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ABSTRACT

Employer and Employee Preferences for Worker Benefits: Evidence from a Matched Survey on the Bangladesh Informal Sector*

Informality is ubiquitous in the labor markets of developing countries, and requiring that firms formally register, pay taxes, and provide employee benefits stipulated in labor regulations to reduce such informality is challenging. However, a matched survey on employer-employee preferences suggests that mutually beneficial job benefits exist, and that encouraging their adoption might be feasible. Carefully designed discrete choice experiments on combinations of benefits related to compensation, leave and termination policies, working conditions, and accident insurance, along with incentives for employers, reveal the relative values that workers and employers attach to each benefit. The results show that workers tend to value advance notice for job termination and accident insurance, and that employers are not averse to providing these benefits. In contrast, workers find long working hours without overtime compensation to be highly undesirable, whereas many employers are generally unwilling to provide shorter hours or overtime pay unless they face the threat of fines or are offered substantial incentives for doing so. Our findings therefore suggest that encouraging the provision of termination notice and accident insurance may be relatively easy, but that increasing compliance with legal limits on working hours and overtime compensation is likely to require increased enforcement or substantial incentives.

JEL Classification: J46, J32, J81

Keywords: informality, worker benefits, discrete choice experiments

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1. Introduction

Informal employment is ubiquitous in developing countries. Not only do informal enterprises – typically defined as those that are not registered with a government agency, or are below a certain size (ILO, 1993) – tend to be less productive than formal enterprises, but workers in these enterprises also earn lower wages and are less likely to receive benefits or protection of any kind.

Cross-country patterns suggest that the share of informality tends to fall with rising incomes in the long run (LaPorta and Shleifer, 2008), and there have been many efforts that encourage informal enterprises to formalize by having them register, pay taxes, and abide by labor regulations.[6] However, many developing countries have experienced continued, high levels of informality – or even increases in informality – despite strong economic growth (Bangladesh Bureau of Statistics, 2011; National Sample Survey Office, 2014; ILO, 2014). In cases where informality has fallen, the most vulnerable workers – including those who are less educated, elderly, or rural – are least likely to make the transition to formality (McCaig and Pavcnik, 2015).

A large share of jobs is thus likely to remain informal (defined, for our purposes, as lacking in comprehensive benefits) in many countries for the foreseeable future. Given this persistence, a critical policy question is how to improve the quality of jobs for workers who remain in the informal sector. Moreover, the many aspects typically associated with formal or "good" jobs – higher pay, well-enforced health and safety standards, termination notice, and a variety of insurance and benefit programs – can be available to varying degrees in different jobs.[7] Even if a worker is employed in an informal enterprise, his or her job quality may be improved by providing access to the more critical dimensions of formality.

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[6] See Tokman (1989); Fields (1990); Portes and Schauffler (1993); de Andrade et al. (2016), for instance.
[7] Recently, Farole and Cho (2017) suggests that formality is associated with higher earnings by over 10 percent in Bangladesh, controlling for other factors.

This study uses choice experiments conducted with employers and employees in small and medium enterprise (SME) clusters in Bangladesh to address the following questions: What features of formality are most valuable to informal workers? What features of formality are employers of these workers most willing to provide to their workers, and what benefits of formality would they most prefer to receive in return? While policymakers may seek to eventually extend the full suite of benefits associated with formal jobs to all workers, attempting to enforce all aspects of formality on informal enterprises may lead them to go "underground," which could make their workers even less visible to authorities and thus reinforce informality. In the short run, therefore, it is important to prioritize those benefits that will be most valued by workers and that employers are most willing to provide.

An important contribution of our work is that it is, to our knowledge, the first study to use a stated preference (choice experiment) method to elicit employers' preferences regarding the job benefits they may be willing to provide. It is also one of only a handful of studies that use such methods to elicit workers' preferences for job benefits. Early estimates of preferences for job benefits relied on hedonic methods; however, it is well-established that unobserved heterogeneity among workers or firms can bias these estimates (Hwang et al., 1992; Hwang et al. 1998). Some studies have attempted to overcome these difficulties using panel data (Brown, 1980; Duncan and Holmlund, 1983), or by examining job duration (Gronberg and Reed, 1994; Reed and Dahlquist, 1994). More recently, several studies estimate job search models to identify the total value of non-wage attributes (Sullivan and To, 2014; Hall and Mueller, 2018), the contribution of non-wage attributes to variation in observed wages (Taber and Vejlin, 2016; Sorkin, 2018); and the valuation of specific job attributes (Dey and Flinn, 2005, 2008; Bonhomme and Jolivet, 2009).

However, estimating job search models requires a rich set of longitudinal data on worker transitions, which are often unavailable in developing countries, and even when available may not

include informal workers. In addition, a number of job benefits are rarely observed among informal workers; in such cases, we would not be able to use revealed preference techniques to estimate informal workers' valuation of those benefits. Our study therefore complements the existing body of work by demonstrating how worker preferences may be measured in the absence of revealed preference data.

The matched nature of the choice experiment we conduct is also novel. Choice experiments are used extensively in the marketing, environmental, health and transportation literatures, and a handful of recent studies have applied these techniques to elicit workers' preferences for job attributes. Ubach et al. (2003) and Scott et al. (2004) focus on specific health care occupations. Assy et al. (2018) estimate youth preferences for different jobs attributes, and their willingness to pay (WTP) for support services to access wage or self-employment in Kenya. The study most closely related to our current work is a choice experiment carried out by Mahmud et al. (2017), which examines WTP for specific job benefits among 2,000 workers (including formal, informal, and self-employed workers) in Bangladesh. We build on Mahmud et al. (2017) by examining the extent to which informal workers' preferences are aligned (or not) with their employers' preferences.

This study is also, to our knowledge, the first matched employer-employee survey of informal firms and workers. A growing body of literature leverages matched employer-employee surveys to more carefully examine a number of workplace issues including firm and worker productivity, wage dispersion, and the relationship between firm size, age, and wages (see, among others, Hellerstein and Neumark 2005, 2007; Heyman 2005, 2007; Dix-Carneiro and Kovak, 2015). Matched employer-employee surveys can also reveal similarities and differences between employers and employees with respect to assessment of working conditions. For instance, Brown et al. (2015) examine the relationship between working conditions and firm performance using

matched employer-employee data from garment factories in the *Better Work Vietnam* program. Also examining *Better Work Vietnam* factories, Domat et al. (2013) find that there are substantive differences between how perceptions of workers versus managers are related to workers' actual well-being, which they argue may lead to managers providing non-optimal levels of amenities. In Bangladesh, the World Bank surveyed 500 enterprises in the manufacturing, finance, commerce, education, and public administration sectors, along with 6,981 of their employees, in 2012. The World Bank survey focused on education and skill development, and thus covered relatively large enterprises (with 10 or more employees), in sectors that were considered relatively "formal" (World Bank, 2013). Our work contributes to this literature by examining the match between informal employees' and employers' reports of, and preferences for, job benefits.

The remainder of this paper is organized as follows. Section 2 summarizes the survey methodology, the choice experiment design, and the empirical methods; Section 3 provides a brief summary of the employer and employee characteristics; Section 4 presents results; and Section 5 concludes.

2. Methodology

In this section, we provide an overview of the sampling framework, discuss the design of the choice experiment, and present the methods used to analyze the data from the experiment.

2.1 Sampling framework

We carried out the survey of informal employers and employees during the fall of 2016. There is no standard definition in the literature of what constitutes an "informal" enterprise or an "informal" worker. When defining informality in terms of the enterprise, one commonly used definition is an enterprise that is not registered with the government. Under this definition, wage

workers in unregistered firms, as well as the self-employed and family members who work in household businesses, are considered informally employed. The tension of defining informality in terms of enterprises versus jobs is particularly evident in the context of Bangladesh, where registration is multi-faceted and does not automatically mean formality. Zohir and Choudhury (2012) note the existence of "three basic instruments" – trade licenses, specialized licenses, and certificates of incorporation (COI) – for firms' registration.[8]

Alternatively, informality can be defined in terms of the *worker*, irrespective of the type of enterprise. In this case, workers who do not receive certain protections or benefits, who work in unsafe conditions, or who are compelled to are required to work overtime, may be considered informal, even if they work for registered firms (ILO, 2014). We follow the spirit of this approach in defining formality as a *continuum* of benefits that workers could receive, rather than viewing informality and formality as discrete states.

Since our goal was to conduct a matched employer-employee survey, and to examine benefits offered to paid workers, we focused on SMEs that had at least one paid, non-family member as an employee.

To identify sample SMEs, we started with a report by the SME Foundation, which identified, mapped and surveyed 177 SME clusters throughout Bangladesh in 2011. The SME Foundation focused its mapping on 11 sectors identified as "SME Booster Sectors" by the 2005 SME Policy Strategy, as well as two additional sectors.[9] From this list of 177 clusters, we identified

[8] They note that trade licenses are nearly ubiquitous, and are relatively easy to acquire, and that the authorities appear to enforce the requirement for obtaining a trade license to conduct business, especially outside of Dhaka. Registering to pay Value Added Tax (VAT) and obtaining a Tax Identification Number (TIN) certificate are less common, and COI – what the authors refer to as "registration" – is much less common and much more burdensome to acquire.

[9] Agro-processing /Agri-business / Plantation; Light engineering and metal working; Knitwear and readymade garments; Designer, athletically challenging, personal wear and effects; Leather making and leather goods; Healthcare and diagnostics; Plastics and other synthetics; Electronics and electrical; Educational services; Software development; Pharmaceutical / Cosmetics / Toiletries; Handicrafts and miscellaneous sectors; Handloom and specialized textiles.

58 clusters located in the city of Dhaka and surrounding districts (Dhaka, Faridpur, Gazipur, Manikganj, Munshiganj, Narayanganj, and Narsingdi), as well as in the city of Chittagong and nearby districts (Chittagong, Feni).

Since the SME Foundation cluster mapping was conducted in 2011, the survey team visited each cluster location and was able to verify 55 out of 58 clusters in the reported locations.[10] Within each cluster, we targeted 16 enterprises. To select specific enterprises, the team used a random walk method. Only firms with at least one paid, non-family member employee, were included. For eligible firms, permission was sought to conduct an interview with the employer or employer's representative, along with permission to return at a later date and interview a certain number of employees. The enumerator also created an employee roster based on the employer's listing of employees. If there were up to four employees, all employees were approached for an interview. If there were more than four employees, four were randomly selected from the employee roster. Details of the enterprise selection process and replacement procedures are further elaborated in Appendix A.

2.2 Choice Experiment Design

Both the employee and employer surveys included a carefully designed stated choice experiment to examine whether some features of formality could be extended to employees in the informal sector. In a choice experiment, respondents make repeated choices between the alternatives, characterized by various attributes, presented to them (see Louviere et al., 2000). The choice experiments were designed to elicit tradeoffs between wages and specific job benefits for

[10] The number of clusters by district and sector is shown in Appendix Table A.1.

employees, and between provision of certain worker benefits and fines (or forgone benefits for the firm) for employers.

The benefits and working conditions we included were: termination notice provided by the employer; termination notice that the *employee* was required to provide; paid vacation (known as casual leave); hours worked per week and whether overtime pay was given; and accident insurance (whether the employer would cover medical expenses for any job-related injuries or illnesses). In the employee survey we also included monthly salary (percent increase from the salary the worker was receiving at the time). We specified that overtime pay, when offered, would be *in addition to* the change in base monthly income, for hours worked beyond the first 48.

For employers, we developed two different tradeoffs: a "stick" approach and a "carrot" approach. In the "stick" tradeoff, employers were told that fines would be levied if the job attributes did not comply with standard provisions of the Bangladesh Labour Law.[11] In the "carrot" tradeoff, the employers were offered different types of assistance (e.g, technical assistance for marketing, concessional loans).

We selected the specific attributes and their levels to be as realistic as possible, based on a review of the Bangladesh Labour Law, discussions with policymakers and other stakeholders, focus groups with informal employees and employers, and a pilot survey.

The choice experiment was accompanied by survey modules that collected basic information about the respondent and his/her job at the firm, including benefits received. Similarly,

[11] Specifically, a fine was possible if the job did not include at least 10 days of leave, if it required working more than 60 hours per week, or if overtime pay was not offered for any hours above 48. Note that the experimental design did not always include a fine if these requirements were not met in an alternative employment; rather, if the requirements were met, the fine was always given as "not applicable" in case of the particular employment.

the employer survey gathered basic information about the respondent, the firm, and the benefits typically provided to its workers.

2.2.1 Employee Choice Experiment

We told employees that we would present them with two hypothetical employment opportunities, each with different levels of the following attributes: termination notice that the employer would provide, termination notice that would be required of the employee, paid leave, working hours and overtime pay, accident insurance (whether the employer would cover medical costs for on-the-job injuries), and monthly income. We asked them to assume that all other attributes not presented in the scenario were identical between the two jobs, and we did not label the alternatives (for example, we did not label one job as "formal" and another as "informal") to avoid respondents making assumptions about other aspects of the jobs based on the labels. Each respondent was then asked to indicate which of the two jobs he or she would select.

Table 1 below provides an example of a choice offered to an employee. The employee might prefer certain attributes of Job A rather than Job B – for example, Job A requires 60 days of termination notice from the employer whereas Job B only requires 30 days. However, Job B offers 10 days of paid leave, against only 5 days for Job A. Similarly, the employee might prefer Job A because it offers overtime pay and accident insurance, or Job B because it requires fewer days of employee notice and offers 20% higher pay rather than 10%.

Table 1: Example Choice for Employees

	JOB A	JOB B
Notice that employer must give before terminating a worker	60 days	30 days
Notice that employee must give before leaving job	15 days	7 days
Paid casual leave that employees receive (excluding government holidays and festival leave)	5 days paid leave	10 days paid leave
Hours worked by employees and overtime pay	60 hours (48 hours plus 12 hours WITH overtime)	60 hours (48 hours plus 12 hours WITHOUT overtime)
Accident insurance for employees (covers doctor/hospital costs if get injured/sick because of job)	Employer provides	Employer does not provide
Monthly income from this job	10% higher than your current monthly income	20% higher than your current monthly income

Note: Example shows a potential choice offered to an employee.

Table 2 shows the full set of attributes and levels that could be offered to employees. As noted above, these attributes and levels were selected to closely reflect the real options available in the Bangladeshi labor market. We refined initial selections in a number of ways, based on focus groups with informal employees and a pilot survey. Two key refinements are worth noting. First, the levels for income included only increases rather than decreases; given the very low levels of income among informal employees in the SME clusters, offering a lower income generally resulted in immediate rejection of the choice scenario. Second, to more closely resemble observed

conditions, we restricted the termination notice levels so that the notice given by employers was always at least as high as the notice required of employees.

Table 2: Full Set of Attributes and Levels for Employees

Attributes	Levels
Notice that employer must give before terminating a worker	None 15 days 30 days 60 days
Notice that employee must give before leaving job	None 7 days 15 days 30 days
Paid casual leave that employees receive (excluding government holidays and festival leave)	None 5 days 10 days 15 days
Hours worked by employees and overtime pay	48 hours/week 60 hours/week (48 hours plus 12 hours WITHOUT overtime) 72 hours/week (48 hours plus 24 hours WITHOUT overtime) 60 hours/week (48 hours plus 12 hours WITH overtime) 72 hours/week (48 hours plus 24 hours WITH overtime)
Accident insurance for employees (covers doctor/hospital costs if get injured/sick because of job)	Employer provides accident insurance Employer does not provide accident insurance
Monthly income from this job	Same as now 10% increase over current income 20% increase over current income 30% increase over current income

Note: Levels of each attribute included in employee choice experiment.

2.2.2 Employer Choice Experiment

Table 3, Panel A, shows an example choice that employers might be offered under the "stick" or fine version. The employer might prefer Option A because it requires providing only 7 days of notice to employees, does not require providing accident insurance, and does not entail a fine. However, Option B might be preferable because it includes 7 days of notice from employees, requires the employer only provide 5 days of paid leave, and does not include payment for overtime work. Note that for Option A, the fine is deemed "not applicable" because the option complies with the Labour Law in terms of the standard amount of paid leave (10 days per year) and working

hours / overtime pay. In contrast, Option B includes a fine of 5,000 Taka, for not complying with the Labour Law (since only 5 days of paid leave are offered, and overtime is not given for the hours above 48).

Table 3: Example Choice for Employers

Panel A: Fine ("stick") version

Attributes	**Option A**	**Option B**
Notice that employer must give before terminating a worker	7 days	30 days
Notice that employee must give before leaving job	None	7 days
Paid casual leave that employees receive (excluding government holidays and festival leave)	10 days paid leave	5 days paid leave
Hours worked by employees and overtime pay	60 hours (48 hours plus 12 hours with overtime pay)	60 hours (48 hours plus 12 hours without overtime pay)
Accident insurance for employees (covers doctor/hospital costs if get injured/sick because of job)	Employer does not provide	Employer provides
Fine for not complying with the Labour Law, which requires at least 10 days paid casual leave, no more than 60 hours work/week, any hours above 48 must be paid overtime	Not applicable	5,000 Taka

Panel B: Assistance ("carrot") version

Attributes	**Option A**	**Option B**
Notice that employer must give before terminating a worker	7 days	30 days
Notice that employee must give before leaving job	None	7 days
Paid casual leave that employees receive (excluding government holidays and festival leave)	10 days paid leave	5 days paid leave
Hours worked by employees and overtime pay	60 hours (48 hours plus 12 hours WITH overtime)	60 hours (48 hours plus 12 hours WITHOUT overtime)
Accident insurance for employees (covers doctor/hospital costs if get injured/sick because of job)	Employer does not provide	Employer provides
Assistance	Access to low-interest (9%) loan with easy terms	None

Note: Example shows a potential choice offered to an employer in the fine version (Panel A) and Assistance version (Panel B).

In the "carrot" tradeoff (Panel B), employers may be offered a benefit provided by the government: either a low-interest (9%) loan on easy terms,[12] assistance with marketing the enterprise's goods or services, or both.

Table 4: Full Set of Attributes and Levels for Employers

Panel A: Common Set of Attributes	
Attributes	Levels
Notice that employer must give before terminating a worker	7 days 15 days 30 days 60 days
Notice that employee must give before leaving job	None 7 days 15 days 30 days
Paid casual leave that employees receive (excluding government holidays and festival leave)	None 5 days 10 days 15 days
Hours worked by employees and overtime pay	48 hours/week 60 hours/week (48 hours plus 12 hours WITHOUT overtime) 72 hours/week (48 hours plus 24 hours WITHOUT overtime) 60 hours/week (48 hours plus 12 hours WITH overtime) 72 hours/week (48 hours plus 24 hours WITH overtime)
Accident insurance for employees (covers doctor/hospital costs if get injured/sick because of job)	Employer provides accident insurance Employer does not provide accident insurance
Panel B: Attributes Specific to Fine Version	
Fine for not complying with the Labour Law (Labour Law requires at least 10 days paid casual leave, no more than 60 hours work/week, any hours above 48 must be paid overtime)	Not applicable 2,000 Taka 5,000 Taka 10,000 Taka
Panel C: Attributes Specific to Assistance Version	
Assistance	None Access to low-interest (9%) loan with easy terms Government will provide 10,000 Taka per year for marketing expenses Access to loan plus marketing assistance

Note: Levels of each attribute included in employer choice experiment.

[12] The interest rate of 9% was selected based on discussions with the SME Foundation about the types of loans they provide.

Table 4 shows the full set of attributes and levels that could be presented to employers in both the fine and assistance versions. Panel A shows the comment set of attributes, while Panels B and C show the attributes specific to the fine and assistance versions, respectively. As for employees, these attributes and levels were selected to mimic real conditions, and refined through focus groups with informal employers and a pilot survey.

2.2.3 Experimental Design and Implementation

Given the numbers of attributes and levels, we could not include all possible combinations in the choice experiment. Therefore, we created the choice sets that were actually offered to respondents using a D-optimal design to ensure that the main effects (the effects of each attribute on utility) could be identified.[13] The attributes and levels were combined to create 48 choice sets (that is, 48 different combinations of two alternatives) for each type of experiment (employee, employer fine, employer assistance). To mitigate fatigue and cognitive burden, the 48 scenarios were divided into 8 blocks, each with 6 choice sets. For employees, each respondent was randomly assigned one block of 6 choice sets. Similarly, for employers, each respondent was randomly assigned one block related to one set of tradeoffs; about half the employers were given the "stick" tradeoff and another half were given the "carrot" tradeoff.

The enumerators conducting the experiment were trained regarding the purpose and appropriate methods for implementing the choice experiment. Each enumerator carefully explained the attributes to the respondents prior to the experiment. Each respondent was given one practice choice as an example; the results from this example were used to illustrate how the choice experiment would work, and data from the example choices are not included in the analysis. The

[13] D-optimal design ensures that the alternatives give more information about the tradeoffs between different attributes (see Carlsson and Martinsson 2003).

enumerators were asked to conduct the actual choice experiment once they were convinced that the respondent understood the choice situation.

2.3 Model Estimation

An individual's choice among alternatives can be viewed in terms of random utility maximization (RUM) theory (McFadden 1973), which assumes that the utility an individual receives from a particular choice *i* depends on the attributes x_i associated with that choice. For example, in a choice experiment for employees, the *n*th respondent is offered a hypothetical choice between jobs with different bundles of attributes, where the utility of alternative *i* is:

$$U_{ni} = v(x_i; \beta) + \varepsilon_{ni} \qquad (1)$$

The term ε_{ni} captures characteristics that are unobserved by the researcher. Individuals are assumed to choose the alternative that maximizes their utility, so the probability that individual *n* selects alternative *i* from choice set *S* is:

$$Pr_n(Y = i) = Pr_n(v_i + \varepsilon_i > v_j + \varepsilon_j) = Pr_n(v_i - v_j > \varepsilon_j - \varepsilon_i), \forall j \neq i \quad (2)$$

Assuming that the unobserved errors are independent and identically distributed with a Type 1 extreme value distribution, and that the utility function is linear-in-parameters, we can write the probability that individual *n* chooses alternative *i* using a standard conditional logit framework:

$$Pr_n(Y = i) = \frac{\exp(x'_i\beta)}{\sum_{j \in S} \exp(x'_j\beta)}$$

and estimate the coefficients using maximum likelihood techniques.

To relax the standard model's assumption that preferences are homogeneous, we also estimated a latent class model, which allows preferences to vary across different groups of

individuals. Conditional on being in class *C*, the probability that individual *n* chooses alternative *i* is:

$$Pr_{n|c}(Y = i) = \frac{\exp\,(x'_i \beta_c)}{\sum_{j \in S} \exp\,(x'_j \beta_c)}$$

We can estimate the probability that an individual *n* is in a particular class *c* based on his or her observable characteristics z_n (Swait, 1994; Boxall and Adamowicz, 2002):

$$Pr_{nc} = \frac{\exp\,(z'_n \delta_c)}{\sum_c \exp\,(z'_n \delta_c)}$$

Therefore, the *unconditional* probability of observing individual *n* choosing alternative *i* is simply the probability that the individual is in class *c*, times the probability of choosing alterative *i* conditional on being in class *c*, summed over all classes:

$$Pr_n(Y = i) = \sum_c \Pr_{nc} * \Pr_{n|c}\,(Y = i)$$

We use an expectation algorithm to estimate the preference parameters (β_c) and the class membership parameters (δ_c).

Once the parameters have been estimated, the ratio between the parameter estimates for any two attributes *k* and *m* yields the marginal rate of substitution (MRS) between them:

$$MRS_{km} = \frac{\partial U / \partial x_k}{\partial U / \partial x_m} = \frac{\beta_k}{\beta_m} \qquad (7)$$

For employees, one of the attributes is monthly income, so the monetary value of any other attribute can be estimated by taking the ratio between the coefficient on that attribute and the coefficient on salary. The MRS can then be interpreted as willingness to forego an increase in income in order to obtain the attribute. Similarly, for employers who are asked to make a tradeoff between offering certain worker benefits or paying fines, the marginal value of any attribute can

be estimated by taking the ratio of the coefficient on that attribute and the coefficient on the fine. In this case, the MRS can then be interpreted as willingness to pay a fine of a certain amount in order to not have to provide the attribute. For those employers who are offered incentives in exchange for the provision of worker benefits, the monetary value cannot be estimated, but the relative value associated with an attribute can still be estimated by examining the MRS between attributes.

3. Sample Characteristics

Our final sample included 858 employers and 2,568 employees in 55 SME clusters within 11 sectors. About 70 percent of the employers reported that their enterprises were registered; nearly all of these enterprises were registered with a local organization such as a City Corporation or municipality (that is, they had trade licenses, which as noted above are common). About 40 percent were registered for a tax ID number, and about 20 percent were registered to pay value added taxes (VAT). The number of paid employees ranged from one to 40, with a median of four.

Table 5 presents summary statistics on the employer and employee samples. On average, employees are younger with an average age of 26 years, compared to 37 years for employers. Both samples are heavily tilted towards males with men comprising 96 percent of employers and 89 percent of employees.[14] Comparing across the two samples, we observe that employers tend to have higher educational attainment, with a greater proportion completing secondary schooling or higher.

[14] Given the low level of female labor force participation around 35 percent in 2015, and high presence of female workers in agriculture and self-employment, male domination of workplaces is unsurprising. However, it is interesting to note that the share of female workers in these small firms is far lower than the share in larger enterprises especially in the garment sector. See World Bank (2017) for a detailed discussion.

Table 5: Employer and Employee Demographics

		Employers	Employees
Female		4.4%	10.6%
Age	25 and under	12.5%	59.2%
	26-35	39.2%	26.7%
	36-45	30.3%	9.7%
	46-55	13.6%	3.0%
	56+	4.4%	1.5%
Education	Less than primary	6.8%	11.0%
	Some primary	29.4%	53.5%
	Some secondary	26.3%	25.4%
	Some high school	18.1%	5.2%
	High school degree	9.1%	1.7%
	Bachelor's degree or higher	8.5%	2.8%
	Missing	1.9%	0.4%
N		858	2,568

Note: Summary statistics based on sample of employers and employees.

We also asked respondents about job benefits and working conditions. A key feature of the matched survey is that we asked both employers and employees about the benefits that employees receive, thus allowing us to examine whether their answers match *pairwise*. We asked employees about the benefits they *personally* received. We asked employers to report benefits given to the *typical* employee. Therefore, it is important to note that some amount of mismatch is already built into the responses.

Table 6 shows the average share of employees (employers) who report receipt of (providing) key benefits.[15] In the last column, we also show the pairwise mismatch – that is, the percent of employees who report something different from what *their* employer reports for the typical employee.

Very few employees or employers report written contracts, but verbal contracts are nearly universal, and the mismatch is also quite low. Interestingly, while the overall shares of employees

[15] We also asked about specific amounts of sick leave, casual leave, and termination notice provided, as well as other details such as contract length and whether maternity leave was paid, but here we simply report whether any amount of the benefits was provided.

and employers reporting that each had to give termination notice were about the same, there was some mismatch, with about 20 percent of the employee-employer pairs in disagreement. We found similar results when we asked who would bear the cost of any medical bills due to an accident at work (which we term "accident insurance"). About 80 percent of employees and employers indicated that the employer would be at least partially responsible, but about 20 percent of employer-employee pairs showed a mismatch.

The mismatch in reporting is substantial for sick leave and casual leave - about 50 percent of all employees report receiving sick leave, while about 70 percent of employers report providing it. "Casual leave" is essentially paid vacation, and was reported by only about 25 percent of workers, but by about 45 percent of employers. One potential reason for this mismatch may arise from a common response about how much sick leave was provided, or how much paid casual leave was provided: "as needed." In about 60 percent of the cases of mismatch in terms of sick leave, and 50 percent of the cases of mismatch in terms of casual leave, employees reported no casual leave while their employers reported that the leave would be given "as needed."

We asked female employees and employers with at least one female employee, if they had taken (given) or would be able to take (give) maternity leave. Interestingly, although about 40 percent of employees and 40 percent of employers indicated that would receive or give maternity leave, there was a substantial amount of underlying mismatch (percentage), potentially due to the forward-looking nature of the question.

Table 6: Reported Job Benefits and Attributes

	Reported by Employee	Reported by employer, for typical employee	Pairwise Mismatch
Written contract*	1.7%	2.6%	3.5%
Verbal contract*	96.9%	95.1%	3.3%
Termination notice from employer	84.5%	80.1%	18.3%
Termination notice from employee	85.0%	80.8%	19.4%

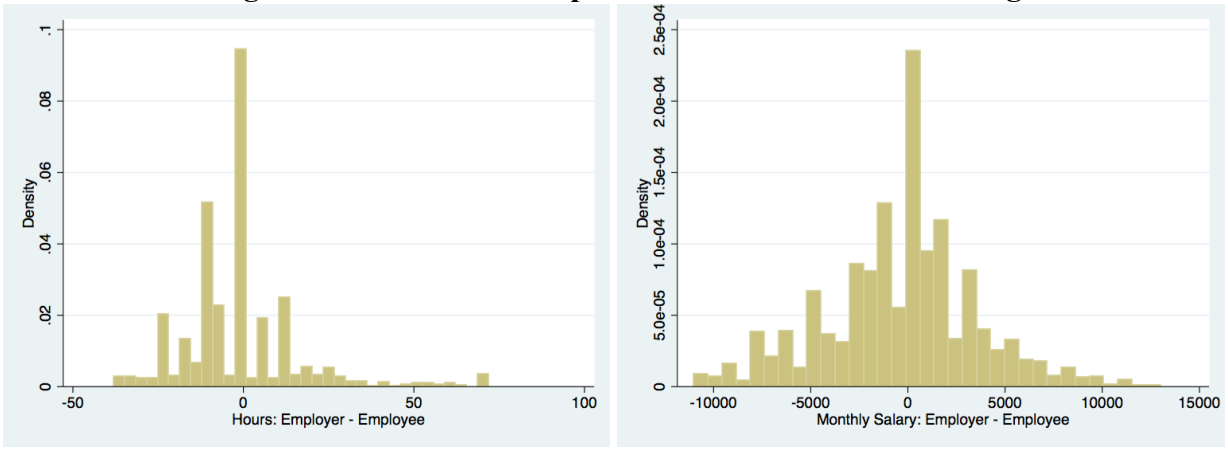
Accident insurance	75.6%	82.7%	19.8%
Sick leave	50.4%	69.6%	30.1%
Casual leave	25.2%	44.8%	33.2%
Maternity leave**	38.5%	40.0%	38.5%
<48 hours/week	12.1%	22.7%	23.4%
48-60 hours/week	24.9%	26.8%	32.0%
60-72 hours/week	44.1%	35.2%	34.9%
72+ hours/week	18.8%	15.3%	14.6%
Paid overtime***	14.8%	27.4%	22.5%

Note: We asked employees about their own benefits, and employers about the benefits of a typical employee.
* Employers were asked if *any* employees had written or verbal contracts
** Only asked of enterprises with female employees, and of female employees
*** For employees, if we limit the sample to those who report working more than 48 hours per week, a slightly higher percentage (15.2 percent) report being paid overtime. For employers, we report whether *any* employees were paid overtime.

Both employees and employers report long working hours, most often between 60 and 72 hours per week.[16] There is substantial mismatch between reported hours, with employers often reporting lower hours than employees. Figure 1 shows the distribution of the difference between the number of hours reported by the employer, and by the employee. In 43 percent of cases, employers report lower work hours than employees; employees only report fewer work hours than employers in 27 percent of cases. Despite the overtime work, only 15 percent of employees, and 27 percent of employers, report overtime pay. With respect to monthly earnings, the mismatch within employer-employee pairs is centered around zero suggesting quite consistent reports. The reported 25th, 50th and 75th percentiles of income (in terms of monthly and hourly earnings) are similar across employers and employees.[17]

[16] The maximum allowed by the Bangladesh Labour Law of 2006 is 48 hours, or 60 hours with overtime pay.
[17] Monthly earnings at 25, 50, and 75th percentiles reported by employees [employers] are 6,000, 8,000, and 10,000 [6,000, 7,500, 10,000] Taka in 2016 real terms; Hourly earnings at 25, 50, and 75th percentiles reported by employees [employers] are 19, 27, and 36 [19, 27, 35] Taka in 2016 real terms.

Figure 1: Difference in Reported Work Hours and Earnings



Note: Monthly hours/earnings reported by the employer for the typical employee, minus monthly hours/earnings reported by the employee. For visual clarity, top and bottom 1 percent of differences are not shown.

4. Choice Experiment Results

We begin by presenting results from the conditional logit models, and also explore heterogeneity of preferences through the latent class models. We then examine whether there is any evidence of sorting based on heterogeneous preferences.

4.1 Conditional Logit Model Results

Table 7, Column (1) presents parameter estimates for the conditional logit model for employees. We include number of days of notice from employers and employees, number of days of leave, and increase in monthly salary as continuous variables. The various options for working hours and overtime pay are included as dummy variables, where the excluded category is 48 hours. We also include having accident insurance as a dummy variable.

As the coefficients correspond to the parameters of a utility function, a positive (negative) parameter indicates that an increase in that attribute increases (decreases) the utility of that alternative. In Column (2), we present the MRS between each job attribute and monthly income, which is calculated by dividing the coefficient on the attribute by the coefficient on monthly income. As we would expect, the coefficient on salary is positive – all else being equal, employees

prefer higher income – and we interpret the MRS as the percent increase in income that employees would be willing to forego in order to receive a job benefit or preferred working condition.

In Columns (3) and (5), we present coefficient estimates from the employer fine and assistance experiments. To facilitate comparison across employers and employees, we use the same coding of job benefits and working conditions for the employee and employer models. The only difference between the employer and employee models is the inclusion of the fine (included as a continuous variable) or the various types of marketing assistance (included as dummy variables).

For the model with a fine, we calculate the MRS between job benefits and working conditions and the fine in Column (4), by dividing the coefficient on each attribute by the coefficient on the fine. In this case, the coefficient on the fine is negative – that is, employers dislike having to pay a fine; we therefore interpret the MRS as the fine (in thousands of Taka) that the average employer would be willing to pay in order to avoid having to give employees certain benefits or ensure certain working conditions.

Table 7: Conditional Logit Results

	Employee		Employer - Fine			Employer - Assistance	
	Coefficient (se)	MRS (% Income)	Coefficient (se)	MRS (Taka)	MRS (Days' Notice)	Coefficient (se)	MRS (Days' Notice)
Attribute	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Notice by Employer (to employee)	.00152 (.00104)	0.03	.00673*** (.00242)	-0.10	0.23	.000302 (.00281)	0.01
Notice by Employee (to employer)	.0223*** (.00164)	0.43	.0292*** (.00385)	-0.42	1.00	.0283*** (.0044)	1.00
Casual Leave	-.00112 (.00254)	-0.02	-.00254 (.00508)	0.04	-0.09	-.00175 (.00575)	-0.06
60 hours with OT	-.0955 (.0617)	-1.85	.0418 (.148)	-0.60	1.43	.372** (.167)	13.14
72 hours with OT	.0447 (.0665)	0.87	-.0631 (.153)	0.90	-2.16	.519*** (.171)	18.34
60 hours without OT	-.65*** (.0616)	-12.60	.266* (.147)	-3.79	9.11	.552*** (.159)	19.51
72 hours without OT	-.486*** (.0483)	-9.42	.411*** (.0945)	-5.85	14.08	.579*** (.0971)	20.46
Accident Insurance	.585*** (.0266)	11.34	.033 (.0565)	-0.47	1.13	.0193 (.0563)	0.68
Income	.0516*** (.00166)	1.00					
Marketing						.299** (.119)	10.57
Loan						1.09*** (.138)	38.52
Loan + Marketing						1.35*** (.094)	47.70
Fine (1,000 Taka)			-.0702*** (.00803)	1.00	-2.40		

Note: Default category for working hours is 48 hours. Accident insurance equals 1 if accident insurance offered, 0 otherwise. Marketing assistance equals 1 if marketing assistance offered, 0 otherwise. Standard errors are clustered at the employer level. Superscripts *, ** and *** represent statistical significance at the 10%, 5% and 1% levels, respectively.

In the assistance version, we do not have a monetary attribute against which to compare the other attributes. Therefore, in Column (7) we estimate the MRS of all other attributes in terms of days of employee notice. To assist in a comparison between the fine and assistance versions, in Column (5), we also calculate the MRS between each attribute and days of employee notice for the fine version. In both versions, the coefficient on employee notice is positive – employers prefer receiving employee notice. We therefore interpret the MRS as the number of days of employee notice employers would be willing to forego in order to avoid having to give employees the relevant benefit.

Notice from Employers and Employees

A striking finding that emerges from Table 7 is that both employers and employees value advance notice of employment termination. The coefficient on employee notice is similar in the two employer versions (Columns (3) and (6)). Using the MRS of -0.42 from the fine version (Column (4)), we can estimate that employers are willing to accept a fine of 12,600 Taka to get 30 days' notice from employees.[18] This result is also consistent with findings from the focus groups we conducted prior to the survey, in which employers indicated employee turnover as a major challenge. Unexpectedly, the MRS between employee notice and monthly income is also positive and significant in the *employee* model (Column (1)). This suggests that employees also do not mind providing advance notice to an employer, and would be willing to forego an increase of about 5 percent of monthly income in order to take a job that required providing two weeks' notice to an employer.

[18] Since the fine is in thousands of Taka, we multiply the MRS of -0.42 times 30 days to arrive at -12.6, and then by 1,000 to arrive at 12,600 Taka.

Both employers and employees also appear to value advance notice for termination from employers, but interestingly, this appears to be less important than notice from employees. The coefficient estimate is only statistically significant at conventional levels for employers who received the fine version, and the coefficient as well as the MRS are an order of magnitude lower than for employee notice. *Ex-ante*, we had anticipated that employees would like receiving, but not having to give, notice; and similarly, that employers would like receiving, but not having to give, notice. One potential explanation for the uniform valuation of employee notice is that employees may view advance termination notice as a measure of job stability.

Casual Leave

The coefficient on casual leave is not significantly different from zero for either employees or employers, and the magnitude of the MRS is economically insubstantial in all cases. The fact that the MRS is small for employers suggests that they are not averse to offering this benefit; they would not be willing to accept a large fine, or to give up much employee notice, in order to avoid giving casual leave. In addition, employees do not place a high valuation on this benefit, relative to wages or other benefits.

Working Hours

As noted above, employees often reported longer working hours than employers reported for their typical employees. In addition, employers and employees exhibit stark differences in their *preferences* for employee working hours. As we would expect, all else equal, employees generally prefer to work fewer hours. The MRS on 60 or 72 hours without overtime pay in Column (2) suggests that employees would be willing to forego an increase of about 10 percent of monthly income in order to take a job that only required 48 hours of work. Also consistent with

expectations, employees appear willing to accept long working hours if they are compensated for the overtime work with additional pay; the coefficients on 60 and 72 hours with overtime pay are not significant different from zero in the employee model.[19]

In contrast, employers strongly prefer being able to have employees work 60 or 72 hours *without* overtime pay. In the fine version, the average employer would be willing to accept fines of about 3,800 Taka (5,800 Taka) or to forego about 9 (14) days of employee notice to have their employees work 60 (72) hours per week without overtime pay (Columns (4) and (5)). In the assistance version, employers exhibit a willingness to forego 20 days' notice from employees in order to have employees work 60 or 72 hours without overtime pay (Column (7)). Employers in the assistance version also value having employees work 60 or 72 hours *with* overtime pay at 13 days and 18 days of employee notice, respectively.

It is worth noting that while employers exhibit a strong preference for having employees work overtime without paying for the additional hours in both models, only the assistance version shows a strong preference (on average) for having employees work overtime with overtime pay. As the two choice versions were randomly distributed among employers, we would have expected similar coefficients. The fact that employers were more willing to offer overtime pay in the assistance versions provides suggestive evidence that the "carrot" may be more effective than the "stick" in encouraging provision of this particular benefit.

Accident Insurance

[19] Recall that we informed respondents that overtime pay would be given *in addition to* the change in base monthly income.

As with casual leave, employers do not appear averse to providing accident insurance. The coefficient on accident insurance is not different from zero in a statistically significant manner, suggesting that employers are not willing to pay substantial fines or forego employee notice to avoid providing accident insurance. However, unlike casual leave, *employees* appear to value this benefit; the MRS suggests that employees would be willing to forego an increase of about 11 percent of monthly income in order to have employers cover medical costs associated with on-the-job injuries. The difference of valuations between employers and employees may be related to the differences in the perceived risks of accidents; employees may perceive the risk to be higher than employers. More importantly, employees may be particularly averse to accidents as they could represent both physical harm as well as a loss in income.

Income, Fines and Assistance

As we would expect, the coefficient on income is positive for employees (all else equal, employees prefer higher pay), and the coefficient on the fine is negative for employers (all else equal, employers prefer not to pay a fine). The assistance version of the employer model indicates that marketing assistance and loans are valued, with loans four times more valued than marketing assistance. This is not surprising, given the financial constraints faced by firms in developing countries. Access to a low interest loan with easy terms is valued even more highly than the conventional two weeks of employee notice, and is twice as valuable as having employees work 72 hours without over time payment.

4.2 Latent Class Results

In this section, we relax the assumption that preferences are homogeneous by estimating latent class models for the employee and employer choice experiments. We estimate three latent class models – for employees, for employers given the fine version, and for employers given the and assistance version – each with two classes. We posit that employee and employer preferences are likely to differ based on a variety of observable characteristics, and estimate class membership based on the following individual and firm-level characteristics: gender, age, and education of the respondent; skill level of employees as reported by the employee or by the employer; and size, degree of formality and sector of the firm.[20]

We first consider the employee model, for which preference parameter estimates are presented in Table 9, and class membership results are presented in Appendix B. The class membership results provide estimates of the *prior* probabilities that an individual is in each class, given the observable characteristics included in the membership equation. The latent class model also provides *posterior* probabilities that an individual is in each class, based on the class membership results as well as the choices that he or she actually makes. We assign each individual to the class to which he or she has the highest posterior probability of belonging.

Approximately 55 percent of employees are assigned to class 1, and the remainder are in class 2. As shown in Appendix B, employees in class 1 are more likely to be younger and more educated, to rate themselves more highly in terms of vocational skills and responsibility, but less highly in terms of communication and literacy / numeracy skills, to work in somewhat more formal enterprises, and to work in certain sectors (educational services, handloom and specialized textiles, knitwear and readymade garments), than employees in class 2.

[20] We asked employees about their own skill level, and employers about the skill level of their employees. The level of formality is based on the type of organization (if any) with which the firm is registered, and whether the firm is registered for a TIN or to pay VAT. Details are provided in Appendix B.

We give notional labels to each class; the labels are not meant to perfectly capture every element of their choices, but to aid exposition of the different choice experiment results. For employees, we label class 1 as "Stability Seeking" and class 2 as "Income Seeking". First consider the coefficient on income, which is an order of magnitude higher for Income Seeking than for Stability Seeking employees, suggesting a higher marginal value of money. This finding may be driven in part by differences in demographics (older, less educated employees are more likely to be in the Income Seeking class) as well as actual earnings (median monthly income is about five percent lower among Income Seeking employees than among Stability Seeking employees).

In addition, those in the Income Seeking class do not mind working longer hours, as long as they are paid overtime. The MRS estimates in Column (4) indicate that these employees would be willing to forego an approximately 5 percent increase in base monthly income in a job that required 48 working hours per week, in order to take a job that required 60 or 72 hours per week but that provided additional overtime pay. They also value paid leave and accident insurance to some extent; the MRS estimates in Column (4) suggest that they would be willing to forego a four percent increase in monthly income in order to receive 10 days of paid leave or to secure accident insurance. However, they place little value on termination notice.

In contrast, Stability Seeking employees value notice from both the employer and the employee. The MRS estimates in Column (2) suggest that they would be willing to forego an increase in monthly income of 10 percent in exchange for a job requiring 30 days of notice from the employer, and to forego an increase in monthly income of 9 percent in exchange for a job that required them to give two weeks' (10 days) notice. They also place a substantially higher value on accident insurance than the Income Seeking employees. And, unlike the Income Seeking employees, they would not be willing to forego any increase in base monthly income in order to take a job that required 60 or 72 hours per week, even if it provided additional overtime pay.

Table 9: Latent Class Results – Employees

	Class 1: "Stability Seeking"		Class 2: "Income Seeking"	
	Coefficient (se) (1)	**MRS (% Income) (2)**	**Coefficient (se) (3)**	**MRS (% Income) (4)**
Notice from Employer	0.009***	0.36	-0.005**	-0.03
	(0.002)		(0.002)	
Notice from Employee	0.022***	0.88	0.001	0.01
	(0.002)		(0.004)	
Leave	-0.01**	-0.4	0.063***	0.36
	(0.004)		(0.009)	
60 hours with OT	-0.166	-6.64	0.712***	4.12
	(0.106)		(0.205)	
72 hours with OT	-0.166	-6.64	1.031***	5.96
	(0.107)		(0.222)	
60 hours without OT	-0.482***	-19.28	-1.808***	-10.45
	(0.093)		(0.254)	
72 hours without OT	-0.409***	-16.36	-1.177***	-6.80
	(0.088)		(0.163)	
Accident Insurance	0.769***	30.76	0.707***	4.09
	(0.053)		(0.083)	
Income Percent	0.025***	1.00	0.173***	1.00
	(0.002)		(0.013)	
Class share	0.582		0.418	
# workers w/highest probability of being in class	1,412		1,156	

Note: Results from a latent class analysis of employees. Default category for working hours 48 hours. Default category for accident insurance is none. *, ** and *** represent statistical significance at the 10%, 5% and 1% levels, respectively.

Turning to the employer models, preference parameter estimates are presented in Table 10, and class membership results are presented in Appendix B. First consider the fine version of the choice experiment. Based on posterior probabilities from the latent class model, about 35 percent of employers are assigned to class 1, which we label as "Cost Avoiding," and 65 percent are assigned to class 2, which we label as "Stability Seeking". Appendix B shows that employers in

firms with more than 10 employees, and with higher levels of formality, are less likely to be in the Cost Avoiding class.

The coefficient on the fine is negative and approximately five times larger in magnitude for the Cost Avoiding employers than for the Stability Seeking employers. At the same time, Cost Avoiding employers would be willing to pay a fine of 4,500 (5,900) Taka in order to have employees work overtime without pay, and in fact dislike having to provide overtime compensation, as evidenced by the MRS estimates in Column (4). These employers are also averse to providing accident insurance. In contrast, Stability Seeking employers appear to value workforce stability, as evidenced by the MRS on both employer and employee notice in Column (2). They also appear to prefer providing accident insurance, and exhibit no strong preference for additional work hours.

Columns (5) through (8) of Table 10 present the preference parameter results for the assistance version. In this case, about 55 percent of employers were assigned to class 1, which we refer to as "Overtime Seeking" while 45 percent were assigned to class 2, "Loan Seeking". Appendix B shows that employers in larger firms, as well as those who reported higher responsibility but lower literacy / numeracy among employees, are more likely to be "Overtime Seeking" than "Loan Seeking".

"Overtime Seeking" employers in this category value long working hours. Column (6) shows that they have a higher preference for long hours without having to pay overtime, but still value 60 or 72 hours or work (relative to 48 hours) if they have to provide overtime pay. These employers also value notice from employees, and appear to prefer providing accident insurance.

For "Loan Seeking" employers, we note that the coefficient on employee notice is not statistically significant at conventional levels. Thus, although we compute the MRS with respect to this coefficient for consistency, we also rely on the magnitudes of the other coefficients

themselves in order to interpret the results. The coefficient and MRS estimates in Columns (7) and (8) indicate that, like Overtime Seeking employers, Loan Seeking employers also prefer long working hours, even though the coefficient estimates in Column (7) are not statistically significantly in all cases. Nonetheless, we label these employers as "Loan Seeking" because the most striking finding is the very high coefficients on assistance packages that include a loan on easy terms. This finding is consistent with the fact that smaller firms, which are more likely to find financing a major barrier than larger firms, have a greater likelihood of being in this class.

In Table 11, we examine the extent to which employers' preferences, as identified by the latent class results, align with observed provision of benefits. We show the percent of employers in each class who give or require notice, who provide accident insurance, and who report paying any overtime, as well as the percent who report typical work hours in each of four categories.

Employers who value notice and accident insurance (Stability Seeking and Overtime Seeking) are, in fact, more likely to provide these benefits. Recall that both Overtime Seeking and Loan Seeking employers value long working hours; Loan Seeking employers are more likely to have employees who actually work more than 72 hours per week, and both are equally likely to pay overtime. Consistent with their preference for avoiding additional costs, Cost Avoiding employers are the least likely to pay overtime than Stability Seeking employers.

Table 10: Latent Class Results – Employers

	Fine				Assistance			
	Class 1: "Cost Avoiding"		Class 2: "Stability Seeking"		Class 1: "Overtime Seeking"		Class 2: "Loan Seeking"	
Attribute	Coefficient (se) (1)	MRS (Taka) (2)	Coefficient (se) (3)	MRS (Taka) (4)	Coefficient (se) (5)	MRS (Days' notice) (6)	Coefficient (se) (7)	MRS (Days' notice) (8)
Notice from Employer	0.003 (0.007)	-0.015	0.010** (0.004)	-0.30	-0.002 (0.005)	-0.05	0.006 (0.009)	0.50
Notice from Employee	-0.017 (0.011)	0.08	0.063*** (0.008)	-1.70	0.042*** (0.007)	1.00	0.012 (0.011)	1.00
Leave	0.002 (0.015)	-0.01	-0.004 (0.01)	0.11	-0.005 (0.01)	-0.12	0.003 (0.022)	0.25
60 hours with OT	-0.220 (0.342)	1.10	0.025 (0.23)	-0.70	0.553** (0.242)	13.17	0.653 (0.508)	54.42
72 hours with OT	-0.644 (0.399)	3.28	-0.038 (0.236)	1.05	0.454* (0.232)	10.81	1.414*** (0.55)	117.83
60 hours without OT	0.878*** (0.322)	-4.51	-0.122 (0.252)	3.24	0.752*** (0.245)	17.90	0.869* (0.495)	72.42
72 hours without OT	1.157*** (0.350)	-5.90	-0.089 (0.174)	2.24	0.792*** (0.156)	18.86	0.426 (0.3)	35.50
Accident Ins	-0.735*** (0.216)	3.75	0.538*** (0.120)	-14.65	0.228* (0.126)	5.43	-0.536* (0.278)	-44.67
Marketing					0.455** (0.192)	10.83	0.445 (0.379)	37.08
Loan					0.624*** (0.219)	14.86	2.425*** (0.469)	202.08
Loan + Marketing					0.563*** (0.16)	13.40	3.405*** (0.519)	283.75
Fine (1,000 Taka)	-0.195*** (0.031)	1.00	-0.037** (0.016)	1.00				
Class share	0.364		0.636		0.549		0.451	
# employers w/highest prob being in class	154		273		234		197	

Note: Results from latent class analyses. Omitted level for working hours 48 hours. Omitted level for accident insurance is none. *, ** and *** represent statistical significance at the 10%, 5% and 1% levels, respectively.

Table 11: Actual Job Attributes Reported by Employers, by Latent Class

	Fine Class 1: "Cost Avoiding"	Fine Class 2: "Stability Seeking"	Fine Class p-value	Assistance Class 1: "Overtime Seeking"	Assistance Class 2: "Loan Seeking"	Assistance Class p-value
Notice from Employer	75%	83%	0.06*	83%	77%	0.11
Notice from Employee	78%	82%	0.35	83%	78%	0.25
Leave	38%	46%	0.12	50%	41%	0.05*
<=48 hours/week	19%	25%	0.20	24%	21%	0.44
49-60 hours/week	23%	28%	0.25	31%	23%	0.07*
61-72 hours/week	40%	33%	0.17	34%	36%	0.69
>72 hours/week	18%	14%	0.29	11%	20%	0.01***
Overtime	22%	30%	0.06*	28%	26%	0.68
Accident Insurance	77%	89%	0.00***	85%	75%	0.01***

Note: Benefits and working conditions reported by employers for typical employees, by latent class. For all variables except income, we present p-values from Pearson chi-squared tests of the equality of distribution across the two classes associated with each choice experiment version. *, ** and *** represent statistically significant differences between the two latent classes at the 10%, 5% and 1% levels, respectively.

4.3 Sorting of Employers and Employees

In the previous section, we identified employees with strong preferences for termination notice and accident insurance (Stability Seeking) and those with strong preferences for higher base monthly salary as well as overtime pay (Income Seeking). In addition, we identified different preferences among employers: those who sought to avoid providing overtime pay and accident insurance (Cost Avoiding); those who valued termination notice (Stability Seeking); those with a strong preference for long working hours, even if they had to pay overtime (Overtime Seeking); and those with a preference for long working hours and a particularly high valuation of loans (Loan Seeking).

If search frictions are not substantial and preferences were mutually observable without much noise, we might expect employers and employees with compatible preferences – for example, those who seek stability – to have sorted based on these preferences. We explore this potential sorting in two ways. First, we examine whether Stability Seeking and Income Seeking

employees are more likely to work for the appropriate type of employer. To do so, we construct 2,568 matched employer-employee pairs (one for each employee; employers can be paired with multiple employees). For each pair, we assign the employee to the latent class to which he or she has the highest posterior probability of belonging, and we similarly assign the employer to the latent class to which he or she has the highest posterior probability of belonging. Recall that since half the employers were given the fine version of the experiment, and half were given the assistance version, we have 1,304 employer-employee pairs associated with the fine version and 1,264 associated with the assistance version.

Table 12 shows the distribution of these matched employer-employee pairs across the possible combinations of latent classes. The numbers in parentheses reflect the distribution we would expect if there were no sorting across latent classes, while the numbers above reflect the distribution we actually observe.

Consider Panel A, which includes all employers given the fine version. A total of 1,304 employees work for these employers. We matched each employee to his or her employer, giving us 1,304 employee-employer pairs. Among these 1,304 pairs, 55.9 percent of the employees have the highest posterior probability of being in the Stability Seeking class, while 63.1 percent of the employers have the highest posterior probability of being in the Stability Seeking class. Therefore, if there is no sorting, we would expect 0.559 x 0.631 = 0.353 or 35.3 percent of the observed pairs to include Stability Seeking employees and Stability Seeking employers. We observe a slightly higher percentage (37.9 percent) in this cell.

Table 12: Latent Class Results – Comparing Employer and Employee Classes

Panel A: Fine Version

Employer- Fine	**Employer: "Cost Avoiding"**	**Employer: "Stability Seeking"**	**Total share of Employees**
Employee: "Stability Seeking"	18.0% (20.6%)	37.9% (35.3%)	55.9%
Employee: "Income Seeking"	18.8% (16.3%)	25.3% (27.8%)	44.1%
Total Share of Employers	36.9%	63.1%	
Pearson chi2 14.9 (p<0.001)			

Panel B: Assistance Version

Employer – Assistance	**Employer: "Overtime Seeking"**	**Employer: "Loan Seeking"**	**Total share of Employees**
Employee: "Stability Seeking"	32.8% (29.8%)	21.3% (24.2%)	54.0%
Employee: "Income Seeking"	22.5% (25.4%)	23.5% (20.6%)	46.0%
Total Share of Employers	55.2%	44.8%	
Pearson chi2 17.5 (p<0.001)			

Note: Actual and expected distributions (in parentheses) of employer and employee classes for the fine and assistance versions of the employer choice tradeoff.

We also find that Stability Seeking employees are more likely to be paired with Overtime Seeking employers than random chance would suggest. Employers in both of these classes value long working hours, and as shown in Table 11, Loan Seeking employers are more likely to actually have employees who work more than 72 hours per week. Since Stability Seeking employees

generally do not prefer to work overtime, the distribution in the assistance class version also provides some evidence of sorting in accordance with employee preferences.[21]

Second, we look for evidence of sorting by examining the extent to which the preferences implied by the latent class models align with the job attributes reported by employees (an analog to the exercise conducted in Table 11, for employers). Table 13 shows the percent of employees in each class who receive or give notice, who receive accident insurance or overtime pay, as well as the percent who report typical work hours in each of four categories.

Table 13: Actual Job Attributes Reported by Employees, by Latent Class

	Class 1: "Stability Seeking"	**Class 2: "Income Seeking"**	**p-value**
Notice from Employer	84%	85%	0.94
Notice from Employee	85%	85%	0.63
Leave	24%	27%	0.03**
<=48 hours/week	12%	12%	0.90
49-60 hours/week	28%	21%	0.00***
61-72 hours/week	45%	43%	0.58
>72 hours/week	15%	23%	0.00***
Overtime	19%	10%	0.00***
Accident Insurance	79%	71%	0.00***

Note: Benefits and working conditions reported by employees, by latent class. For all variables except income, we present p-values from Pearson chi-squared tests of the equality of distribution across classes. *, ** and *** represent statistically significant differences between the two latent classes at the 10%, 5% and 1% levels, respectively.

There is some evidence that employees who have stronger preferences for accident insurance (Stability Seeking), are more likely to receive it. However, there is little evidence of sorting based on preference for receiving notice. The results for working hours and overtime pay are mixed; Income Seeking employees are more likely to work longer hours, but are *less* likely to receive overtime pay. Their longer working hours are consistent with their higher marginal value

[21] In both versions, while the expected and actual percentages for all four of the potential employer-employee combinations are within a few percentage points of each other, a Pearson chi-square test strongly rejects (with $p<0.001$) the hypothesis that the distributions of employers and employees are independent.

for money; their low levels of overtime pay may reflect an inability to find employers willing to provide that pay, particularly since employees in this class are likely to be older and less educated.

4.4 Direct Comparison of Employee and Employer Choices

While the latent class models allow us to compare employers and employees by class, we cannot *directly* compare an individual employee's responses to a specific choice scenario, relative to his or her employer's responses to the same scenario (in terms of benefits and working conditions).[22] However, we can perform a more direct comparison by using three follow-up questions that were included in the survey. After the choice experiments were complete, we asked each respondent – employers and employees – three identical questions that offered a direct tradeoff between two selected attributes.[23]

Table 14 shows the results. We first offered a tradeoff between 30 days' notice from the employer and no paid casual leave, against 7 days' notice and 10 days' paid casual leave (Panel A). Each cell shows the share of matched employee-employer pairs in that category. For example, in 51 percent of employee-employer pairs, the employee prefers to receive 7 days' notice and 10 days casual leave, while the employer prefers to give 30 days' notice and no casual leave. In fact, overwhelmingly, the employees prefer the second option (7 days' notice and 10 days casual leave); however, most employers prefer offering notice rather than leave.

Panel B shows results from a similar tradeoff between notice and overtime pay. Once again, most employees prefer overtime pay, whereas – consistent with the results in Table 7, most

[22] Recall that the choice experiment used an efficient design in order to cover all attributes and levels, and that each respondent was only presented with 6 out of a total of 48 choice scenarios.

[23] These three choice sets were created without following an experimental design. We do this in order to gain understanding of matched preferences of employers and employees with regards to some key attributes we used in the main choice experiment.

employers prefer to give notice than overtime pay.[24] In contrast, Panel C shows the responses to a tradeoff between both parties (employer and employee) offering notice, and neither party offering notice. The results in Panel C suggest that while many employers do not value employee notice relative to other attributes (notably Cost Avoiding and Loan Seeking employers in Table 10), the vast majority prefer a situation in which both parties give notice, to one in which neither party gives notice. Thirty-five percent of employers who report that they prefer having neither party give notice do not, in fact, offer notice to the typical employee. However, even among those employers who report that they prefer both parties to give notice, nearly 20 percent do not offer notice.

[24] It is worth noting that even among those employers in the Overtime Seeking class, 80 percent preferred to offer notice than to give overtime pay. However, these employers also value employee notice, as shown in Table 10.

Table 14: Follow-up Choice Questions

Panel A: Notice versus leave

		Employer	
		30 days' notice / no paid casual leave	**7 days' notice / 10 days casual leave**
Employee	**30 days' notice / no paid casual leave**	18%	5%
	7 days' notice / 10 days casual leave	51%	26%

Panel B: Notice versus overtime pay

		Employer	
		30 days' notice / 60 hours without overtime	**7 days' notice / 60 hours with overtime**
Employee	**30 days' notice / 60 hours without overtime**	18%	7%
	7 days' notice / 60 hours with overtime	58%	18%

Panel C: Notice versus no notice

		Employer	
		30 days' notice from employer / 15 days from employee	**7 days' notice from employer / none from employee**
Employee	**30 days' notice from employer / 15 days from employee**	87%	7%
	7 days' notice from employer / none from employee	6%	0.5%

Note: Responses by employees and employers to three identical choice tradeoffs offered after the main choice experiment was complete. The percentages show the number of matched employer-employee pairs in each category. For example, in 51 percent of matched employer-employee pairs, employees preferred receiving 30 days' notice and no casual leave, while employers preferred providing 7 days' notice and 10 days' casual leave.

5. Discussion

In this paper, we use a matched employer-employee survey and two choice experiments to elicit workers' preferences for specific job attribute/working conditions, as well as the job benefit/working conditions that employers would be most willing to provide. The use of a choice experiment, by relying on stated rather than revealed preferences, allows us to avoid the challenge of estimating willingness to pay for job benefits when workers sort into jobs due to unobserved heterogeneity. Drawing on the matched nature of our survey and using a latent class analysis, we find that there is indeed evidence of some degree of sorting based on preferences for job attributes.

Taken together, our findings suggest that two areas may offer reasonably straightforward options to policymakers who seek to improve working conditions. First, employees appear to value accident insurance (i.e. the enterprise covering any medical costs related to an on-the-job accident), and most employers do not seem to be averse to offering it. There is some evidence that employees who value such insurance are sorting into firms that provide it. However, about 20 percent of employees who value accident insurance (Stability Seeking) do not receive it, and about 10-15 percent of employers who have preferences *for* providing accident insurance (Stability Seeking and Overtime Seeking), do not report providing it. Second, a number of employers and employees value advance notice of termination from both sides. Even among employers who do not value employee notice relative to other attributes, most prefer a situation in which both parties give notice to one in which neither gives notice. Nonetheless, nearly 20 percent of employees do not receive notice. Finding ways to extend such benefits, which appear preferred by employees and acceptable to employers, may be one way to improve working conditions without imposing onerous costs on informal firms.

In contrast, most employers and employees have starkly different preferences about working hours. The latent class analysis suggests that some employees prefer not to work overtime

at all, while others prefer to work overtime, but only with overtime pay. But many employers are willing to pay substantial fines and to give up other benefits in order to continue to have their employees work long hours, particularly *without* overtime pay. Thus, enforcing existing provisions of the Bangladesh Labour Law with respect to working hours and overtime pay is likely to require substantial additional enforcement or incentives for employers.

Our findings suggest two key questions for future research: Why is there not more sorting among employers and employees, with respect to preferences for providing and receiving job benefits? And, why are benefits that appear to be mutually valued – such as termination notice from both employers and employees – or at least, valued by employees and not perceived as particularly onerous by employers – such as accident insurance – not more universal? One possibility, as Domat et al. (2013) have noted, is that employers' perceptions of employees' well-being may not be the same as employees' own perceptions of their well-being. In this case, providing information to employers, or encouraging dialogue between workers' groups and employers' associations, may be helpful. In addition, benefits may not be offered because private enforcement is challenging, especially in the case of termination notice. One possibility may be to work with local trade associations – which are common in the SME clusters we studied – to develop a local monitoring and enforcement mechanism, which could provide a win-win solution for employers and employees.

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Supplementary Material

Appendix A: Survey Details

This appendix describes the procedures used by the survey team to identify employers and employees within each SME cluster. Table A.1 shows the list of clusters by district and sector.

Table A.1: SME Clusters by District and Sector

District	Num.	Sector	Num.
Chittagong	8	Agri Business	4
Dhaka	23	Design	6
Faridpur	5	Educational Services	1
Feni	3	Electronics and Electrical	3
Gazipur	2	Fashion	1
Manikganj	1	Handicrafts and Miscellaneous Sector	3
Munshiganj	2	Handloom and Specialized Textile	1
Narayanganj	8	Knitwear and Readymade Garments	10
Narsingdi	3	Leather Making and Leather Goods	8
		Light Engineering and Metal Working	15
		Plastics and Other Synthetics	3
Total	**55**	**Total**	**55**

Note: Number of clusters included in the choice experiment, by location and sector.

Upon arrival at each cluster, the field supervisors mapped out the boundaries of the SME cluster. The supervisors then proceeded through the cluster and estimated the number of enterprises based on the SME Foundation report and discussions with local business owners. Within each cluster, the team targeted 16 enterprises. To select specific enterprises, the team used a random walk. Typically, the field team would consist of four enumerators and a supervisor. Each enumerator would start in a different part of the cluster. The enumerator was instructed to go to every *nth* enterprise where $n=N/16$ and N is the total number of enterprises in the cluster. For example, in a cluster with approximately 100 enterprises, the enumerators would aim to survey every $100/16=6^{th}$ enterprise.

The enumerator would first ensure that the firm met the screening criteria, namely (1) that the firm was part of the cluster, in other words, it conducted business in the industry (e.g.

handicrafts) identified with that particular cluster, and (2) the firm had at least one paid, non-family member employee. We did not screen firms out based on their registration status, because registering with a local authority and holding a trade license is very common in Bangladesh. As discussed in the main paper, many of the SMEs in our sample were registered with local authorities, but only 40 percent had a tax ID, and 20 percent were registered for VAT. We also did not screen firms out based on the benefits provided to their workers, as part of our aim was to examine the diverse set of benefits available to workers in small firms. We found that few firms offered written contracts, but many offered a wide range of benefits including paid leave, verbal contracts, and termination notice.

Upon arriving at a selected enterprise, the employer or employer's representative would be informed about the survey, and permission sought for an interview, as well as for permission to return at a later date and interview a certain number of employees. If the employer refused, then the enumerator would go to the next enterprise; if that second enterprise was also a refusal, the enumerator would proceed to the third enterprise. If three enterprises in a row refused, the enumerator would follow the skip pattern, and move *n* enterprises away and start again.

If the employer provided permission to conduct the interviews, the enumerator conducted the interview either immediately or at a later time if requested by the respondent. The enumerator also created an employee roster based on the employers' listing of his or her employees. To select employees, the following rules were used:

- If there were up to 4 employees, all employees were approached for an interview
- If there were more than 4 employees, the enumerator provided the roster to the field supervisor, who randomly selected 4 employees from the list. The random selection was performed by numbering each employee, putting slips of paper with the relevant numbers into a container, and drawing without replacement 4 numbers. If a selected employee refused to participate, an additional number was drawn.

The enumerator attempted to obtain consent from the selected employees during the first visit, but returned at a later date to conduct the interviews. Care was taken to ensure that the

employee and employer interviews were conducted separately, so that no one could overhear the responses of any of the respondents.

Since the enumerators returned at a later date to interview employees, in a few cases, some of the employees selected were no longer in the same job. In that case, the following rules were used for replacement:

- Employee originally selected had left, but there was a new employee doing the same job: the enumerator attempted to interview the new employee.
- Employee originally selected had left, no one had taken that employee's job, and the firm had more than 4 employees: the enumerator attempted to interview a replacement at the same firm. The replacement was selected from a randomly ordered list of employees not included in the original sample.
- Employee originally selected had left, no one had taken that employee's job, and the firm had 4 or fewer employees (or the step above resulted in going through all employees at the same firm). The enumerator then attempted to interview a replacement at a different firm in the same cluster using a randomly ordered list of employees not included in the original sample, from the whole cluster. The supervisors kept track of which employees in a cluster were used as replacements, and they were removed from this list as the sampling progressed.

The final employer survey instrument included the following modules:

- Screener: basic questions to ensure that the enterprise met the criteria for inclusion (being in the SME cluster, having at least one non-family member employee)
- Basic information (firm information including age, ownership, registration; challenges in growing and finding employees)
- Employee roster (number of employees by type of employment, gender)
- Job benefits (specific benefits offered to the typical employee)
- Skills (perception of the importance of vocational, literacy, interpersonal, skills, as well as responsibility, for the typical employee, as well as perception of how well prepared the typical employee was in each area)
- Working conditions (perception of the most important conditions that employers should provide for employees)
- Choice experiment
- Demographics and sales (demographic information for respondent and basic revenue information for enterprise)
- Follow-up questions

The final survey employee survey instrument included the following modules:

- Screener: basic questions to ensure that employee met inclusion criteria (being a paid, non-family member working in the selected enterprise)

- Job information (basic information about current job, and specific information about benefits received)
- Skills (perception of the importance of vocational, literacy, interpersonal, skills, as well as responsibility, for job, as well as perception of how well prepared the employee was in each area)
- Working conditions (perception of working conditions in current job)
- Choice experiment
- Household roster and dwelling information (demographic information for respondent and members of household)
- Follow-up questions

Appendix B: Class Membership Results

Table B.1 shows the class membership results from estimating the latent class models for employees and employers. In estimating class membership, we used the following:

- Gender
- Age, in the form of a dummy is the respondent was above the median age (23 for employees, 35 for employers)
- Education, in the form of a dummy for whether the respondent had completed at least some secondary education
- Skills / responsibilities: variables indicating the employee's self-report of his or her vocational, and communication, literacy / numeracy skills, as well as his or her responsibility (on a scale from 1-10), or the employer's assessment of how well the typical employee at his or her firm was equipped with these skills / responsibility
- Size, in the form of dummy variables for firms with 6-10 and 11+ paid employees
- Degree of formality, defined as follows:
    - Level 1: not registered
    - Level 2: registered either with a city corporation / municipality, or for a tax ID or VAT
    - Level 3: registered with a city corporation / municipality, and for a tax ID or VAT
    - Level 4: registered with an organization other than a city corporation / municipality or for both a tax ID and VAT.
- Sector dummies

In each case, Class 2 is the base class, so the coefficients shown reflect the influence of each observable characteristic on membership in Class 1.

Table B.1: Determinants of Class 1 Membership

	Employees	Employers – Fine	Employers - Assistance
Female	-0.015	-0.006	0.1
	(0.209)	(0.74)	(0.868)
Age Above Median	-0.376***	-0.294	-0.182
	(0.13)	(0.257)	(0.332)
Secondary Education or Higher	0.335**	-0.237	0.493
	(0.138)	(0.316)	(0.347)
Vocational Skills	0.096**	0.053	-0.122
	(0.042)	(0.1)	(0.117)
Communication Skills	-0.086**	-0.018	0.125
	(0.038)	(0.083)	(0.115)
Literacy/Numeracy Skills	-0.14***	0.107	-0.228**
	(0.038)	(0.079)	(0.108)
Responsibility	0.186***	-0.058	0.236**
	(0.051)	(0.086)	(0.105)
6-10 employees	0.012	0.695*	0.019
	(0.176)	(0.36)	(0.431)
11+ employees	-0.012	-0.212	1.603***
	(0.221)	(0.47)	(0.591)
Formal Level 2	0.212	-0.242	-0.195
	(0.208)	(0.351)	(0.413)
Formal Level 3	0.604**	-0.334	-0.487
	(0.239)	(0.4)	(0.518)
Formal Level 4	0.564**	-0.87*	-0.86
	(0.232)	(0.477)	(0.605)
Design	0.16	-1.678**	-1.218
	(0.373)	(0.82)	(0.905)
Educational Services	0.828*	-3.073*	1.199
	(0.488)	(1.603)	(1.743)
Electronics and Electrical	0.26	-0.627	0.274
	(0.384)	(0.778)	(1.327)
Fashion	-0.152	-1.172	-1.727
	(0.775)	(1.017)	(1.322)
Handicrafts and	0.243	-1.53*	-16.693
Miscellaneous Sector	(0.438)	(0.931)	(14.997)
Handloom	1.691**	-0.563	0.72
and Specialized Textile	(0.823)	(1.433)	(1.192)
Knitwear	0.526*	-1.304*	-0.29
and Readymade Garments	(0.31)	(0.774)	(0.808)
Leather Making	0.079	-0.676	-0.314

and Leather Goods	(0.319)	(0.679)	(0.887)
Light Engineering	0.138	-1.257*	0.235
and Metal Working	(0.305)	(0.656)	(0.873)
Plastics and Other Synthetics	0.493	-1.079	-0.062
	(0.396)	(0.777)	(0.922)
Constant	-1.363***	0.763	-0.358
	(0.521)	(1.253)	(1.424)

Note: Class share equations from latent class models. Class 2 is the base class; coefficients show the influence of each factor on membership in Class 1. Median age is 23 for employees, 35 for employers. Omitted size class is 1-5 employees. Omitted formal level is Level 1 (not registered); Level 2 is registered either with a city corporation / municipality, or for a tax ID or VAT; Level 3 is registered with a city corporation / municipality, and for a tax ID or VAT; Level 4 is registered with an organization other than a city corporation / municipality or for both a tax ID and VAT. Omitted sector is agri-business. *, ** and *** represent statistical significance at the 10%, 5% and 1% levels, respectively.