in any year						-0.0309							
						(0.0741)							
Interaction: High Intensity and Offered X Received Incentive in any year						-0.0589							
						(0.0402)							
Interaction: High Intensity Village X Treatment Village in 2013											0.0632		
											(0.0412)		
Interaction: Low Intensity Village X Treatment Village in any year												0.0137	
												(0.0429)	
Interaction: High Intensity Village X Treatment Village in any year												0.0777*	
												(0.0436)	
Observations	3,600	3,600	3,600	3,600	3,600	3,600	3,600	3,600	3,600	3,600	3,600	3,600	3,600
R-squared	0.137	0.137	0.137	0.137	0.137	0.137	0.137	0.137	0.137	0.137	0.137	0.137	0.137
Upazila FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Mean	0.343	0.343	0.343	0.343	0.343	0.343	0.343	0.343	0.343	0.343	0.343	0.343	0.343

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A3. Robustness Checks on Effects of Migration on Migration Income

VARIABLES	(1) Migration income	(2) Migration income	(3) Migration income	(4) Migration income	(5) Migration income	(6) Migration income	(7) Migration income	(8) Migration income	(9) Migration income	(10) Migration income	(11) Migration income	(12) Migration income	(13) Migration income
Offered Grant in Low Intensity Treatment Village	3,501***	3,304***	3,123**	3,842***	3,317***	3,883***	2,909**	2,681*	2,259***	3,525***	2,259***	2,259***	2,263***
	(846.40)	(953.50)	(1241.00)	(1305.00)	(1014.00)	(1315.00)	(1316.00)	(1607.00)	(843.40)	(919.20)	(843.40)	(843.60)	(850.10)
Not Offered Grant in Low Intensity Treatment Village	1,242	1,071	985.5	1,017	1,142	1,192	653.4	456.6		1,267			
	(888.4)	(1,044)	(1,133)	(1,042)	(971.2)	(921.7)	(1,240)	(1,513)		(992.1)			
Offered Grant in High Intensity Treatment Village	5,093***	4,954***	4,982***	4,849***	5,093***	4,888***	4,738***	4,582***	3,851***	5,117***	3,656***	3,656***	3,910***
	(904.30)	(897.70)	(842.50)	(841.50)	(904.40)	(865.80)	(836.60)	(923.60)	(1094.00)	(953.00)	(947.50)	(947.00)	(1085.00)
Not Offered Grant in High Intensity Treatment Village	1,437*	1262.00	1277.00	1295.00	1,404*	1,422*	1046.00	848.00	195.20	1461.00			148.8
	(783.60)	(972.70)	(875.60)	(857.20)	(791.70)	(786.80)	(923.20)	(1215.00)	(914.40)	(888.90)			(913.00)
Village with Agricultural Households Targeted		351.5						386.2					
		(961.5)						(994.8)					
Household Received Incentive in 2013			454.2	400.6			933.6	950.0					
			(968.0)	(801.5)			(1,170)	(1,192)					
Household Received Incentive in 2011							-776.5	-808.9					
							(897.5)	(923.6)					
Household Received Incentive in 2008							-845.7	-823.5					
							(816.3)	(803.9)					
Household Received any Incentive Over All Years (2008, 2011, 2013)					313.2	165.8							
					(816.9)	(604.2)							
Household Located in Treatment Village in 2013									1,242				1,130
									(888.4)				(984.0)
Household Located in Treatment Village in 2011													-37.28
													(805.9)
Household Located in Treatment Village in 2008													597.8
													(803.4)
Village Was a Treatment Village in 2008, 2011 or 2013										-61.24			
										(1,210)			
Interaction: Low Intensity and Offered X Received Incentive in 2013				-789.2									
				(1,446)									
Interaction: High Intensity and Offered X Received Incentive in 2013				554.6									
				(2,675)									
Interaction: Low Intensity and Offered X Received Incentive in any year						-557.3							
						(1,348)							
Interaction: High Intensity and Offered X Received Incentive in any year						786.7							
						(2,583)							
Interaction: High Intensity Village X Treatment Village in 2013											195.2		
											(914.40)		
Interaction: Low Intensity Village X Treatment Village in any year												1,267	
												(992.10)	
Interaction: High Intensity Village X Treatment Village in any year												1,461	
												(888.90)	
Observations	3,281	3,281	3,281	3,281	3,281	3,281	3,281	3,281	3,281	3,281	3,281	3,281	3,281
R-squared	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.047	0.046	0.046	0.046	0.046	0.046
Upazila FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Mean	5911.55	5911.55	5911.55	5911.55	5911.55	5911.55	5911.55	5911.55	5911.55	5911.55	5911.55	5911.55	5911.55

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A4. Robustness Checks on Effects of Migration on Income (From High-Frequency Surveys)

VARIABLES	(1) Income	(2) Income	(3) Income	(4) Income	(5) Income	(6) Income	(7) Income	(8) Income	(9) Income	(10) Income	(11) Income	(12) Income	(13) Income
Offered Grant in Low Intensity Treatment Village	382.9	544.5	594.7	1,898**	519.7	1,912**	585.6	762.3*	312.8	812.0**	312.8	315.2	311.7
	(317.1)	(355.8)	(410.4)	(761.3)	(373.2)	(758.0)	(420.6)	(452.8)	(298.2)	(369.0)	(298.2)	(298.3)	(298.4)
Not Offered Grant in Low Intensity Treatment Village	70.16	232.1	197.8	-42.78	134.5	45.08	227.5	404.5		496.7			
	(314.2)	(349.6)	(342.0)	(357.3)	(327.4)	(335.6)	(356.9)	(392.9)		(361.8)			
Offered Grant in High Intensity Treatment Village	1,222***	1,343***	1,292***	1,383***	1,236***	1,399***	1,319***	1,450***	1,152***	1,636***	707.4**	714.2**	1,163***
	(341.8)	(379.2)	(354.0)	(362.7)	(342.6)	(357.7)	(352.2)	(391.4)	(350.9)	(385.6)	(316.7)	(316.9)	(345.9)
Not Offered Grant in High Intensity Treatment Village	514.9	659.6*	601.8*	434.9	542.9	500.0	628.8*	784.1**	444.7	921.5**			452.8
	(330.9)	(374.8)	(340.0)	(339.5)	(333.0)	(334.5)	(340.4)	(386.3)	(343.4)	(375.5)			(347.5)
Village with Agricultural Households Targeted		-320.3						-327.3					
		(322.6)						(323.9)					
Household Received Incentive in 2013			-233.0	196.9			-266.0	-283.3					
			(258.8)	(308.7)			(298.6)	(295.0)					
Household Received Incentive in 2011							-312.5	-287.5					
							(309.7)	(311.6)					
Household Received Incentive in 2008							477.2	485.1					
							(356.2)	(356.2)					
Household Received any Incentive Over All Years (2008, 2011, 2013)					-200.0	64.06							
					(228.5)	(273.3)							
Household Located in Treatment Village in 2013									70.16				98.17
									(314.2)				(324.4)
Household Located in Treatment Village in 2011													-172.6
													(280.5)
Household Located in Treatment Village in 2008													36.22
													(247.5)
Village Was a Treatment Village in 2008, 2011 or 2013										-987.0**			
										(435.4)			
Interaction: Low Intensity and Offered X Received Incentive in 2013				-1,861**									
				(793.0)									
Interaction: High Intensity and Offered X Received Incentive in 2013				-745.1									
				(503.7)									
Interaction: Low Intensity and Offered X Received Incentive in any year						-1,727**							
						(793.3)							
Interaction: High Intensity and Offered X Received Incentive in any year						-613.2							
						(501.0)							
Interaction: Low Intensity Village X Treatment Village in 2013											444.7		
											(343.4)		
Interaction: Low Intensity Village X Treatment Village in any year												496.7	
												(361.8)	
Interaction: High Intensity Village X Treatment Village in any year												921.5**	
												(375.5)	
Observations	2,249	2,249	2,249	2,249	2,249	2,249	2,249	2,249	2,249	2,249	2,249	2,249	2,249
R-squared	0.073	0.074	0.073	0.076	0.073	0.076	0.075	0.076	0.073	0.077	0.073	0.077	0.073
Upazila FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Mean	6853.37	6853.37	6853.37	6853.37	6853.37	6853.37	6853.37	6853.37	6853.37	6853.37	6853.37	6853.37	6853.37

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A6. Robustness Checks on Effects of Migration on Away Income (From High-Frequency Surveys)

VARIABLES	(1) Away Income	(2) Away Income	(3) Away Income	(4) Away Income	(5) Away Income	(6) Away Income	(7) Away Income	(8) Away Income	(9) Away Income	(10) Away Income	(11) Away Income	(12) Away Income	(13) Away Income
Offered Grant in Low Intensity Treatment Village	327.3	511.0	464.6	2,266**	413.0	2,316**	419.6	609.8	448.1	579.3	448.1	449.1	444.6
	(319.7)	(351.9)	(411.5)	(1,033)	(369.4)	(1,031)	(416.8)	(461.6)	(288.4)	(361.1)	(288.4)	(288.5)	(288.2)
Not Offered Grant in Low Intensity Treatment Village	-120.8	62.36	-37.85	-361.6	-80.70	-195.0	-82.76	106.9		130.2			
	(290.5)	(340.8)	(327.2)	(344.6)	(305.9)	(316.5)	(330.2)	(391.8)		(331.9)			
Offered Grant in High Intensity Treatment Village	1,072***	1,210***	1,118***	1,234***	1,081***	1,285***	1,091***	1,232***	1,193***	1,315***	543.3	547.5*	1,128***
	(360.3)	(440.6)	(378.5)	(393.7)	(362.1)	(387.3)	(373.7)	(459.9)	(405.3)	(409.8)	(328.2)	(327.1)	(385.3)
Not Offered Grant in High Intensity Treatment Village	529.1	692.4*	586.6	357.5	547.1	490.1	565.6	731.6*	649.9*	767.6*			628.7*
	(334.2)	(391.2)	(355.1)	(348.7)	(340.5)	(340.5)	(349.8)	(414.5)	(374.8)	(390.2)			(367.6)
Village with Agricultural Households Targeted		-362.8						-351.3					
		(383.8)						(387.4)					
Household Received Incentive in 2013			-151.4	427.2			-93.42	-111.6					
			(275.0)	(307.0)			(306.1)	(305.5)					
Household Received Incentive in 2011							-442.6	-416.3					
							(305.7)	(309.9)					
Household Received Incentive in 2008							265.8	274.3					
							(353.6)	(355.0)					
Household Received any Incentive Over All Years (2008, 2011, 2013)					-126.7	215.8							
					(219.9)	(240.7)							
Household Located in Treatment Village in 2013									-120.8				59.48
									(290.5)				(327.6)
Household Located in Treatment Village in 2011													-307.0
													(331.7)
Household Located in Treatment Village in 2008													-360.8
													(289.7)
Village Was a Treatment Village in 2008, 2011 or 2013										-588.0*			
										(325.3)			
Interaction: Low Intensity and Offered X Received Incentive in 2013				-2,561**									
				(1,058)									
Interaction: High Intensity and Offered X Received Incentive in 2013				-980.9**									
				(495.2)									
Interaction: Low Intensity and Offered X Received Incentive in any year						-2,350**							
						(1,051)							
Interaction: High Intensity and Offered X Received Incentive in any year						-770.9							
						(484.5)							
Interaction: Low Intensity Village X Treatment Village in 2013											-120.8		
											(290.5)		
Interaction: High Intensity Village X Treatment Village in 2013											529.1		
											(334.2)		
Interaction: Low Intensity Village X Treatment Village in any year												130.2	
												(331.9)	
Interaction: High Intensity Village X Treatment Village in any year												767.6*	
												(390.2)	
Observations	2,271	2,271	2,271	2,271	2,271	2,271	2,271	2,271	2,271	2,271	2,271	2,271	2,271
R-squared	0.052	0.053	0.052	0.057	0.052	0.057	0.053	0.054	0.052	0.054	0.052	0.054	0.055
Upazila FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Mean	2376.126	2376.126	2376.126	2376.126	2376.126	2376.126	2376.126	2376.126	2376.126	2376.126	2376.126	2376.126	2376.126

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1