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Abstract

This paper tackles the question of what makes waste pickers resist a possible occupational transfer from the behaviorist perspective. Waste pickers at a dumpsite in the Philippines were offered alternative jobs using four different letters of offer. These letters differed in the scheme of payment and in the frequency of payment. The 112 waste pickers each randomly received one of the four offers, and we observed the number of those who accepted the offer. Those who were offered payment once every three days were significantly more likely to accept the job compared to those who were offered daily payment. We suggest that these results are evidence of self-control, a possible representation of complexity and richness in the waste picker's decision schema behind job change.

Keywords: field experiment, job change, payment schemes, self-control, waste management, waste pickers

JEL Classification: J33, M52, O13, Q53

1. Introduction

Public policies often cause job changes for workers within specific industries. For example, infrastructure projects such as construction of dams or roads often require the involuntary resettlement of residents and thus a job change for those who were once farmers or fisherfolk. Moreover, a change in the municipal solid waste disposal policy from open dumping to a sanitary landfill robs the livelihood of those who pick up recyclable waste at a dumpsite. These people are called waste pickers, and they work at open dumpsites in many countries (Medina, 2000; Hayami, Dikshit, & Mishra, 2006; Wilson et al., 2009).

Job loss has a distinct social cost, and it is a serious problem in countries without major safeguarding schemes including unemployment insurance. On the other hand, open dumping also has a distinct environmental cost.[1] Thus, agencies operating waste management services (*e.g.* municipalities) may plan to close open dumpsites in order to decrease the inherent environmental cost. In doing so, they face the expectation of providing alternative opportunities of employment for waste pickers in an effort to minimize the social cost of solid waste.

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[1] Open dumping is a widely used waste disposal practice, mainly in developing countries. This method causes several environmental problems such as bad smells and dirty leachate. Moreover, once this method is employed the land cannot be used for anything else for a long period of time, creating a real economic loss. Changing to a more environmentally-friendly method involves landfilling or burning waste. This will inevitably disturb those whose job is picking waste (Medina, 2000; Paul et al., 2012).

The sudden closure of an open dumpsite might minimize the number of waste pickers; however, that does not necessarily mean minimizing the social cost of solid waste. A sudden closure would rob the livelihood of waste pickers and is considered a cost for society. In order to minimize the social cost of solid waste, it is important to safeguard waste pickers by providing alternative job opportunities and to encourage them to change their job prior to the closure of any open dumpsite.

Nevertheless, it is generally difficult for agencies operating waste management services to provide attractive jobs to targeted workers. If such job opportunities exist, the waste pickers would have likely already taken them. Thus, agencies could effectively end up encouraging a transfer only to less preferred jobs. Even though waste pickers are usually classified as unemployed and economically active (therefore by definition in permanent search of formal employment), the common understanding is that they have chosen this business out of other possible occupations. Many waste pickers prefer their occupation because of its earning potential and flexibility (Medina, 2000). There is no guarantee that any other job opportunity will provide these same features. It is therefore worth exploring what conditions would actually be considered worthwhile when prompting waste pickers to change their job.

There are two steps agencies can follow when they are trying to induce a job change for workers in a specific industry. First, agencies must find or create employment, and second, given this alternative employment, agencies must convince targeted workers to accept the new opportunity as best they can. This study examines the second step. A field experiment was conducted at a dumpsite in the Philippines where 112 waste pickers were offered an alternative job. Each individual randomly received one of four types of offer letters, and we observed the number of those who

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accepted their offer. We examined whether changing the payment scheme from the baseline offer increased the number of waste pickers who would accept an offer.

The contributions of this study are fourfold. The first contribution of this study is to the literature on the preference and the behavior of waste pickers (Hayami, Dikshit, & Mishra, 2006; Gill, 2007). This study examines job change decision making by waste pickers using a survey and a field experiment. The size of our survey is about four times larger than previous studies, and this is the first study that made an intervention to the lives of waste pickers in order to understand their vocational choices better.

The second contribution of this study is to the literature on the change in wage payment schemes and behavior of workers. For example, Hamilton, Nickerson, and Owan (2003) and Bandiera, Barankay, and Rasul (2005) examine the effect of the change in incentive schemes on worker productivity. In contrast to this strand of the literature, the present study investigates the effect of the change in payment schemes on the rate of accepting the job. Our proposed framework of a field experiment can potentially be applied to any other setting related to labor supply.

The third contribution of this study is in the emerging literature of unemployment and the environment. Economists have long been neglecting the cost of job loss generated by environmental policies. Only few studies (Berman & Bui, 2001; Morgenstern, Pizer, & Shih, 2002; Walker, 2011) have assessed the impact of environmental policies on job loss. This study provides practical advice for decreasing the social cost of a novel waste management policy with a special focus on job loss.

The fourth contribution of this study is an examination of self-control. We found evidence of self-control with respect to waste pickers and job change. The context of self-control in this study is on savings, and the most important study on this topic is

carried out by Ashraf, Karlan, and Yin (2006). Based on our findings, we can say that waste pickers used the frequency of the payment in the job offer as a commitment device for savings. This can be considered evidence that the frequency of payment can mitigate the self-control problem of the workers, which is also anecdotally reported by Kaur, Kremer, and Mullainathan (2015).

This paper proceeds as follows. Section two explains details of the current job of the targeted workers and the job they are offered. Section three provides a simple model for job change, examines payment schemes, explains the experimental design, and presents a framework for the estimation. Section four presents the empirical results and discusses the interpretation of them, and section five concludes.

2. The Current and the Offered Jobs

2.1 The current job: Picking waste

Waste pickers at dumpsites are present all over the world.[2] As long as there is no household recycling program in a municipality and open dumping adopted, people can collect sellable products such as waste paper, cans, glass and plastic bottles, and metals that they can sell to intermediate dealers called junk shops.

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[2] Anthropologists and waste management researchers report on the lives of dumpsite waste pickers in the United States and Mexico (Medina, 1998), India (Hayami, Dikshit, & Mishra, 2006; Gill, 2007), Pakistan (Asim, Batool, & Chaudhry, 2012), Indonesia (Sasaki & Araki 2013), the Philippines (Paul et al., 2012), Brazil (Gutberlet & Baeder, 2008; Tirado-Soto & Zamberlan, 2013), and Nigeria (Agunwamba, 2003; Nzeadibe, 2009).

There is a growing concern for agencies operating waste management services in developing countries to managing solid waste appropriately while sustaining the livelihood of waste pickers. One solution for this problem is to provide an alternative livelihood for waste pickers before changing to more modern disposal methods (Medina, 2000). A front-runner in tackling this problem is the city of Iloilo in the Philippines, which is the research site for this study. In 2005, the Iloilo city government began plans to switch to a sanitary landfill when the existing disposal facility reached full capacity. The current plan is to close the current dumpsite at the end of 2015.

We attempted to interview all of the waste pickers working at a dumpsite in Iloilo[3] with the assistance of four enumerators throughout a ten-day period in August 2013. Together we interviewed 238 adults (18 years old and older) who were waste pickers.[4] Note that the German International Cooperation (GIZ) estimated there were

[3] A private contractor in Iloilo city collects municipal solid waste using trucks. Each day from 5 AM until 8 PM the contractor collects and brings the waste to the Calajunan controlled disposal facility, collecting approximately 220 tons each day (Paul et al., 2012). There is no household recycling program, and therefore all waste is mixed together.

[4] Even though many studies report on the lives of waste pickers, most are small surveys with the largest having a sample size of 60 people (Asim, Batool, & Chaudhry, 2012). The difficulty associated with surveying waste pickers is that many of them do not have mailing addresses or personal identification. Therefore, it is very difficult to conduct comprehensive surveys. In most cases the population of waste pickers working at a dumpsite is difficult to identify. Therefore, it is unable to undertake random sampling (Hayami, Dikshit, & Mishra, 2006). Our study also experienced a similar problem.

approximately 300 waste picking households in 2010, although the true population was unknown. We asked both demographic and socioeconomic questions as well as their willingness to accept a hypothetical closure of the dumpsite for the month of December 2013. We also asked other hypothetical risk and time preference questions.

Table 1 summarizes a portion of the interview surveys. Out of the 238 adult waste pickers we surveyed, 52.1 percent were female and their average age was 34.9 years old. Their average years of education was seven, with the longest being 13. On average, a waste picker has 10.7 years of experience and works 23.4 days per month.

[Table 1 Here]

The average daily earning of waste pickers was 123.7 Philippine pesos (PHP), which is equal to 2.83 USD.[5] This is less than half of the minimum wage of the private sector in Iloilo (245-287 PHP) and is about twice as much as reported in a previous study conducted in India in 2001 by Hayami, Dikshit, and Mishra (2006). The lowest daily earning was 30 PHP and there were six instances of this in our sample. All of the six lowest-earnings workers were female, and there were 11 waste pickers (4.6 percent of the respondents) who earned more than the minimum wage. The highest daily earning was 480 PHP (10.97 USD). The average daily working time was 6.9 hours, with the shortest being just one and the longest being 11. This speaks to the flexibility of the job. Twenty-six and a half percent (26.5 percent) of the respondents possessed a mobile phone, and some of them had a mobile phone with a music player, allowing them to listen to music while picking waste at the same time. Some of the waste pickers (26.9 percent) were the only ones working in their household, and 64.3 percent do not have any other side jobs (*No other job* = 1).

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[5] The exchange rate on November 27th, 2013 was 1 USD = 43.74 PHP.

Table 1 presents the various differences between female and male respondents. Female waste pickers were more educated than males on average (7.3 and 6.6 years, respectively), yet male waste pickers earned more than females each day (143.8 and 105.2 PHP, respectively). This disparity stems from both the difference in the working time each day and their productivity, which refers to their average hourly earnings (PHP/hour). Male waste pickers worked longer than females each day (7.2 and 6.6 hours/day, respectively) and earned more per hour (20.9 and 16.5 PHP/hour, respectively). The share of *No other income earner in the household (HH)* = 1 was 39.8 percent for male waste pickers while it was 15.3 percent for females. Around half of the male waste pickers (46.5 percent) have another job as well, while only 25.8 percent of the females mentioned having another job.

There are several additional features associated with the job of a waste picker in Iloilo city. Workers can obtain payment every day by selling their waste to junk shops on a daily basis. We asked the reason why they started picking waste, and some answered that it was because of the daily income they earn. Roughly half of the workers had another job or business before they ventured into waste picking, and more than 30 percent of those who had another job in the past were farmers or fisherfolk. It is important to note that jobs in agriculture cannot earn money as frequently as waste picking. However, the working conditions of waste pickers are far from decent; they have to work outside on a hill of waste where the smell is bad and flies are crawling elsewhere. The work is difficult and must be carried out even in the rain. Furthermore, in tropical countries such as the Philippines, the high temperatures and intense heat of the sun both take their toll on the health of the workers.

Waste pickers in Iloilo city are not employed by any others. Although some studies report groups of waste pickers within one dumpsite that are fighting for spheres of influence (Sasaki & Araki 2013), this is not the case in our study area. In general, the workers in our study area act individually and earn cash directly from the junk shops. However, we found that some also borrow money from junk shops. This patron-client relationship was also observed in India (Gill, 2007). The self-employment features of this job suggest that the workers do not need to care about working time; they can work whenever they want, and they can even bring their children to their working place. Finally, the level of earning for each worker is determined by their output, which depends on the quantity and quality of sellable waste that they collect. This is akin to a performance pay scheme. It is easy to enter this industry, as no capital or education is required (Hayami, Dikshit, & Mishra, 2006; Gill, 2007). Some of those we interviewed said that they started picking waste because it was an easy way to earn money. More than 18 percent of the workers we spoke to began in this industry in the past three years while the average years of experience was 10.7.

2.2 The offered job: Producing paper briquettes

Since 2006, the local government of Iloilo city started several programs to support the livelihood of waste pickers. These programs are assisted by the GIZ and a local NGO, and their objective is to support poor workers at the dumpsite, helping them to find an alternative source of livelihood (Paul et al., 2012). One of the alternative jobs that the city government has just started to provide is the production of solid fuels made from waste papers (paper briquettes). Waste papers generated at a university along with procured carbonized rice husk and sawdust are used as inputs for this fuel source. This

product can be used as fuel for cooking and can serve as substitute for charcoal and wood fuel. This study adopts the idea of briquette production as an alternative job for waste pickers.

The process of briquette production is as follows. First, we prepare the three materials mentioned above. Second, the waste papers are pulped using a pulping machine, after which they are mixed with other materials. Third, the semi-squeezed materials are placed in molders of the machine by screwing the cover down. The operator then maneuvers the hydraulic jack until the materials are fully compacted. One load of the briquetting machine can produce 16 pieces of handy-sized paper briquettes. One worker can operate one machine by him or herself, and the production process is quite easy so that anyone can produce briquettes, even from the very first attempt. An important feature of this job is the easy measurement of the output. Employers can count the pieces produced by one worker per day, or even an hourly rate.

Along with providing alternative livelihoods, the city government and GIZ developed an association of dumpsite waste pickers. Whether or not to become a member is optional and is completely up to the waste pickers. This association works as a workers' union and provides social securities, provides them with personal identifications, and buys recyclable waste for selling together. Almost 33 percent of those interviewed sell their recyclable waste to the association (see *Selling to the association* in Table 1). The executives of the waste pickers' association supported us when we undertook our field experiment. Furthermore, we used the association's center as the working place for the paper briquette production. This place is located approximately 100 m away from the main gate of the dumpsite, and therefore the commuting cost for waste pickers who decide to pursue this job is negligible.

Throughout the interview we asked, "Do you want to join the job of producing paper briquettes?" Almost 90 percent of the respondents said they were interested (see *Wants to join PB production* in Table 1). However, we will later discover that this does not reflect their actual job change behavior.

3. Experimental Design and an Empirical Framework

3.1 Overview of the field experiment

The primary goal for agencies operating waste management services is to provide alternative employment that encourages as much job change for waste pickers as possible. At the same time, agencies are also interested in minimizing workers' moral hazard. It is easy to measure the output of the workers at the job offered by this study, and the theory of optimal compensation (Lazear, 1995; Lazear, 1998) suggests that when a firm can observe the output of its workers without cost, it should pay workers based on this information. Thus, we defined performance pay (output-based pay) as the baseline offer in this study.

Although performance pay is the most efficient payment scheme, waste pickers do not know their own productivity at the new job, and therefore they cannot sensibly judge whether the new pay rate is advantageous for them. In order to remove uncertainty from the job offer, a fixed-rate pay (input-based pay) offer was also prepared. This second payment scheme determined the level of salary independent from how much one produces.

Another question that needs to be answered is whether agencies (or possible employers) can generate a profit from the alternative job while continuing to encourage job change. An offer that adds a draw (Lazear 1998) to the performance pay was

prepared, constituting a combination of both a fixed-rate and performance pay. The mechanism used to raise a profit using a draw will be explained in detail in section 3.3.

Some studies have suggested that waste pickers work to meet their basic every day needs (Wilson et al., 2006). Therefore, waste pickers are considered myopic individuals. All of the three offers above will provide payment once every three days, and the fourth offer will pay every day using a performance pay scheme. Our hypothesis is that increasing the frequency of the payment will increase the number of workers accepting the offer. The next subsection examines the theoretical background of job change behavior by waste pickers.

3.2 A simple model of a job change

We developed a simple theoretical framework whereby a worker makes the decision to change their job. This job change decision making is modeled as a binary choice. Consider the decision between staying at a current job and accepting a job offer from another. What one does at a current job and the working conditions of this job are known from past experience. On the other hand, workers do not have the same amount of information about a new job when it is offered. Furthermore, the level of salary is uncertain if the payment scheme is performance-based.

Let s be the level of salary. Considering a performance pay scheme, s can be denoted as a function of the output of a worker, f. If a payment scheme involves a fixed-rate pay, then s is independent of f. Next, the output of a worker f can be defined as a function of their effort, e. Assume that the worker's utility (U) depends on their level of salary, an effort paid for it, the frequency of the salary payment (r), and the working conditions (w). Variables are labeled cur if they indicate a current job and

off if they indicate an offered job. Assume $\partial U/\partial s > 0, \partial U/\partial e < 0$ and $\partial U/\partial w > 0$.

Then the binary variable of accepting an offered job (C) takes a value of 1 if

$$U\left(s_{off}\left(f_{off}(e)\right), e, r_{off}, w_{off}\right) > U(s_{cur}(f_{cur}(e)), e, r_{cur}, w_{cur}). \qquad (1)$$

The shape of the functions $f_{cur}(\cdot)$ and $s_{cur}(\cdot)$, the frequency of the payment r_{cur}, and the working conditions w_{cur} are all known by the worker. In addition, the shape of $s_{off}(\cdot)$ and the value r_{off} are known unless the offer lacks the necessary information for determining the level of the salary and how often it will be paid. Instead, the shape of $f_{off}(\cdot)$ and the working conditions w_{off} are subject to uncertainty. Note that s_{off} takes a known constant value if the offer involves a fixed-rate pay scheme.

A worker must estimate the level of salary at an offered job and guess how much effort is required for it as well as the working conditions of that job. According to one's estimate, if a worker estimated the utility of an offered job is higher than the known level of the current utility, the worker is likely to accept the new job ($C = 1$).

3.3 Payment schemes we offered

In our field experiment, the shape of $s_{off}(\cdot)$ and the frequency of the payment r_{off} are both mentioned in the offer letters. Four types of job offer letters were prepared (Table 2): performance pay with payment once every three days (group 1); performance pay with a draw and payment once every three days (group 2); fixed-rate pay with payment once every three days (group 3), and performance pay with daily payment (group 4). This subsection theoretically examines the efficient shape of $s_{off}(\cdot)$ and proposes three functions.

[Table 2 Here]

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Remember that the task for agencies is to encourage as much job change as possible. Conditional on that, agencies would try to make employed workers put forth an efficient level of effort. Also remember that the job offered in this study is one where it is easy to measure the output of workers, and so an employer should adopt a performance pay scheme. The theory of optimal compensation (Lazear, 1995; Lazear, 1998) tells us that an optimal level of the piece rate should satisfy the following:

Payment per production = Price − Marginal cost other than wage.

If production cost (such as expenditures for materials) is variable, the piece rate equal to the price of the output minus the marginal cost of materials will achieve an efficient level of effort by a worker and minimize the moral hazard. Such a payment scheme gives workers an incentive to work as much as they can without generating a loss to a firm. Note that a firm cannot raise a profit with this scheme, as it satisfies the condition of price equal to marginal cost. From these considerations, the level of the payment for the first offer is determined by the performance pay of 1 PHP per production of four pieces of paper briquettes.[6] For the purposes of our experiment, this scheme is the considered the baseline (group 1).

Although the above scheme can provide an incentive for workers to provide their maximum effort and thus earn maximum revenue, an employer cannot raise the profit. Lazear (1998) provides a scheme with a draw that raises the profit while maintaining an incentive for workers. Workers are guaranteed a certain salary (i.e., a draw) even if

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[6] This is calculated by the fact below. First, 40 pieces (approximately 1 kilogram) of paper briquettes can be sold at 11 PHP to retail shops. Second, in order to produce 40 pieces, less than 1 PHP of carbonized rice husk and sawdust are needed as materials. Thus, 10 PHP (11 minus one) per 40 pieces is the efficient level of the piece rate.

production falls short of the predetermined level. However, workers receive no commission until they have reached some threshold. After this threshold, workers begin to earn the same rate as the above scheme. If the level of a draw is set below the level that the workers would be able to earn when they produced the threshold level with the performance pay, a firm can then raise their profit. According to these considerations, the level of payment for the second offer is determined by the performance pay with a draw (group 2). A draw of 30 PHP per day is offered, and commission will not be paid until a worker produce more than 150 pieces. Once this threshold is achieved, an additional 1 PHP per four pieces will be paid on top 30 PHP already earned. This payment scheme can produce a profit of 7.5 PHP per worker per day if one produces more than 150 pieces.[7] If this offer attracts the same or more workers than the first offer, this suggests that an agency can encourage job change by maintaining the incentives of the job offer while raising the profit of the business.

For comparison purposes, we do not only consider output-based pay but also input-based pay. The ideal situation for an agency is that no one picks waste any longer; however, this seems quite difficult to achieve in the short-term. Thus, the initial target is to encourage a job change in 15 percent of the recipients. Our survey discovered that 15 percent of waste picker's daily earnings are equal to or less than 65 PHP. From this observation, the third proposal offers a 65 PHP per day fixed-rate no matter how many briquettes are produced (group 3).

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[7] If an employer adopts a performance pay scheme, they should pay 37.5 PHP per day if a worker produced 150 pieces (150 divided by four). Because a draw is set to 30 PHP per day, 7.5 PHP per worker per day is the difference of the payment between the first and the second offer.

In addition to the level of the payment, we also examined the frequency of payment. Our simple theoretical model assumed that workers will prefer a particular frequency of payment over another. We offered daily payments as one option; however, such frequent payment incurs additional administrative costs for an agency. Therefore, one payment every three days (i.e., twice each week) was adopted as a baseline. The first three offers pay the workers once every three days (group 1–3), and the fourth offer includes a performance pay of 1 PHP per four pieces with daily payment (group 4). The four offers are summarized in Table 2.

3.4 Survey

We conducted a survey of the waste pickers before we distributed the job offer letters. In addition to the demographic questions mentioned above, we asked about their willingness to accept a hypothetical closure of the dumpsite for the month of December 2013 (in PHP) as well as hypothetical risk and time preferences.

We asked the compensation level that is sufficient to accept one month closure of the dumpsite (*Willingness to accept closure*, PHP). This value measures the stated opportunity cost of being prohibited to pick waste for one month.

In accordance with Binswanger (1980) and Holt and Laury (2002), we measured risk preferences by asking waste pickers to choose between receiving a sure reward versus receiving a reward that would be determined by chance. We constructed a scale of risk averseness (*Risk averseness*), which bears a value from one to eight. Greater values imply that an individual is more risk averse. A risk-seeking individual bears a value of one to three, a risk-neutral individual bears a value of four or five, and a risk-averse individual bears a value of six to eight.

Studies in development economics suggest that the poor behave as if they are myopic (Banerjee & Mullainathan, 2010; Banerjee & Duflo, 2011). Based on these observations, we hypothesized that waste pickers have a high discount rate and therefore would prefer frequent payments. In addition, we hypothesized that the impact of increasing the frequency of the payment would be large for those with a high discount rate. In order to test these hypotheses we measured time preferences of waste pickers according to Thaler (1981) and Benzion, Rapoport and Yagil (1989). We asked waste pickers to choose between receiving a reward of 10 to 100 PHP today versus receiving a larger reward of 120 PHP in three days. We constructed a scale of the discount rate (*Discount rate*), which bears a value of one to six. Higher values imply that the discount rate of the individuals is high and they are impatient. Note that we measured the time-consistent preference of waste pickers.

3.5 Experimental design

A field experiment was conducted at the dumpsite in Iloilo city to test whether a change in the payment schemes would affect the rate of accepting a job offer. We proposed the job of producing paper briquettes, and we observed and discussed the number of waste pickers who accepted the offer and stopped picking waste.

We distributed envelopes containing the job offer letters to 112 waste pickers over four days in November 2013. The letters were translated into Hiligaynon, the local dialect of Iloilo. One of our authors and two research assistants distributed the envelopes, and the research assistants explained the description of the offer in Hiligaynon if requested. The vice president of the waste pickers' association supported

us throughout the distribution, which was executed by going to the dump to find waste pickers.

The offer letter constituted two pages: the first page contained a description of the job including the starting time, working time, and the process for application; and the second page set out the substance of the offer, which differs among the groups. We asked all workers to join us for 16 days (from November 27th onward), except for Sundays. Working hours were set to five hours and were from 10 AM to 4 PM (excluding a one-hour lunch break). The paper briquette production was conducted at the association's center, which has great working conditions such as a roof, basic utilities like electricity and water, and amenities like toilet and a handwashing area. We mentioned that there were more than 16 vacancies. Finally, the application form was attached to the letter, and those who wanted to accept our offer were instructed to fill out the application form, submit it at the association's center, and then attend the orientation scheduled on the first day.

The random process of distribution was as follows. First, we found a waste picker who was interviewed in August 2013. Second, we shuffled four cards and showed them to the individual with faces down. Third, the individual picked up one card, and finally, the number of the card determined the version of the job offer letter they received. Only one version of the offer letter was given to each waste picker, and those who received the offer had to decide whether to continue their current job of picking waste or accept the offer. We used the association's center as the base of operations, and we always started to search for waste pickers from that location. This does introduce a bias into the sample selection, as it favors waste pickers who often work near the center or who live near the area.

Accepting the offer was defined as an individual who submitted the application form and attended the orientation held on the first day. Those who changed their job and started producing paper briquettes received a salary beginning on November 28th according to their production rate and the scheme of payment.

3.6 An empirical framework and hypotheses

The outcome variable of interest is acceptance of our job offer (C) by waste pickers. Let C_i be an indicator variable for accepting the job offer by an individual i, and let D_{draw} be an indicator variable for receiving an offer letter from group two, which involves performance pay with a draw. Similarly, D_{fr} will be an indicator variable for group three, which involves a fixed-rate pay, and D_{daily} be an indicator variable for group four, which involves performance pay with daily payment. Let C^* be an unobserved, or latent, variable of the difference between the left hand side and the right hand side of equation (1). Suppose that

$$C_i^* = \beta_{draw}D_{draw,i} + \beta_{fr}D_{fr,i} + \beta_{daily}D_{daily,i} + \gamma'X_i + \varepsilon_i, \tag{2}$$

where X_i is a vector of demographic and other survey responses and ε_i is an error term for an individual i. The coefficients β and γ are estimated by maximum likelihood estimation in a logit model. The probability that $C_i^* > 0$ and therefore $C_i = 1$ is given by

$$\Pr(C_i = 1) = \frac{\exp(\beta_{draw}D_{draw,i}+\beta_{fr}D_{fr,i}+\beta_{daily}D_{daily,i}+\gamma'X_i)}{1+\exp(\beta_{draw}D_{draw,i}+\beta_{fr}D_{fr,i}+\beta_{daily}D_{daily,i}+\gamma'X_i)}. \tag{3}$$

In addition to equation (2), we estimated models of interaction with the offer letter dummy variables and several covariates. If β is positive and statistically significant, this means that a payment scheme can encourage more job change compared to group one.

We expected that increasing the frequency of the payment would increase the number of individuals accepting the job offer. Therefore, we hypothesize that β_{daily} would be positive. Furthermore, we can expect if impatient individuals received the daily payment scheme, they will more likely accept the offer. This provides a prediction of a positive coefficient of interaction for β_{daily} and *Discount rate*.

If the coefficient β_{draw} was positive, an agency could successfully encourage more job change than the group one and could generate a profit from producing paper briquettes. Whether β_{draw} is positive or not depends on the perceived magnitude of a draw, which is 30 PHP. Note that no waste pickers who received the offer had experience producing paper briquettes. Thus, a performance pay scheme indicates high uncertainty with respect to the level of the payment. In this case, a guaranteed 30 PHP per day might reduce the uncertainty. As a result, group two might attract more risk-averse individuals than group one, and this is the intended effect of a draw. However, the opposite effect can also be imagined. Remember that the quantity of a draw is equal to the minimum average daily earnings of those interviewed. A base wage of 30 PHP could be interpreted as very difficult to earn in this business, and since the proposed level of a draw is quite low, adding this option might decrease the number of individuals pursuing the job change.

It is insightful to compare groups one and three. If β_{fr} is negative and significant, the performance pay is more attractive than the fixed-rate of 65 PHP per day. The fixed-rate pay has no uncertainty with respect to the level of the payment and would be more preferred by risk-averse individuals. Thus, we hypothesize that the coefficient of the interaction term $D_{fr,i}$ and *Risk averseness* will be positive.

Hypotheses on other covariates are as follows. If there are no other workers in the household, one might hesitate to change their job, as there is a risk involved. Holding risk preference as fixed, we hypothesize that *No other income earner in the household (HH)* individuals will be less likely to accept the job offer. We also hypothesize that *No other job* and *Risk averseness* negatively correlate with a job change.

4. Results

4.1 Descriptive results

The summary statistics of all the recipients of letters and the randomly divided four groups of waste pickers are shown in Table 3. We also reported the number and percentage of those who submitted the application form (Number of the submissions) as well as the number and percentage of individuals who both submitted the application form and actually showed up on the first day (Number of the job changes).

[Table 3 Here]

Fifty-five individuals submitted application forms and mentioned that they would accept the offer; this is about half of the recipients. However, we only observed 17 individuals on the first day. The major reason that the rest of the applicants did not actually follow through with their intentions was because they were busy picking waste. We defined the 17 individuals who submitted their application form and actually appeared on the first day as job changers, and they constituted 15.2 percent of the waste pickers who received a job offer.

The offer with performance pay once every three days attracted 27.3 percent of those who received the job offer. This implies that even an offer with a highly uncertain salary and less frequent payment scheme compared to their current job can encourage

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more than a quarter of waste pickers to change their job. Also, the offer of performance pay with a draw attracted 17.9 percent of applicants.

The offer with a fixed-rate of 65 PHP per day attracted 11.8 percent of recipients. Note that 20.6 percent of the recipients of the job offer with a fixed-rate pay earn less than 65 PHP. Surprisingly, however, all four applicants from this group earn more than 65 PHP by picking waste, and two of them earn more than double the fixed rate (150 PHP).

The worst option of all was the performance pay with daily payment. Unlike our hypothesis and expectations, this offer attracted only 7.1 percent of the recipients, which was lower than group one. We will formally show this result using regression analysis in the next subsection.

4.2 Impact of changing payment schemes

We estimated the effect of changing a payment scheme on the number of those accepting the offer, and Table 4 shows the estimation results of equation (3). Since we report coefficients, we only discuss the sign but not the magnitude. The next table will demonstrate the marginal effects.

[Table 4 Here]

First, we could not find any positive or negative effect for a draw of 30 PHP until 150 briquettes were produced. A 30 PHP payment alone could not either increase or decrease the number of those accepting the offer. This suggests that a draw did not send a signal that it is very difficult to earn in this business. Therefore, using a draw, an agency may raise a profit of 7.5 PHP per day per worker without reducing the number of those who change their jobs.

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Second, waste pickers who were offered a fixed-rate of 65 PHP per day were less likely to accept a new job compared to those who were offered the performance pay option. These estimates are statistically significant in models 2–4. There are two potential explanations for why waste pickers are less likely to accept an offer with a fixed rate of 65 PHP: first, they simply preferred an uncertain offer; and second, they successfully estimated their own productivity. Nevertheless, we cannot identify which (if any) is the main reason. In the actual production that was undertaken immediately after this field experiment, workers in group one earned more than 65 PHP[8].

Finally, we found significant and robust evidence of a negative effect for changing the payment frequency from every three days to a daily payment. Waste pickers who were offered daily payments with an uncertain payment level were less likely to accept the proposed job. This suggests that a new job with a daily payment scheme which is same as their current job is not attractive for them. Perhaps one might consider our job very difficult with respect to its working conditions and unsecure employment, as jobs with daily payments often have such features. Further interpretations are possible based on the anecdotal evidence obtained from the follow-up interviews. This will be discussed in the next subsection.

We calculated the marginal effect in order to estimate the magnitude of the effect of changing the payment scheme from group one to group three or four and reported this in Table 5. In each model from 1–3 in Table 5, the other two dummy variables that

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[8] We observed production of paper briquettes by workers who accepted the offer for three weeks. The average amount of production by workers under the performance pay option was twice as large as the group with the fixed-rate pay. This difference is evidence of the moral hazard for workers with a fixed-rate pay.

are not concerned are set to zero, and the other control variables are set to their mean value. The calculation shows that changing the payment scheme from performance pay to a fixed-rate of 65 PHP per day decreases the probability of accepting the offer by 22.5 percentage points. Another calculation shows a larger effect, that changing the payment scheme from every three days to a daily payment decreases the probability of accepting the offer by 30.4 percentage points.

[Table 5 Here]

4.3 Interpretation of the main result

Ex post interviews suggest a possible interpretation of our main result whereby a change in payment frequency from once every three days to daily payments would decrease the probability of accepting the job offer by about 30 percentage points. Four days past the actual production start, two workers in the group of daily payments asked us to change their payment frequency to something less than the current scheme. They requested that their salary be paid two weeks later, claiming they wanted to generate savings with this payment scheme.

Based on this anecdotal evidence we interpret that our estimation results reveal evidence of self-control by the waste pickers.[9] Waste pickers recognize that there are two different selves within them: one self is tempted to spend their earnings if they

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[9] DellaVigna (2009) reviewed literature on the problem of self-control. There are several theoretical studies on self-control, with a leading study by O'Donoghue and Rabin (1999). Theoretical examinations on self-control within developing countries have been conducted by Banerjee and Mullainathan (2010) and Bernheim, Ray, and Yeltekin (2013).

receive them daily, but the other self knows that not spending their income and generating savings will improve their welfare in the long-term. Therefore, the latter self tries to control the former self and not spend the earnings. However, it is difficult to control the former self. Waste pickers face self-control struggles with respect to their savings. The present offer pays less frequently than their current business, and accepting this offer might mitigate the problem of self-control. A new job with less frequent payment can be a commitment device. On the other hand, an offer with a daily payment is less attractive, as there is no function as a commitment device at all. Based on the above considerations, we can say that our offer of payment once every three days partially solves the waste pickers' self-control problem.

Previous studies have also found a similar self-control behavior with individuals. Ashraf, Karlan, and Yin (2006) find individuals with hyperbolic time preferences are more likely to open self-commitment savings accounts. There are individuals who restrict withdrawals from their savings account until a certain targeted time period. This implies that some individuals recognize that they are impatient in the short-term, but their welfare will be enhanced with larger savings in the future, and they are sophisticated enough to realize that restricting withdrawal from their account will improve their long-term welfare.

If some waste pickers have time-inconsistent preferences as above, they might prefer payment once every three days over daily payment in order to increase their long-term savings. Note that long-term in the current context is only three days, which is quite short compared to the study of Ashraf, Karlan, and Yin (2006). Waste pickers might realize that they would spend too much if they received their payment daily, and perhaps they cannot control themselves even for three days. In addition, they are

sophisticated enough to know that they will experience difficulty with self-control but also that savings will improve their welfare.

Kaur, Kremer, and Mullainathan (2015) conducted a field experiment with data entry workers in India with a focus is self-control at work. They find evidence of self-control at work and also report an anecdotal evidence of self-control on savings that workers preferred the employer to withhold payment as a means to help the employees save money. This anecdotal evidence is considered the consequence of time-inconsistent preferences with consumption. Our estimation results formally support these observed stated preferences on the frequency of payment.

Are waste pickers really facing the problem of self-control? Is there any other device to solve this problem? We can imagine two alternatives. First, waste pickers might be able to ask junk shops to withhold their payment. As mentioned above, we discovered that some junk shops lend money to waste pickers. Therefore, these same shops might also keep cash for several days until the waste pickers require it, although we did not observe this behavior. Second, waste pickers might be able to store recyclable waste and sell it once every three days instead of daily. Although there might be an external cost for storing waste (i.e., bad smell and health conditions), we found that some waste pickers actually do this. We could not identify whether this is because they want to mitigate a self-control problem for waste pickers or if it was for some other reason. One possibility is that they might be waiting to sell recyclables until the price increases, or perhaps large quantities can be sold at a higher unit price. These two alternatives seem to be less costly approaches to managing a self-control problem compared to changing one's occupation. We remain puzzled about why waste pickers demand a commitment device even though there seems to be other great alternatives.

In order to explain our findings on time-inconsistent preferences, additional surveys and experiments are required. First, we should survey the time-inconsistent preferences of waste pickers in the same manner as Ashraf, Karlan, and Yin (2006), but shortening the time range of the questions. For example, we suggest asking participants to choose between options 1a (receiving a smaller reward this afternoon) and 1b (receiving a larger reward tomorrow afternoon). Next, we suggest asking participants to choose between options 2a (receiving a smaller reward tomorrow afternoon) and 2b (receiving a larger reward in the afternoon of the day after tomorrow). We then suggest defining an individual who chooses both options 1a and 2b as one that has a time-inconsistent preference. This is evidence of a present bias, which may be called a today bias. If we find a negative correlation between an interaction term of a dummy variable for daily payment and a today bias, and a decision to accept the job offer, this will support our hypothesis above.

Note that our findings do not imply that less frequent payments are generally better. We believe this is the case because the less frequent offer involved payment once every three days, which is more frequent than the common payment practice of once per month. Further studies are needed to examine the most attractive payment frequency for waste pickers and other low-income individuals in developing countries.

4.4 Demographic and psychological determinants of a job change

The results of the models 2–4 reported in Table 4 provide other determinants for accepting the job offer. Age, education, and productivity at one's current job are not correlated with the decision to accept our offer. A transactional relationship with the waste pickers' association (i.e., *Selling to the association*) had a positive and highly

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significant effect on accepting the job offer. This makes sense, as the association indeed supported our recruiting and provided us with a working place for the alternative job. The evidence of a strong bond between waste pickers and the buyers is also demonstrated in previous studies (Hayami, Dikshit, & Mishra, 2006; Gill, 2007). This suggests that social networks such as a buyer-seller relationship will affect the decision to change one's job.

We find that females are more likely than males to change their job. A negative sign for the *No other income earner in the household (HH)* variable suggests that waste pickers who are the only income earners within a family are less likely to leave the dumpsite and work at a new job. A combination of these two results suggests that a main income earner in a household is more likely to stay in their current business. We believe the reason for this is that our job offer provided uncertain earnings, except for the fixed-rate pay offer (which is controlled in the estimation). Thus, the individual who is responsible for the main income of a household will hesitate to accept such a risky offer. This means that we failed to convince those individuals to change their job, making them the main opponents of a new waste management policy. Our future task will be to encourage such individuals to stop picking waste and to take an alternative job. Whether or not they have other jobs was not correlated with their job change behavior (*No other job*). In addition, the stated preference to accept a job offer during the interview survey does not explain their actual behavior (*Wants to join PB production*). We find that risk-averse waste pickers are less likely to take a new job. Patient waste pickers, however, are more likely to change to a new job, but this effect was not statistically significant.

Next, we examined the interaction terms among these preference variables and the three offer letters. We can see differences in the effect of changing payment schemes for individuals with heterogeneous risk and time preferences. Table 6 reports the coefficients of the logit estimations.

[Table 6 Here]

The results presented in Table 4 show a slightly negative correlation of risk averseness and job change behavior. The coefficient of an interaction between risk averseness and a dummy variable of performance pay with a draw was positive and significant. This implies that risk-averse individuals are less likely to accept the job offer[10]; however, the possibility that decreases with risk averseness would be smaller if we added a draw to the performance pay. Therefore, a draw of 30 PHP per day encourages job change for risk-averse individuals.

Similarly, the interaction of risk averseness and a dummy variable of fixed-rate pay scheme was positive and significant. Thus, risk-averse individuals are less likely to accept the job offer; however, the possibility that decreases with risk averseness would be smaller if we changed the payment scheme from performance pay to a fixed-rate of pay. These results imply a correlation between risk averseness associated with uncertainty in the payment level of a new job and the decision to make a job change. Performance pay will mitigate the moral hazard after we hire workers. However, it will also negatively affect the incidence of job change for risk-averse individuals.

Another interpretation of these results is possible from a different perspective. The impact of changing from performance pay to a fixed-rate pay of 65 PHP from the

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[10] More precisely, risk averse-individuals are less likely to accept an offer with performance pay that is paid once every three days.

previous analysis was negative. The positive coefficient of interaction of the fixed-rate pay and risk averseness suggests that the negative effect of 65 PHP per day becomes smaller if an individual is more risk averse.

Finally, we examined the heterogeneity of the impact on differences in time preferences. Note that we found no significant correlation between a high discount rate and the decision to change jobs. On the other hand, we found a negative and significant impact when changing from payment every three days to daily payments. The result presented in Table 6 shows a positive coefficient from the estimation of the interaction term of *Daily payment* and *Discount rate*. This implies, on average, that changing the frequency of the payment from once every three days to daily payments decreases the probability that an individual will accept a job. However, the magnitude of this decrease in probability will be lesser if an individual has a high discount rate.

5. Conclusions

Environmental policies often force job changes for workers in various industries, and this can be considered a social cost of environmental policies. Considering the negative impact of such policy interventions, including the job loss caused by the closure of an open dump site, those who operate waste management services face an increasing normative expectation to handle the issues responsibly by providing alternative opportunities of employment for current waste pickers. This study involved a field experiment at a dumpsite in the Philippines to examine the effect of various payment schemes for alternative employment and the number of waste pickers accepting the offer. In addition, offers that minimize the moral hazard while maximizing the number of individuals interested in a job change have been explored. This study provides

practical insight to thousands or even millions of municipalities that have open dumpsites.

We found that a change in payment frequency from once every three days to daily payments decreases the probability that an individual will accept a new job offer, which is apparently counter-intuitive to the monotonicity assumption of the discount rate. We interpreted this as evidence of self-control, a possible representation of complexity and richness in the waste picker's decision schema behind job change. As a result, this study examined a method to resolve both the moral hazard and the self-control problem all at the same time. Performance pay that is paid once every three days can mitigate the self-control problem of savings while solving the moral hazard at work.

We also discovered that it is more difficult to encourage a job change for males compared to females, especially those who are the only ones earning an income in a household and who are risk averse. Using performance pay schemes, we could only encourage 7 to 27 percent of the recipients to change their job. With this result, there would still be a significant cost to improve waste management policies. Further studies are required in order to explore how to encourage those who did not accept the offer in this study. This present study modeled the job change behavior of waste pickers as a decision made by an individual alone. This assumption might need to be modified, as the decision to change one's job is not only the concern of an individual but also the entire household. The idea of providing an alternative job with less frequent payments as a commitment device for mitigating the self-control problem would be useful for future studies.

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Table 1 *Summary Statistics of Waste Pickers at Iloilo*

		All	Female	Male
Female (%)		52.10	100	0
Age	Mean	34.87	37.32	32.19
	(Std.Dev.)	(12.90)	(13.05)	(12.24)
	Min	18	18	18
	Max	68	68	65
Years of education	Mean	6.98	7.33	6.59
	(Std.Dev.)	(2.81)	(2.89)	(2.67)
	Min	0	0	0
% not graduated from primary school (Years < 6)		21.85	19.35	24.56
% graduated from primary school only (Years = 6)		28.99	24.19	34.21
% graduated with more than primary school (Years > 6)		49.16	56.45	41.23
	Max	13	13	12
Years of picking waste	Mean	10.71	11.08	10.31
	(Std.Dev.)	(7.10)	(7.10)	(7.10)
	Min	0.083	0.083	0.083
	Max	30	30	30
Working days per month	Mean	23.41	23.59	23.22
(out of 31 days)	(Std.Dev.)	(6.43)	(6.42)	(6.47)
	Min	5	8	5
	Max	31	30	31
Daily earnings [A]	Mean	123.69	105.23	143.78
(PHP/day)	(Std.Dev.)	(67.39)	(60.56)	(68.93)
	Min	30	30	30
	Max	480	390	480
Working time per day [B]	Mean	6.89	6.61	7.20
(hours/day)	(Std.Dev.)	(1.88)	(1.88)	(1.83)
	Min	1	1	2
	Max	11	10	11
Average hourly earnings [A/B]	Mean	18.63	16.51	20.94
(PHP/hour)	(Std.Dev.)	(10.11)	(8.41)	(11.27)
	Min	3.75	3.75	6.25
	Max	75	50	75
Owns a mobile phone (%)		26.47	21.77	31.58
Selling to the association (%)		32.77	31.45	34.21
No other income earner in HH (%)		26.89	15.32	39.47
No other job (%)		64.29	74.19	53.51
Wants to join PB production (%)		89.92	89.52	90.35
Observations		238	124	114

Notes: Means are reported. Standard deviations are in parentheses. One observation is missing in the all and male columns for *Years of picking waste* and in the all and female columns for *Working days per month*.

Table 2 *Payment Schemes of the Four Groups*

Group	1	2	3	4
Way to determine the level of the salary	Performance pay	Performance pay with a draw	Fixed-rate pay	Performance pay
	1 PHP per four pieces of production	A draw of 30 PHP per day, and 1PHP per four pieces of additional production greater than 150 pieces	65 PHP per day	1 PHP per four pieces of production
Frequency of the payment	Once every three days			Daily

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Table 3 *Summary Statistics*

Group		1	2	3	4
Payment schemes	All the recipients of the letter	Perform. pay once every three days	Perform. pay once every three days with a draw	Fixed-rate pay once every three days	Perform. pay daily
Female	0.500	0.500	0.536	0.471	0.500
	(0.502)	(0.512)	(0.508)	(0.507)	(0.509)
Age	34.62	33.36	35.93	34.94	33.89
	(12.36)	(12.70)	(13.38)	(13.41)	(10.00)
Years of education	7.246	7.114	7.321	7.147	7.393
	(2.692)	(2.600)	(2.389)	(2.893)	(2.923)
Average hourly earnings	19.99	22.05	22.30	16.75	20.00
	(11.46)	(15.22)	(13.48)	(7.831)	(9.013)
Selling to the association	0.348	0.227	0.357	0.382	0.393
	(0.479)	(0.429)	(0.488)	(0.493)	(0.497)
No other income earner in HH	0.196	0.136	0.214	0.206	0.214
	(0.399)	(0.351)	(0.418)	(0.410)	(0.418)
No other job	0.688	0.636	0.714	0.735	0.643
	(0.466)	(0.492)	(0.460)	(0.448)	(0.488)
Wants to join PB production	0.920	0.909	0.964	0.971	0.821
	(0.273)	(0.294)	(0.189)	(0.171)	(0.390)
Risk averseness	6.768	7.318	6.179	6.735	6.964
	(2.238)	(1.912)	(2.611)	(1.912)	(2.411)
Discount rate	3.027	2.500	3.286	3.000	3.214
	(2.033)	(1.946)	(2.141)	(2.000)	(2.061)
Willingness to accept closure	5541	5568	5536	5909	5058
	(3016)	(2331)	(2899)	(3694)	(2787)
Observations	112	22	28	34	28
Number of the submissions	55	14	10	19	12
Share of the submissions (%)	49.1	63.6	35.7	55.9	42.9
Number accepting job change	17	6	5	4	2
Share of those accepting job change (%)	15.2	27.3	17.9	11.8	7.1

Notes: Means are reported. Standard deviations are in parentheses. One observation in group three and two observations in group four lack data in the *Willingness to accept closure* category. *Risk averseness* is assessed on a scale from 1 to 8, with higher values meaning an individual is highly risk averse. A risk-seeking individual would receive a value between 1 and 3, a risk-neutral individual would receive a value of 4 or 5, and a risk-averse individual would receive a value between 6 and 8. *Discount rate* is assessed on a scale from 1 to 6, with higher values meaning the discount rate of an individual is high and the individual is impatient. *Willingness to accept closure* measures the stated opportunity cost (in PHP) of closing the dumpsite for a month in December in 2013.

Table 4 *Accepting a Job Offer: Coefficients (Logit Estimations)*

Dependent variable is 1 if the offer is accepted and 0 otherwise.

	(1)	(2)	(3)	(4)
Performance pay with a draw	-0.5452	-0.9014	-1.1038	-1.1969
	(0.6906)	(0.7818)	(0.7610)	(0.8235)
Fixed-rate pay	-1.0341	-1.4138*	-1.6915*	-1.5543*
	(0.7191)	(0.8177)	(0.9374)	(0.8986)
Daily payment	-1.5841*	-2.2260**	-2.1712**	-2.4438**
	(0.8801)	(1.0005)	(0.9529)	(1.0076)
Female		1.6071**	1.4664**	1.5604*
		(0.6977)	(0.7283)	(0.8103)
Age		0.0039	0.0058	0.0152
		(0.0290)	(0.0317)	(0.0355)
Years of education		0.0074	0.0335	0.0320
		(0.1077)	(0.1147)	(0.1220)
Average hourly earnings		0.0171	0.0191	0.0373
		(0.0255)	(0.0264)	(0.0311)
Selling to the association		1.7475***	1.7488***	2.0995***
		(0.6005)	(0.6334)	(0.6603)
No other income earner in HH		-1.5853	-1.7054*	-2.0844*
		(1.1572)	(1.0360)	(1.0898)
No other job		-0.3412	-0.4404	-0.2391
		(0.8007)	(0.8284)	(0.8559)
Wants to join PB production		0.4375	1.0929	1.6963
		(1.2320)	(1.2197)	(1.4254)
Risk averseness			-0.1716	-0.2296*
			(0.1404)	(0.1295)
Discount rate			0.0761	0.0698
			(0.1829)	(0.2000)
Willingness to accept closure				-0.0002
				(0.0001)
Observations	112	112	112	109
Log-likelihood	-45.55	-37.55	-36.65	-34.90
Wald χ squared	3.992	24.78	24.07	29.49
Pseudo R squared	0.0449	0.2125	0.2315	0.2605

Notes: Coefficients are reported. Robust standard errors are in parentheses. *** Indicates statistical significance at the 1% level. ** Indicates statistical significance at the 5% level. * Indicates statistical significance at the 10% level. Constant terms are not reported.

Table 5 *Accepting a Job Offer: Marginal Effects (Logit Estimations)*

Dependent variable is 1 if the offer is accepted and 0 otherwise.			
	(1)	(2)	(3)
Performance pay with a draw	-0.172		
	(0.137)		
Fixed-rate pay		-0.225*	
		(0.134)	
Daily payment			-0.304**
			(0.150)
Variables that are set to zero or their mean value.			
Performance pay with a draw	Mean	Zero	Zero
Fixed-rate pay	Zero	Mean	Zero
Daily payment	Zero	Zero	Mean
Variables that are set to their mean values.			
Female, Selling to the association,			
No other income earner in HH,		Mean	
and Risk averseness			
Observations	112	112	112

Notes: Marginal effects of three variables pertaining to the payment scheme are reported. Robust standard errors are in parentheses. ** Indicates statistical significance at the 5% level. * Indicates statistical significance at the 10% level. Three variables of interest (i.e., performance pay with a draw, fixed-rate pay, and daily payment) and four other independent variables that are significant in models of Table 4 (female, selling to the association, no other income earner in HH, and risk averseness) are included in all of the three models 1–3 as explanatory variables.

Model 1) Marginal effects are calculated with the following values: fixed-rate pay = 0 and daily payment = 0. The rest of the variables are set to their mean values.
Model 2) Marginal effects are calculated with the following values: performance pay with a draw = 0 and daily payment = 0. The rest of variables are set to their mean values.
Model 3) Marginal effects are calculated with the following values: performance pay with a draw = 0 and fixed-rate pay = 0. The rest of variables are set to their mean values.

Table 6 *Accepting a Job Offer with Interaction Terms: Coefficients (Logit Estimations)*

Dependent variable is 1 if the offer is accepted and 0 otherwise.

	(1)	(2)
Performance pay with a draw	-6.1505***	-6.7956***
	(2.0014)	(2.2229)
Performance pay with a draw * Risk averseness	0.7054**	0.7435**
	(0.3024)	(0.3353)
Fixed-rate pay	-8.9772***	-10.5367***
	(2.4217)	(2.7515)
Fixed-rate pay * Risk averseness	1.0635***	1.2416***
	(0.3573)	(0.3854)
Daily payment	-9.0655***	-9.4836***
	(2.2573)	(2.4396)
Daily payment * Discount rate	1.5801***	1.6034***
	(0.4920)	(0.5169)
Risk averseness	-0.8092***	-0.9847***
	(0.2128)	(0.2555)
Discount rate	-0.1824	-0.1481
	(0.1874)	(0.1896)
Female	2.3772**	2.3971**
	(0.9250)	(0.9913)
Age	-0.0062	-0.0075
	(0.0270)	(0.0312)
Years of education	0.0958	0.0673
	(0.1211)	(0.1114)
Average hourly earnings	0.0320	0.0404
	(0.0256)	(0.0272)
Selling to the association	2.2101***	2.4994***
	(0.7997)	(0.8057)
No other income earners in the HH		-1.5356
		(1.1694)
No other job		-0.2678
		(0.9990)
Wants to join PB production		2.7827**
		(1.2678)
Observations	112	112
Log-likelihood	-33.77	-31.71
Wald χ squared	30.11	31.96
Pseudo R squared	0.2918	0.3351

Notes: Coefficients are reported. Robust standard errors are in parentheses. *** Indicates statistically significant at the 1% level. ** Indicates statistically significant at the 5% level. * Indicates statistically significant at the 10% level. Constant terms are not reported.