Why do firms hire migrant workers?: Evidence from India *

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Abstract

Internal labor migration remains widespread in LMICs despite high unemployment among local workers in destination labor markets. A common explanation is that firms hire migrants because migrants are more willing than locals to accept lower posted wages. We test an alternative demand-side explanation using a field experiment in which firms receive real offers to hire either local or migrant workers. At the prevailing market wage, firms' demand for migrant workers is 78.7% higher than for local workers, and firms are willing to pay an average wage premium of 12.7% to hire a migrant rather than a local worker, suggesting that lower wage demands alone cannot explain firms' preference for migrants. To understand the preference, we experimentally vary migrants' residence status. When firms cannot have workers reside on site, the migrant-local hiring gap shrinks, indicating that firms value control associated with residence. An incentivized belief elicitation indicates that firms believe migrant workers are more likely to work longer hours for the same pay, less likely to be absent, less likely to dispute delayed payments or seek outside help in the event of a wage dispute, and these beliefs are stronger for migrant workers living on site. Using cross-cutting contract variations, we decompose the migrant premium into three channels: differential absenteeism and reneging risk (39.8%), the scope to extract additional (often unpaid) working hours (29.3%), and higher perceived effort per hour (30.9%). We then assess whether migrants anticipate these conditions or instead hold systematically biased beliefs, using incentivized belief elicitation and an experiment offering protections that reduce vulnerability. In the belief-elicitation exercise, both migrant and local workers believe that, relative to local workers, migrant workers are more likely to perform unpaid extra work, experience wage theft and payment delays, and face greater difficulty contesting mistreatment. In the experiment, migrant workers are willing to forgo significant part of the daily wages for protection against wage theft and payment delays, for dispute mediation, and for an outside-option guarantee, indicating that workers recognize these risks and place substantial value on contractual protections that reduce them.

Keywords: Migration, Informality, Labor demand, Worker vulnerability, Labor coercion
JEL Classification: O12, O17, D22, J23, J41, J46, J47, J61, J64

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1 Introduction

Internal migration is an important characteristic of labor markets in low- and middle-income countries. In India alone, more than 40 million people migrated for work in 2011 (Census of India, 2011). A central driver of this migration is spatial and seasonal variation in earnings opportunities. Some regions are considerably more prosperous than others, wages and employment prospects tend to be higher in urban areas than in rural ones, and within rural areas, employment opportunities are especially scarce during lean seasons. Together, these forces push low-income workers to relocate in search of work (Bryan et al., 2014; Harris and Todaro, 1970). The standard explanation for why firms in destination markets hire migrants is that migrants accept lower pay than local workers, making them cheaper to hire.

Yet local workers in urban labor markets of LMICs face high rates of labor rationing. In India, recent evidence documents substantial unemployment among urban informal workers, with rationing rates in some spot markets reaching as high as 50% (Breza et al., 2021; Varun, 2025). If wage differences were the sole driver of firms' preference for migrants, persistent excess supply of local labor should place downward pressure on locals' reservation wages and reduce any acceptance-wage gap between local and migrant workers. To the extent that firms nevertheless continue to prefer migrants, the explanation must lie at least in part in non-wage margins. This line of inquiry is closely related to Piore (1979), who argues that employer demand for migrant labor may reflect features of the employment relationship rather than wages alone.

Several non-wage mechanisms could generate such a preference. First, migrants in informal urban markets may be more economically and socially vulnerable making them more willing to tolerate unfavorable working conditions, including unpaid overtime (Baseler et al., 2025; Acemoglu and Wolitzky, 2011). Second, with fewer local social obligations, and outside opportunities, they may be more reliable and less prone to absenteeism or reneging (Goraya et al., 2025; Varun, 2025). Third, selection into migration may itself signal higher motivation to exert effort. If any of these channels operate, firms might prefer migrants even if they are as likely as local workers to accept a posted wage.

This paper investigates the preferences of firms for migrant workers in comparison to local workers. We ask whether firms value migrant and local workers equally at the same wage, and if not, what is their willingness-to-pay (WTP) for migrant relative to local labor. Our hypothesis is that firms value migrant workers because migrants' vulnerability—stemming from weaker outside options, limited recourse in case of disputes, and dependence on the employer—combined with their perceived reliability, affords firms greater control over labor input. This control manifests in lower reneging, higher effort, and the scope to extract unpaid overtime. We further hypothesize that bundling employment with on-site residence amplifies each of these channels. On the worker side, we examine how migrants perceive the vulnerabilities associated with working in destination labor markets, and how much of their wages they would forgo for contract attributes that reduce these vulnerabilities.

Beyond its microeconomic implications for worker welfare and firm behavior, this question

has macroeconomic relevance. Despite its large migrant labor force, India has a low rate of urbanization—approximately 36% of its population lives in urban areas, well below the global average of over 55%.[1] A substantial literature in macroeconomic development argues that reallocating labor from low-productivity rural settings to higher-productivity urban sectors is central to structural transformation and growth (Gollin et al., 2014; Bryan and Morten, 2019; Lagakos et al., 2023). If weak contract enforcement in destination labor markets enables firms to extract unpaid work, delay wages, and limit workers' recourse, then the net returns to migration are lower than spatial wage gaps alone would suggest, potentially deterring workers at the margin from moving and reducing the supply of labor available to destination-market firms.

To answer these questions, we conduct field experiments with construction firms in Patna, the capital of Bihar, as well as with potential migrants to Patna in other districts of Bihar and workers local to Patna. We complement these experiments with incentivized belief-elicitation exercises on both sides of the market. The firm experiment is designed to separate wage-based explanations from non-wage channels. Each firm receives a menu of contracts to hire workers for a standardized 15-day construction job, with the possibility of extension, and reports the maximum daily wage it would pay for each worker–contract bundle. The experimental variation has three dimensions. First, we randomize worker type; a local worker from Patna versus a migrant worker from outside Patna.[2] Second, we vary residence arrangement. Under the *flexible* arrangement, the firm retains the option to house the worker on-site or to have the worker commute from within the city, depending on what is operationally feasible at the firm's worksite. This mirrors the prevailing residential arrangement for migrant workers in Indian construction and related informal sectors (Breman, 1996; Goodburn and Mishra, 2024; Adhvaryu et al., 2023). Under the *off-site* option, the worker commutes from within the city but does not live at the worksite or close to it. This variation shifts both the worker's dependence on the firm, the likelihood of reneging and the scope for extending hours beyond the standard workday. Third, we vary whether the contract includes a guarantee which compensates the firm if the worker reneges, directly targeting the expected cost of absence and non-completion of contracts. Crossing these dimensions yields six contracts per firm, allowing us to compare demand for migrants versus locals at the same wage and to decompose how residence arrangements and reliability guarantees each contribute to that demand. The choices of the firms are implemented using a BDM mechanism which ensures that their choices are incentive compatible. Firms hire real workers on the selected contracts, and implementation is currently underway.

To probe the mechanisms behind firms' preferences, we pair the experiment with an incentivized belief elicitation in which firms report their expectations about local and migrant workers along four margins - i) reneging, ii) willingness to work extra (often unpaid) hours, iii) effort, and

[1] India and China had similar urbanization rates of roughly 25% in the late 1980s. By the mid-2020s, China's urban share had risen to approximately 66%, while India's reached only 36% (United Nations, Department of Economic and Social Affairs, Population Division, 2024). Among the fourteen countries with populations exceeding 100 million, only Pakistan and Ethiopia have lower urbanization rates than India.

[2] Throughout, *migrant* refers to workers who are not Patna residents and have not resided in Patna for at least one year and *local* includes Patna residents and workers closely tied to the Patna labor market.

iv) social and economic vulnerability. Beliefs are incentivized using standard scoring-rule methods (Brier, 1950; Gneiting and Raftery, 2007; Hossain and Okui, 2013). On the worker side, we elicit beliefs from construction workers both in Patna (locals) and in districts outside Patna (potential migrants) about the relative prevalence of unpaid overtime, wage theft, and workplace conflict in home versus destination markets. The belief exercises on both sides of the market probe the same set of vulnerabilities — exposure to wage theft/delays, lack of recourse in disputes, and absence of outside options — as distinguishing migrant from local work. We then test whether workers value protections against these vulnerabilities through a field experiment in which each migrant worker receives two real 15-day job offers in Patna. One job is offered on a standard contract and the second on a contract bundled with a specific protection — insurance against wage theft/delay, access to dispute mediation, or a guaranteed outside option if the worker quits. Workers make accept/reject decisions across a range of wages under on-site or off-site residence, and their choices identify the wage-equivalent value of each protection.

We have four findings. First, firms exhibit a strong revealed preference for migrant workers. At the prevailing market wage of INR 550 per day, 50.4% of firms are willing to hire a migrant worker under a flexible residence arrangement, compared with 28.2% for a local worker—a 78.7% increase in demand ($p < 0.001$). Firms' average WTP for a migrant is 531 INR per day versus 471 INR for a local, a premium of 60 INR (12.7%, $p < 0.001$). This result rejects a pure wage-gap account of migrant hiring. Holding the offered wage fixed, firms value migrants more than local workers. As one contract is randomly selected and implemented at a drawn wage, truthful reporting is a weakly dominant strategy. The preference for migrants is especially pronounced among larger firms, where the stakes of worker reliability and control over labor input are higher.

The residence variation provides direct evidence that institutions bundling work with housing are central to firms' demand for migrant labor. When migrants are required to live off-site and commute, the hiring rate drops from 50.4% to 44% ($p = 0.001$) and WTP falls by 12 INR per day ($p < 0.001$). Yet even under off-site residence, firms' demand for migrants remains well above their demand for locals (44% versus 28.2%), indicating that part of the migrant premium is independent of residence while a meaningful share is tied specifically to the option of on-site housing. Off-site residence can mechanically increase expected lateness and no-shows through commuting frictions, so the lower WTP for off-site migrants is consistent with both higher absenteeism risk and a reduced scope for extra hours. We use the guarantor variation, which insures the firm against reneging and delays, to distinguish the reliability channel from the control and additional-hours channel.

Second, firms' incentivized beliefs are consistent with these revealed-preference patterns and shed light on why residence matters. Across all four dimensions—reneging, extra hours, effort, and vulnerability—firms rate on-site migrants most favorably, off-site migrants in between, and locals least favorably. The gradient between on-site and off-site migrants is particularly informative, since both groups are drawn from the same worker population. Firms expect on-site migrants to work longer hours, be more willing to supply unpaid overtime, and be less able to contest mis-

treatment or seek outside recourse. This belief result reflects firms pricing in the additional control that on-site housing affords, which may lead to reduced reneging and higher number of hours supplied by workers.

We then use the cross-cutting experimental variation to decompose the migrant–local demand gap into components attributable to absenteeism/reneging risk, excess work (additional hours at the same pay), and higher effort by migrant workers. Within the guarantor arm—where disruption costs due to absenteeism/reneging are reduced and plausibly equalized—the hiring-rate gap between flexible and off-site migrant contracts is 4.3 percentage points ($p = 0.008$), isolating the value firms place on the scope for eliciting extra hours through on-site residence. To quantify the role of absenteeism/reneging risk, we use a difference-in-differences design. The guarantee raises local hiring by 15 percentage points but migrant flexible hiring by only 9 percentage points, yielding a difference-in-differences of 6.0 percentage points ($p = 0.038$), consistent with firms pricing in migrants' lower expected disruption cost. This reliability channel accounts for 39.8% of the WTP gap, making it the single largest component.

The remaining difference between off-site migrants and local workers in the guarantor arm reflects two things that contract variation alone cannot disentangle. Even when migrants live off-site, firms may expect them to work longer hours, and they may also expect them to work harder during each hour. To separate these two channels, we combine firms' beliefs about hours worked with the observed difference in WTP between flexible and off-site migrant contracts with guarantee to estimate the value firms place on an extra hour of work, which we estimate at 10.06 INR per expected effective hour per day. Using this estimate, we calculate how much of the local–migrant off-site gap is due to longer hours and assign the remainder to higher effort per hour among migrants. Overall, we break the migrant–local hiring gap into three parts: lower absenteeism and reneging risk, which accounts for 39.8% of the gap; longer work hours, which account for 29.3%; and higher effort, which explains the remaining 30.9%.

Finally, worker-side evidence suggests that migrants themselves recognize these vulnerabilities and place substantial value on protections that reduce them. Workers report beliefs that mirror firms' expectations. Relative to home markets, employment in migrant markets is perceived to involve greater exposure to unpaid extra work, wage theft and payment delays, and pressure in the event of disputes and these risks are seen as particularly high under on-site residence arrangements. Both migrant and local workers share this perception, indicating that the vulnerability gradient is a widely recognized aspect of the labor market. In the job-offer experiment, migrant workers are willing to forgo economically meaningful amounts of wages to obtain contract features that reduce vulnerability, up to 51 INR per day (8.8%) for insurance against wage theft, 31 INR (4.9%) for dispute mediation, and 28 INR (4.4%) for an outside-option guarantee. Workers value insurance and mediation more when the job includes on-site housing, which indicates that non-payment or workplace disputes are especially costly when the employer also controls where they live and shapes their day-to-day life. Taken together, these patterns suggest that workers understand these vulnerabilities and factor them into their decision about whether migrating is

worthwhile.

Together, our results suggest a broader labor-market interpretation. Internal migration and persistent local unemployment can coexist in urban informal labor markets because firms value not only labor input itself, but also employment relationships that provide greater leverage over workers. As a result, a large pool of unemployed local workers does not necessarily generate the competitive pressure required to equalize wages or hiring across worker types. Firms are not choosing between otherwise identical units of labor. Rather, they are choosing between worker types that differ in outside options, have different likelihood of reneging, and the scope for extracting additional work under incomplete enforcement. This shifts the focus from migration as a worker-side response to wage differentials toward migration as an outcome driven in part by firms' incentives to hire workers they can more easily control.

Literature and Contributions. Our analysis relates to classic and recent work on migration and spatially separated labor markets. Canonical models emphasize migration responses to expected earnings differentials across origin and destination markets (Harris and Todaro, 1970). A large empirical literature studies barriers to profitable migration and the policies or market changes that relax them, including seasonal migration interventions (Bryan et al., 2014) and infrastructure-induced reductions in spatial frictions that affect migration and trade (Morten and Oliveira, 2024). Recent work finds sizable gains from migration and from lowering migration barriers in low-income settings (Lagakos et al., 2023; Bryan et al., 2014), raising the question of how those gains are shared between workers and employers. We complement this literature by focusing on a margin that is often implicit: the role of vulnerability and contract institutions in shaping the net returns to migration, and the possibility that employer demand for vulnerable labor affects who migrates and who is hired in destination markets and whether migration reaches its efficient level. This demand-side perspective has a long intellectual lineage in the dual labor market tradition, where Piore (1979) argues that migration is driven not only by wage gaps, but also by structural demand for workers in jobs characterized by low security, status, and bargaining power.

Our central contribution is to provide direct experimental evidence on the firm-side determinants of demand for migrant labor. Rather than inferring employer motives from observed migration or hiring patterns, we study directly what firms value when they choose between migrant and local workers under experimentally controlled contract terms. We show that firms are willing to pay a premium for migrants at identical posted wages, and we use cross-cutting variation in residence arrangements and guarantee status to decompose this premium into three margins: lower perceived disruption risk, greater scope for extracting additional hours, and higher expected effort per hour. Kuhn and Shen (2015) document a similar employer preference for migrant workers in China using callback data from an internet job board. More broadly, recent work shows that migrant labor shapes firms' production choices, labor demand, and business dynamics (Imbert et al., 2022; Mahajan, 2024). Our contribution is to move beyond documenting that preference and to experimentally identify the contract features and perceived worker attributes that sustain it.

Second, the paper contributes to the literature on migrant vulnerability and the institutions that amplify it. Existing work emphasizes how weak outside options, dependence on employers, and workplace–residence systems can worsen migrants' working conditions (Acemoglu and Wolitzky, 2011; Pun and Smith, 2007; Naidu et al., 2016; Goodburn and Mishra, 2024; Adhvaryu et al., 2023; Breman, 1996; Boudreau et al., 2024). We contribute by showing that vulnerability is not only a realized outcome for migrant workers, but also an input into firms' hiring decisions. On the firm side, employers are willing to pay more for migrant workers, especially when employment is bundled with on-site residence, and this premium is partly explained by firms' beliefs that migrants are less able to refuse extra work, less able to contest mistreatment, and more exposed to non-payment and related risks. On the worker side, both migrant and local respondents perceive migrants, especially under on-site residence, as facing greater vulnerability along these same dimensions. In the job-offer experiment, migrant workers are willing to give up substantial wages for protections against these risks. Taken together, these results connect the literature on migrant vulnerability to both sides of the market. Firms value vulnerability because it increases the profitability of the match, while workers recognize it as a meaningful cost of migration.

Third, the paper contributes to work on employer demand and labor rationing in urban informal labor markets. A growing literature shows that these markets need not clear through wages alone (Varun, 2025; Breza et al., 2021). Our results provide a demand-side reason why this may be so when local workers are available at the same wage, firms may prefer migrants because migrants are associated with different outside options, reliability, and exposure to employer control. This perspective implies that rationing of local workers can persist not because their reservation wages are too high, but because firms value non-wage attributes of migrant labor that local workers do not offer.

Finally, the paper contributes to the literature on contract enforcement and reneging in informal labor markets. Recent work documents that worker reneging and absenteeism impose substantial costs on firms and shape equilibrium labor market outcomes (Varun, 2025; Goraya et al., 2025), while historical evidence shows that contract institutions designed to limit worker exit can materially affect wages and labor allocation (Naidu and Yuchtman, 2013). We show that differential exposure to disruption risk across worker types is itself an important determinant of which workers firms choose to hire. In our decomposition, migrants' lower perceived reneging and absenteeism rates account for the largest single component of the migrant–local demand gap.

The remainder of the paper proceeds as follows. Section 2 describes our context. Section 3 describes the experimental design, and Section 4 provides a conceptual framework. Section 5 presents the results from the firm experiment. Section 6 reports the results from the worker experiment, and Section 7 concludes with implications for migration, labor-market institutions, and policy.

2 Context and Setting

We study firms and workers in Patna, the capital of the state of Bihar, India. Bihar is one of India's poorest states with per capita gross state domestic product (GSDP) of approximately US$800 (Government of Bihar, Finance Department, 2025) which is significantly lower than the national average of around US$2,700 (World Bank, 2025) and comparable to income levels in several Sub-Saharan African countries. This section describes the migration context, the construction labor market in Patna, and the characteristics of the firms and workers in our experimental sample.

2.1 Internal Migration in India

Internal migration is widespread in India. According to the 2011 Census, approximately 449.9 million people were classified as internal migrants based on place of last residence, of whom 395.7 million (87.9%) moved within their state and 54.3 million (12.1%) crossed state boundaries (Census of India (2011)). Among all internal migrants, 41.4 million cited work or employment as the primary reason for migration, with males accounting for the vast majority (35.0 million of 41.4 million).

Bihar is one of the largest sources of out migrants in India. Approximately 7.5 million people migrated from Bihar to other states, making it the second-largest sending state and accounting for 13.7% of all interstate migrants. Among male out-migrants from Bihar, 55.0% cited work or employment as the reason for migration (Appendix Table A-1). While these interstate flows are large and well documented, substantial within-state migration also occurs. Patna, as Bihar's capital and largest city, is a major destination for workers from rural districts within the state, particularly in construction. Our study focuses on this within-state flow. The migrant workers in our experiment originate from districts outside Patna but within Bihar, and travel to Patna for construction work.

Our focus on within-state migrants has a substantive implication for interpreting the results. Relative to interstate migrants, within-state migrants travel shorter distances, are more likely to share language and cultural norms with local workers, and retain closer ties to their home communities. Each of these facts plausibly attenuates the mechanisms we study: the vulnerability gradient between migrants and locals should be smaller when migrants remain within their home state, the scope for employer control through on-site residence should be weaker when home is a few hours away rather than in a different state, and the informational disadvantage that sustains exploitative working conditions should be less severe when workers can more easily return or seek help from their networks. To the extent that our experiments detect meaningful differences in firm demand and worker vulnerability even within this relatively narrow migration margin, the forces we document are likely to operate at least as strongly for interstate and international migrants, who face greater distance from home, weaker local networks, and in many cases linguistic and legal barriers that further limit their outside options. This lower-bound interpretation requires that contract enforcement does not improve markedly for longer-distance migrants—a condition that holds broadly in informal labor markets across South Asia.

2.2 The Construction Labor Market in Patna

Construction is a large and economically important sector. Nationally, it employs around 57.7 million workers and contributes about 8% to India's GDP (Baijal and Awasthi (2023)). Construction in Patna is well suited for studying firm demand for migrant labor. The sector relies heavily on manual laborers hired on short-term, informal arrangements negotiated at labor stands or through contractor networks. Workers typically gather at informal hiring points each morning, where contractors or firm owners recruit them for daily or short-term assignments. Longer engagements are often arranged through intermediary networks. On-site residence is a common feature of migrant employment in construction where workers are often housed at the worksite for the duration of a project, creating a direct link between the employment relationship and living arrangements. In what follows, we define a *local* worker as a resident of Patna, and a *migrant* worker as someone originating from a district outside Patna but within Bihar.

2.3 Sampling and Characteristics of Firms

Our sampling proceeds in two steps. First, we conduct a listing survey intended to enumerate the universe of construction firms operating in Patna. We compile the sampling frame from two sources: (i) contact lists for firm owners obtained through the local contractors' union, and (ii) in-person visits to construction sites across Patna to identify firms currently running projects. We deduplicate these sources to construct a single firm registry. Listing surveys are administered both by phone and in person and collect basic information on firm characteristics, including years of operation, firm size, and prior experience hiring migrant workers.

Not all listed firms could be reached as some owners were not present at the site at the time of visit, some did not answer phone calls, and a subset declined to participate. Non-contact and refusal are more common among larger firms in our data. In the second step, we draw the study sample from the set of firms we successfully listed. Because small firms are more numerous, we oversample larger firms to ensure adequate representation and power for size-based heterogeneity analysis. Throughout the paper, we report the estimates without sampling weights. In the Appendix, we reweight the data to account for our oversampling of larger firms and show that the main results are similar when we adjust back to the firm distribution in the contacted listing sample.

Table 1 summarizes the characteristics of the firms in our experimental sample.[3] The final experimental sample consists of 234 firms. The average firm has operated for about 15 years, employs roughly 10 permanent workers, and runs around four construction sites at a time.

Several patterns stand out. Migrant hiring is widespread: 88% of firms report having hired workers from other districts within Bihar, and 37% have hired workers from other states. Across firms, migrants account for about 44% of the permanent workforce. On-site residence is common, but sharply differs by worker type. Overall, 41% of firms report that at least one worker currently

[3] Appendix Table A-2 reports analogous statistics for firms in the listing survey.

lives on site. Conditional on worker type, about 44% of migrant workers reside on site, compared with roughly 2% of local workers. Together, these facts suggest that firms rely heavily on migrants and that on-site residence is an important part of migrant employment relationships, while it is largely absent for local workers. These baseline patterns motivate our experimental variation in residence status. Firms report negligible direct monetary outlays for housing workers on site (around INR 2 per worker-day on average), indicating that the relevant trade-offs are unlikely to be driven by explicit housing costs.

In the status quo, firms pay similar wages to local and migrant workers. Because these wages reflect equilibrium outcomes, they do not reveal firms' willingness to pay for migrants relative to locals. A second salient aspect of the market is that firms report high costs from worker reneging and late arrival. This consideration plays a central role in our experimental design and in how we interpret the mechanisms underlying firms' contract choices. The prevailing daily wage for manual construction labor in the spot markets of Patna was approximately INR 550 at the time of our experiment.

Table 1: Summary stats of firms in the experiment

	Mean	SD	N
Age of respondent	42.08	10.15	233
Years of education of respondent	6.90	4.68	229
Backward caste	0.81	0.39	234
Scheduled caste/tribe	0.11	0.31	234
Age of Firm	15.58	8.97	233
Firm is registered	0.11	0.31	231
Firm has a manager	0.18	0.38	234
No of Permanent Workers	9.78	12.86	233
No of operational sites	4.24	2.15	233
Hired worker from another district in the past	0.88	0.33	232
Hired worker from another state in the past	0.37	0.48	234
Migrant Worker (Fraction)	0.44	0.42	212
Worker Stay at Site	0.41	0.49	234
Fraction of Migrant Worker who stay at site	0.44	0.81	128
Fraction of Local Worker who stay at site	0.02	0.11	148
Cost of stay at site per day (INR)	2.14	4.80	56
Daily Wage (Local) (INR)	532.40	43.95	229
Daily Wage (Migrant) (INR)	530.79	46.52	216
Loss from Worker being 1 hr late	88.12	70.55	230
Loss from Worker reneging	332.60	272.18	219

Notes: The table reports summary statistics for firms in the experimental sample. The unit of observation is the firm; the survey was administered to the firm owner or head. Firm-level variables (e.g., years of operation, number of active construction sites, hiring history) are recorded at the firm level, while individual-level variables (e.g., respondent age and education) correspond to the respondent who completed the survey. Number of observations may vary across rows due to item non-response.

3 Experimental Design

3.1 Firm Recruitment and Incentive Compatibility

We recruit construction firms in Patna through a two-stage sampling process described in Section 2. Enrolled firms are visited by two trained enumerators, who present owners with a menu of standardized contracts for a 15-day construction job, with the possibility of extension. For each contract, the firm reports both whether it would hire a worker under that contract and the maximum daily wage it would be willing to pay (WTP). Our WTP elicitation follows the logic of the Becker–DeGroot–Marschak (BDM) mechanism (Becker et al., 1964). One contract is then selected at random and a wage is drawn; if the drawn wage is at or below the firm's stated WTP, the firm hires a worker at the drawn wage, and if it exceeds the stated WTP, no hire takes place. Under expected-utility maximization, truthful reporting is a weakly dominant strategy as overstating WTP risks committing the firm to an unprofitably high wage, while understating it may cause the firm to forgo a worker it would have preferred to hire.[4] Selected contracts are implemented and firms hire real workers under the chosen terms.[5]

To ensure comprehension in our context, enumerators administered comprehension checks after explaining the mechanism, verifying that firm owners understood that truthfully reporting their maximum willingness to pay was in their best interest and that misreporting—in either direction—could lead to a worse outcome. We also assess internal consistency of the WTP data by checking whether firms' responses satisfy weak monotonicity across contracts (e.g., WTP for a guaranteed contract weakly exceeds WTP for the corresponding non-guaranteed contract). We find that all but one firm satisfy weak monotonicity across all pairwise comparisons, providing reassurance that the mechanism was well understood. Beyond eliciting WTP, firms also rank the contracts included in the experiment, though these rankings are not incentivized. Firms complete a short background survey prior to the experiment and an incentivized belief elicitation exercise is conducted at the close of the session.

3.2 Treatment Arms

The experiment varies three contract dimensions, yielding six contracts presented to each firm:

1. **Worker Type.** Firms are offered an opportunity to hire either a *local* worker, a native of Patna who resides in the city, or a *migrant* worker originating from outside Patna but within Bihar. *Local* workers also include workers in neighboring districts who search for work at labor stands in Patna or workers born in other districts who have been living in Patna for more than a year.

2. **Residence**

[4] BDM-based WTP elicitation has been shown to produce reliable valuations in field settings in developing countries, including among populations with limited formal education (Berry et al., 2020; Burchardi et al., 2021).

[5] Implementation is ongoing, and approximately 20% of firms have hired a worker on the randomly selected contract.

- **Flexible.** Under the *flexible* arrangement, the firm retains the option to house the worker on-site or to have the worker commute from within the city, depending on what is operationally feasible at the firm's worksite. This arrangement applies only to migrant workers, for whom on-site housing is a realistic possibility.
- **Off-Site.** Under the *off-site* arrangement, the migrant worker is required to commute daily from a residence within the city; on-site housing is not available, and the firm is informed that the worker will reside in rented accommodation in the city. Local workers are always assigned this arrangement, as on-site residence is out of equilibrium for local workers in practice (see Table 1) and the firms are informed that local workers will commute from their residence. The residence dimension therefore applies only to migrant contracts, with local worker contracts fixing the off-site condition throughout.

3. **Guarantor.** In the guarantor condition, the firm is compensated if the worker arrives late or fails to complete the job. Specifically, the guarantor provides up to INR 150 in compensation for late arrival and up to INR 400 for reneging or extended absence, and additionally arranges a replacement worker in the event of job non-completion. In the no-guarantor condition, the firm bears these disruption costs itself. The guarantee reduces the firm's expected disruption costs from worker lateness, absenteeism, and reneging.

These dimensions yield six contracts (Table 2): two for local workers (with and without guarantor, both off-site) and four for migrant workers (flexible or off-site, each with and without guarantor). Because all six contracts are presented to each firm by the same enumerator within a single session, a potential concern is that firms may infer the experimenter's hypothesis and adjust their responses accordingly. To address this, the order in which contracts are presented to each firm is randomized across firms. This ensures that our estimates are not driven by anchoring on the first contract shown or by systematic fatigue effects across later contracts.

A potential concern with the residence variation is that firms may attribute differences between on-site and off-site migrants to worker selection rather than to residence itself, if they believe that workers who end up living on-site are systematically different from those who commute. To address this, we inform firms before the experiment that residence is determined by a lottery conducted after recruitment. All workers will be drawn from the same pool and recruited through the same process, and the lottery determines which worker is allocated to on-site residence and which commutes. This framing ensures that any difference in firms' valuations of the flexible and off-site migrant contracts can be interpreted as the effect of residence on firm demand, rather than as a reflection of perceived compositional differences between the two groups of workers. The belief survey does not include the lottery framing. Firms are asked about their general expectations regarding each worker type, reflecting their priors from experience in the market rather than beliefs about a randomly assigned pool.

Table 2: Experiment Design

Local, No Guarantor	**Local, Guarantor**
Migrant, Flexible, No Guarantor	**Migrant, Flexible, Guarantor**
Migrant, Off-site, No Guarantor	**Migrant, Off-site, Guarantor**

3.3 Identifying Variation in Treatment

The three treatment dimensions are designed to separately identify the mechanisms that could generate a firm-level preference for migrant over local workers.

The comparison between the local and migrant flexible contracts, both without a guarantor, identifies the baseline migrant–local hiring gap. It captures the value of a migrant worker under the contract bundle firms commonly use for migrants, which includes the option of on-site residence. It is therefore not a pure worker-type effect holding residence fixed. Firms report the maximum daily wage they would be willing to pay for each contract, so a difference in WTP between these two contracts is a direct revealed-preference measure of how much more firms value migrant relative to local workers. Crucially, this comparison speaks to the demand side of the market and a higher WTP for migrants cannot be explained by the supply-side argument that migrants simply accept lower wages, since WTP captures what the firm is willing to pay, not what the worker is willing to accept. Any migrant premium in WTP must therefore reflect factors that make migrant workers more profitable to employ from the firm's perspective.

The residence variation is designed to isolate the role of on-site housing as a mechanism of labor control. The flexible contract gives the firm the option to place the worker on-site, whereas the off-site contract shuts this option entirely. Bundling work with residence has been documented as a technology of labor control in a range of settings—including dormitory labor regimes in Chinese manufacturing and workplace–residence systems in Indian brick kilns, sugarcane harvesting, and garment factories (Goodburn and Mishra, 2024). In our context, on-site residence plausibly affects firm profits through two channels. First, workers who commute face higher risks of late arrival and no-shows due to commuting frictions, so off-site residence mechanically increases expected absenteeism costs. Second, on-site residence expands the practical scope for extracting working hours beyond the standard workday. When a worker lives at the site, it is easier for the firm to request early starts, late finishes or additional supervisory work without additional compensation. By comparing firm WTP for flexible versus off-site migrant contracts, we can assess how much of the migrant premium is attributable to the value of this residential flexibility.

The guarantor variation is designed to isolate the contribution of absenteeism and reneging risk to firms' demand for migrant workers. By compensating the firm for delays and job non-completion and providing a replacement worker, the guarantor contract effectively insures the firm against the expected disruption costs from unreliable labor. If firms perceive migrants as more reliable than locals, the guarantee is more valuable for local contracts and should therefore compress the migrant–local gap by raising demand for locals more than for migrants. Comparing

how the guarantor changes WTP for local versus flexible migrant contracts in a difference-in-differences design therefore identifies the share of the migrant premium attributable to perceived reliability differences, separately from other channels such as excess hours extraction or higher effort per hour.

Together, the three treatment arms support a decomposition of the overall migrant–local WTP gap into three components: the value firms place on the scope for excess hours extraction, the value of migrant reliability, and a residual that reflects effort and other per-hour productivity differences between migrant and local workers. The formal decomposition of this gap is developed in the conceptual framework in Section 4.

4 Conceptual Framework

4.1 Environment and contracts

A firm i considers hiring one worker for a horizon of T days. There are two worker types $s \in \{L, M\}$, where L denotes a local worker and M denotes a migrant worker. Migrant contracts vary by residence arrangement $r \in \{F, O\}$: F (*flexible*) gives the firm the option to have the worker reside on-site (if feasible) or commute; O (*off-site*) requires commuting. Local workers are always assigned off-site commuting ($r = \varnothing$), so the residence dimension varies only for migrants. Each contract also varies by a guarantee indicator $g \in \{0, 1\}$.

The experiment offers six contracts to each firm:

$$
\begin{aligned}
c_1 &= (L, \varnothing, 0), \quad c_2 = (L, \varnothing, 1), \\
c_3 &= (M, F, 0), \quad c_4 = (M, O, 0), \\
c_5 &= (M, F, 1), \quad c_6 = (M, O, 1).
\end{aligned}
$$

Firms report (i) whether they would hire under each contract and (ii) the maximum *daily wage* they would pay if they would hire (WTP), denoted $\omega_{i,c}$.

4.2 Revenue: hours and effort

Let $p_i > 0$ denote firm i's marginal value of one baseline effective labor-hour. Worker productivity per hour has a baseline normalized to 1 and a type–residence shifter $(1 + \theta_{s,r})$ with $\theta_{s,r} > -1$. We normalize $\theta_{L,\varnothing} = 0$; the free parameters are $\theta_{M,F}$ and $\theta_{M,O}$.

Let $\tilde{h}_{i,s,r,g}$ denote expected effective hours on a worked day under contract (s, r, g):

$$
\tilde{h}_{i,s,r,g} \;\equiv\; h_{i,s,r} + x_{i,s,r} - \ell^{g}_{i,s,r}, \qquad \ell^{g}_{i,s,r} \;\equiv\; (1 - g)\, \ell_{i,s,r},
$$

where $h_{i,s,r}$ is expected regular hours if on time, $x_{i,s,r}$ is expected unpaid excess hours, and $\ell_{i,s,r}$ is expected hours lost to delay. Under $g = 0$ we have $\ell^{0}_{i,s,r} = \ell_{i,s,r}$, while under the guarantee ($g = 1$) lateness is fully compensated so $\ell^{1}_{i,s,r} = 0$.

Let $\Delta_{i,s,r} \geq 0$ denote expected downtime (in days) caused by quitting and replacement frictions (search, matching, onboarding), net of any replacement the firm can arrange. The number of *filled workdays* over the T-day horizon is

$$D_{i,s,r} \;\equiv\; T - \Delta_{i,s,r},$$

so that if the worker quits early, the firm can still produce after replacement except during the downtime $\Delta_{i,s,r}$.

Expected revenue from hiring type s under residence arrangement r and guarantee status g is

$$\mathbb{E}[R_{i,s,r,g}] \;=\; p_i\,(1+\theta_{s,r})\,\tilde{h}_{i,s,r,g}\,D_{i,s,r}.$$

4.3 Costs: wages, hiring, and disruption

Let $\kappa_s \geq 0$ denote the one-time hiring cost for worker type s (reflecting search and onboarding). Wages are paid only for days worked, so expected wage payments at daily wage w are $w\,\mathbb{E}[D_{i,s,r}]$.

We treat absence and quitting symmetrically: both create a disruption that requires the firm to adjust production and potentially arrange a replacement. Let $Z_{i,s,r}$ denote the total number of disruption events over the T-day horizon. We summarize disruption costs as

$$C^{dis}_{i,s,r} \;=\; c_i\,\mathbb{E}[Z_{i,s,r}],$$

where c_i is the firm-specific shadow cost per disruption event.

4.4 Guarantee contract

Under the guarantee ($g = 1$), the firm receives a disruption-contingent transfer and, if the worker quits, a replacement worker is provided. We model the guarantee as reducing expected disruption costs, but not below zero.

Let $\Gamma_{i,s,r} \geq 0$ denote the contract-specific value of the guarantee. Then

$$\mathbb{E}\Big[C^{dis,\,g=1}_{i,s,r}\Big] \;=\; \max\Big\{\,0,\;\mathbb{E}\Big[C^{dis,\,g=0}_{i,s,r}\Big] - \Gamma_{i,s,r}\Big\}.$$

The object $\Gamma_{i,s,r}$ summarizes the expected cash compensation for absence and quitting, and the value of receiving a replacement worker when quitting occurs.

4.5 Profit and willingness to pay

Expected profit from hiring under contract (s, r, g) at daily wage w is

$$\Pi_{i,s,r,g}(w) \;=\; \mathbb{E}\Big[p_i\,(1+\theta_{s,r})\,\tilde{h}_{i,s,r,g}\,D_{i,s,r}\Big] \;-\; w\,\mathbb{E}[D_{i,s,r}] \;-\; \kappa_s \;-\; \mathbb{E}\Big[C^{dis,\,g}_{i,s,r}\Big].$$

The firm's WTP is the daily wage at which expected profit equals zero: $\Pi_{i,s,r,g}(\omega_{i,c}) = 0$.

Under the flexible migrant contract ($r = F$), the firm is not committing ex ante to a single residence arrangement. Flexibility gives the firm the option to place the worker on-site when that is feasible, and otherwise to have the worker commute. For firms that report on-site residence is feasible, the flexible contract yields the on-site valuation; for firms without on-site capacity, it collapses to the off-site contract. The key prediction is that the valuation advantage of flexible over off-site contracts should be larger, on average, among firms that report on-site residence is feasible, because these firms are more likely to exercise the option embedded in flexibility.

4.6 Decomposition of the migrant–local valuation gap

For expositional clarity, let the six WTP bids be

$\omega_{i,L} = \omega_{i,(L,\varnothing,0)}$, $\omega_{i,LG} = \omega_{i,(L,\varnothing,1)}$, $\omega_{i,MF} = \omega_{i,(M,F,0)}$, $\omega_{i,MO} = \omega_{i,(M,O,0)}$, $\omega_{i,MFG} = \omega_{i,(M,F,1)}$, $\omega_{i,MOG} = \omega_{i,(M,O,1)}$.

Define the overall migrant–local demand gap for the baseline (non-guaranteed) contracts as

$$\Delta_i^{tot} \equiv \omega_{i,MF} - \omega_{i,L}.$$

We decompose Δ_i^{tot} into three components.

(i) Disruption-cost/Reneging wedge. The guarantee premium reveals how much disruption insurance is valued for each worker type. Define

$$DW_i \equiv (\omega_{i,LG} - \omega_{i,L}) - (\omega_{i,MFG} - \omega_{i,MF}).$$

DW_i is positive when the guarantee is more valuable for local contracts than for migrant flexible contracts—i.e., when locals are perceived as less reliable and firms price in a larger expected disruption cost for them. A positive DW_i therefore indicates that part of the baseline migrant premium reflects migrants' lower perceived disruption risk.

(ii) Effort and per-hour productivity. Define the migrant–local productivity residual under the off-site guaranteed contracts:

$$PR_i \equiv \omega_{i,MOG} - \omega_{i,LG}.$$

PR_i is the migrant–local WTP gap when both worker types commute and the guarantee is held fixed. It captures remaining differences under commuting: a combination of effective hours and effort intensity. To separate these margins, we estimate the INR value of one additional expected effective hour per day, β_H, by regressing the flexibility wedge under the guarantee on the believed effective-hours gap between on-site and off-site migrants, focusing on firms that report on-site residence is feasible:

$$EH_i = \beta_H \left(\tilde{h}_{i,M,N,1} - \tilde{h}_{i,M,O,1}\right) + \eta_i,$$

where $\tilde{h}_{i,M,N,1}$ and $\tilde{h}_{i,M,O,1}$ are firm i's belief-based expected effective hours for on-site (N) and off-site (O) migrants under the guarantee, and $\widehat{\beta}_H$ denotes the OLS estimate.

The effort component is then defined by netting out the portion of PR_i attributable to belief-based effective-hours differences between off-site migrants and locals:

$$Effort_i \;\equiv\; PR_i \;-\; \widehat{\beta}_H \left(\tilde{h}_{i,M,O,1} - \tilde{h}_{i,L,\varnothing,1}\right).$$

This isolates effort intensity, task-completion speed, and other per-hour productivity differences, net of hours differences across worker types.

(iii) Excess-Work Extraction. Using the guaranteed contracts to hold fixed disruption compensation, define

$$EW_i \;\equiv\; \omega_{i,MFG} - \omega_{i,MOG} \;+\; \widehat{\beta}_H \left(\tilde{h}_{i,M,O,1} - \tilde{h}_{i,L,\varnothing,1}\right).$$

The first term, $\omega_{i,MFG} - \omega_{i,MOG}$, is the value of residential flexibility relative to off-site commuting for migrant workers when the guarantee is held fixed. We interpret this as the gain from being able to implement on-site residence when feasible, which primarily reflects the expanded scope for unpaid extra hours. The second term captures the effective-hours advantage of off-site migrants over local workers under the guaranteed contracts. Here, $\widehat{\beta}_H$ is the estimated INR value of one additional expected effective hour per day, obtained from the relationship between the guaranteed migrant residence wedge and firms' beliefs about the on-site versus off-site hours gap. Multiplying this estimate by $\tilde{h}_{i,M,O,1} - \tilde{h}_{i,L,\varnothing,1}$ converts the migrant–local hours difference under commuting into wage units. Taken together, EW_i measures the total contribution of excess work and effective-hours differences to the migrant premium.

The identifying assumption is that the guarantee fully covers expected disruption costs under both migrant residence arrangements, that is, $\Gamma_{i,M,r} \geq \mathbb{E}[C_{i,M,r}^{dis,\, g=0}]$ for $r \in \{F, O\}$, so that the guaranteed migrant residence wedge isolates the value of residential flexibility net of disruption risk. An additional maintained assumption is that the estimated mapping from expected effective hours to willingness to pay, $\widehat{\beta}_H$, also applies when valuing the off-site migrant–local hours difference.

Accounting identity. Using the definitions above, the baseline migrant–local WTP gap can be written as

$$\Delta_i^{tot} \;\equiv\; \omega_{i,MF} - \omega_{i,L} \;=\; \underbrace{\left(\omega_{i,MFG} - \omega_{i,MOG}\right)}_{EH_i} \;+\; \underbrace{\left(\omega_{i,MOG} - \omega_{i,LG}\right)}_{PR_i} \;+\; \underbrace{\Big[\left(\omega_{i,LG} - \omega_{i,L}\right) - \left(\omega_{i,MFG} - \omega_{i,MF}\right)\Big]}_{DW_i}.$$

Substituting the definition of $Effort_i$ for PR_i yields

$$\boxed{\Delta_i^{tot} \;=\; EW_i \;+\; Effort_i \;+\; DW_i.}$$

EW_i is the excess work extraction wedge, DW_i is the excess guarantee premium for locals relative to migrants (capturing the reliability advantage of migrant workers), and the remaining terms split the off-site guaranteed migrant–local gap into a baseline-hours component and a residual reflecting effort and other per-hour productivity differences.

5 Firm Experiment: Results

This section presents results from the firm experiment described in Section 3. Each firm receives real offers to hire workers under six contracts that vary worker type (local or migrant), residence arrangement (flexible or off-site, for migrants), and guarantee status. We first document the baseline migrant–local demand gap and the role of residence (Section 5.2). We then use incentivized belief elicitation to examine the mechanisms that firms perceive as underlying this gap (Section 5.3). Finally, we use the cross-cutting contract variation to decompose the migrant premium into its constituent channels following the accounting framework in Section 4 (Section 5.5).

5.1 Empirical Specification

We estimate the effect of contract type on three outcomes: (i) the firm's WTP, measured as the maximum daily wage (in INR) it is willing to pay; (ii) demand at the market wage of INR 550; and (iii) demand across a wage schedule from INR 500 to INR 600 in increments of INR 25. The firm directly reports its WTP for each contract; outcomes (ii) and (iii) are constructed from this response, with demand at wage w defined as $\mathbf{1}\{\text{WTP}_{ij} \geq w\}$. Outcomes (i) and (ii) are estimated using the following specification:

$$Y_{ij} \;=\; \alpha \;+\; \beta\, \mathit{Treat}_{ij} \;+\; \mu_i \;+\; \varepsilon_{ij}, \tag{5.1}$$

where Y_{ij} is the outcome for firm i and contract j. Treat_{ij} is a vector of indicators for the contract type, with the local (non-guarantor) contract as the omitted category. Since each firm receives all six contracts, μ_i absorbs firm-level differences and identification comes from within-firm variation across contract types. Each bar in the figures that follow represents the sum of the baseline mean and the relevant regression coefficient. Standard errors are clustered at the firm level. For outcome (iii), we stack observations across wage levels within each firm–contract pair and add wage fixed effects to the specification above.

As described in Section 3, firms first report whether they would hire a given worker at all; conditional on hiring, they then report the maximum daily wage they would be willing to pay. Firms that report they would not hire a worker effectively reveal a WTP of zero. Since non-hiring rates differ across worker types, including these zero-WTP observations would mechanically amplify the measured WTP gap beyond what reflects firms' underlying wage valuations, making it difficult to interpret the WTP difference as a clean measure of relative preference. To address this, we left-censor WTP at INR 350, which lies 50 INR below the minimum positive WTP of INR 400

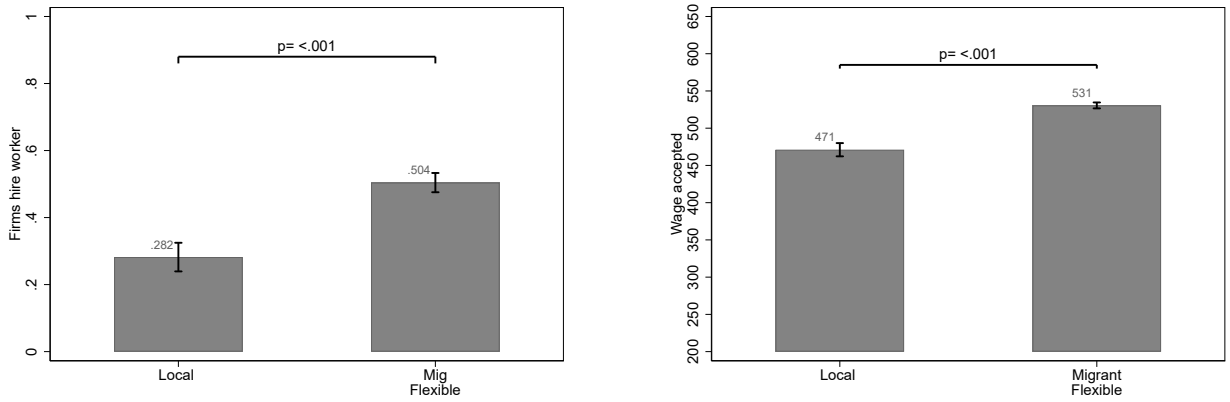
reported by any firm for any contract. This censoring retains meaningful variation across firms and contracts while ensuring that non-hirers do not mechanically inflate the migrant–local WTP differential.

5.2 Results

Firms' Demand for Migrant versus Local Workers

Figure 1 presents the hiring rates at the market wage and WTP for local workers against migrant workers under a flexible residence arrangement. Panel (a) shows that at the prevailing market wage of 550 INR per day, firms hire local workers at a rate of 28.2%. Demand for migrant workers under the flexible residence arrangement is substantially higher, with the hiring rate rising to 50.4%—a 22.2 percentage point increase (78.72% higher, $p < 0.001$). This is a large effect. It implies that at the same posted wage, roughly one in two firms is willing to hire a migrant worker, against fewer than one in three for a local worker. This is our central finding. Firms exhibit a strong revealed preference for migrant labor at identical wages, rejecting a pure supply-side account in which migrants are simply more willing to accept a lower posted wage.

Figure 1: Probability of hiring of firms



(a) Demand for workers at market wage

(b) WTP for workers

Notes: The figure compares firms' demand for local workers and migrant workers offered under a flexible residence arrangement (the firm may house the worker on-site or off-site at its discretion). Panel (a) shows the probability that a firm hires the worker at the prevailing market wage of INR 550 per day; Panel (b) shows the firm's maximum willingness-to-pay (WTP) for the worker, left-censored at INR 350 for non-hirers. Both outcomes are estimated from Eq. 5.1 with firm fixed effects. The local (no-guarantor) contract is the omitted baseline. Each bar is the sum of the control mean and the relevant regression coefficient. Standard errors are clustered at the firm level. p-values are shown for different pairs for a two-sided test.

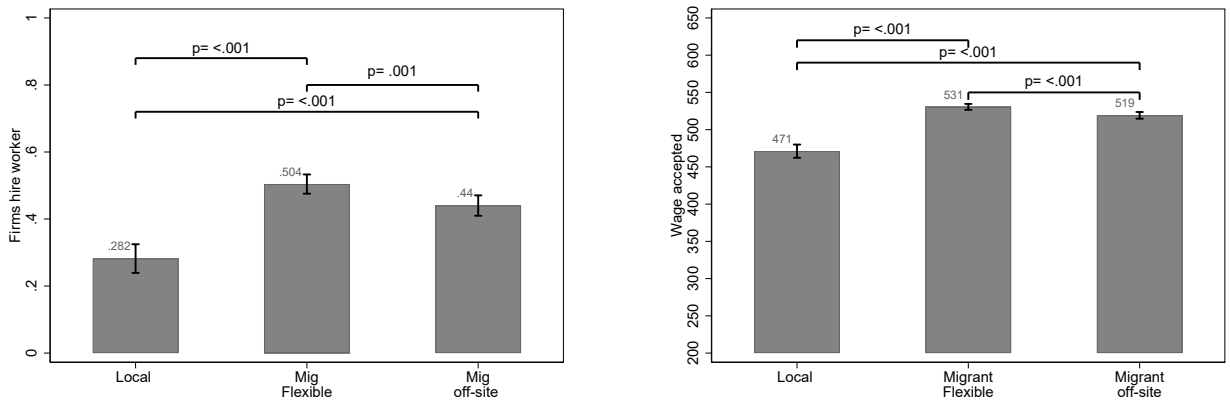
Panel (b) corroborates this finding through the WTP measure. Firms are willing to pay an average of 471 INR per day for a local worker. For a migrant worker under the flexible arrangement, this rises to 531 INR per day—a premium of 60 INR (12.73% higher, $p < 0.001$). The WTP gap is economically meaningful and a premium of 60 INR represents a significant additional daily labor cost that firms are willing to incur to secure a migrant over a local worker. Together, Panels (a) and

(b) suggest that firms not only hire migrants more readily at the market wage but are also willing to pay a non-trivial wage premium to do so.

The Role of Residence: Migrant Off-Site Contracts

The hiring gap between migrant and local workers established above could reflect several mechanisms. To begin separating them, Figure 2 introduces a third contract in which a migrant worker has an *off-site* residence arrangement. Under this contract, the firm is informed that the worker will commute daily from within the city.

Figure 2: Probability of hiring under different residence arrangements



(a) Demand for workers at market wage

(b) WTP for workers

Notes: The figure extends Figure 1 by introducing a third contract arm: a migrant worker required to commute daily from off-site accommodation (off-site residence). Panel (a) shows the probability that a firm hires the worker at the prevailing market wage of INR 550 per day; Panel (b) shows the firm's maximum WTP, left-censored at INR 350 for non-hirers. Both outcomes are estimated from Eq. 5.1 with firm fixed effects. The local (no-guarantor) contract is the omitted category. Each bar is the sum of the control mean and the relevant regression coefficient. Standard errors are clustered at the firm level. p-values are shown for pairs for a two-sided test.

Panel (a) shows that imposing off-site residence reduces firms' hiring rate for migrant workers from 50.4% under the flexible arrangement to 44%—a decline of 6.4 percentage points (12.7% lower, $p = 0.001$). Panel (b) tells a similar story: WTP falls from 531 INR per day to 519 INR when the worker is restricted to off-site residence, a reduction of 12 INR (2.25% lower, $p < 0.001$). A meaningful share of the migrant premium is therefore tied specifically to the option of on-site housing.

The majority of the migrant premium, however, operates through channels other than residence. Even when migrants must commute, firms hire them at a rate of 44%, still 15.8 percentage points above the local hiring rate of 28.2% ($p < 0.001$), and off-site migrants command a WTP 48 INR higher than locals (10.0% higher, $p < 0.001$).

These patterns are consistent with two distinct mechanisms through which on-site residence raises the value of migrant labor. First, when workers reside at the worksite, commuting frictions are mitigated, reducing the probability of late arrivals, absenteeism and reneging. This is valuable

for firms in a setting where worker absenteeism and reneging is high (Varun (2025); Goraya et al. (2025); Krishnaswamy (2019)). Second, and perhaps more importantly, on-site residence expands the scope for extracting additional (unpaid) hours of work: workers living at the site are available before and after normal working hours in ways that commuters are not.

While the prevailing wage at most spot markets is INR 550, there is some spatial variation, and most firms pay workers between INR 500 and INR 600. Appendix Figure A-2 plots firms' hiring probabilities across this wage range for the three baseline contracts, providing a more complete picture of demand across the wages that firms actually offer in the market. At every wage in the schedule, demand for migrant flexible contracts exceeds that for migrant off-site contracts, which in turn exceeds demand for local contracts. Separately, we also ask firms to rank the contracts in order of preference. These rankings are not incentivized but provide an independent check on the demand results. Appendix Figure A-1 shows that the ordering is stark: roughly 87% of firms rank the migrant flexible contract first, while about 76% rank the local contract last.

Heterogeneity across firm types. Firms that are larger, manage more sites, and possess on-site housing infrastructure have greater scope to extract additional hours and stronger incentives to avoid the losses from worker disruption. The migrant premium should therefore be larger among these firms.

We test this prediction along two dimensions. First, Appendix Figure A-5 splits the sample by the number of active construction sites. Larger firms—those operating five or more sites—manage longer and more complex projects, and bear higher costs when a worker is absent or reneges because delays at one site can cascade to others. These firms also have stronger infrastructure for on-site housing and greater ability to extend the workday. Consistent with this, both the local–migrant gap and the migrant flexible–off-site gap widen monotonically with firm size. In hiring rates, the local–flexible gap rises from 12.8 percentage points among firms with two or fewer sites to roughly 20 percentage points among firms with three or more sites. The WTP results are sharper: the local–flexible gap more than doubles from 27 INR for the smallest firms to 65 INR for larger firms, with the difference-in-differences between the smallest and larger firms statistically significant at 39 INR ($p = 0.01$). The migrant flexible–off-site gap, which captures the premium related to on-site residence, increases from 7 INR for the smallest firms to 16 INR for the largest firms. This is consistent with small firms having less to gain from the control that on-site housing affords and lower costs from worker disruption.

Second, Appendix Figure A-6 splits the sample by whether the firm currently has facility to house workers at the worksite. Among firms with this facility, the flexible–off-site gap is large: 8.1 percentage points in hiring and 16 INR in WTP. Among firms who currently don't have residential facilities, the gap is roughly halved (p-value of DiD is 0.116). A small gap remains as there is a non-trivial likelihood that they may have this facility at a future work site when they plan to hire workers. Importantly, however, both groups exhibit a large local–migrant gap, indicating that the migrant premium is not exclusively about housing. Even firms without accommodation facilities

hire migrants at substantially higher rates than locals, consistent with the premium also reflecting lower absenteeism risk and higher perceived effort channels.

Robustness to reweighting. To ensure precision of our estimates for larger firms, our experimental sample oversamples larger firms relative to the population of construction firms in Patna. To assess whether this drives our results, we conduct two reweighting exercises (details in Appendix A.3.3 and A.3.4). First, we reweight firms using inverse-probability weights so that the distribution of firm size (number of active construction sites) in the estimation sample matches the population distribution from the listing survey. The migrant–local hiring gap narrows from 22.2 to 17.81 percentage points and the WTP gap from 60 to 50 INR, consistent with the migrant preference being stronger among larger firms. The flexible–off-site gap also attenuates modestly. All pairwise differences remain significant at $p < 0.001$ (Appendix Figures A-11 and A-12). Second, we further weight each firm by its number of permanent workers, so that the estimates reflect demand at a randomly drawn job slot in the market rather than a randomly drawn firm. Under these employment weights, the migrant–local hiring gap is 18.9 percentage points (WTP gap of 55 INR) and the flexible–off-site gap is 6.8 percentage points (13 INR in WTP), with all comparisons significant at $p < 0.001$ (Appendix Figures A-13 and A-14).

5.3 Beliefs

The results in Section 5.2 establish that firms pay a substantial premium for migrant workers and that a portion of this premium is tied to the option of on-site residence, but they do not disentangle the relative importance of the specific channels—reliability, hours extraction, or effort—through which the premium might operate. To provide a mechanism-level foundation for the decomposition in Section 5.5, we turn to incentivized belief elicitation. We elicit firms' first-order beliefs about migrant and local workers along the dimensions most likely to affect profitability: absenteeism and reneging, willingness to supply extra hours, effort, and social and economic vulnerability. Beliefs serve two roles in our analysis. First, they document whether firms hold systematically different expectations about migrant and local workers along these dimensions, and whether—consistent with the residence results—these expectations are stronger for on-site migrants relative to off-site migrants. Second, the belief-based expected-hours measures enter the decomposition directly as measurement inputs.

Implementation

We elicit beliefs for three worker categories separately: (i) local workers from Patna, (ii) migrant workers from outside Patna who reside on or near the worksite, and (iii) migrant workers from outside Patna who live off-site in the city and commute daily. Firms are explicitly told to hold the type of work and contractual conditions constant across categories, so that stated differences reflect perceived worker-type differences rather than confounds from job characteristics.

For each worker category, we elicit beliefs on twelve outcomes, organized around four thematic clusters. The *absenteeism and reneging* cluster covers expected days of absenteeism by different workers over a 7-day window, the number of workers (out of 10) expected to leave before completing a 7-day job, and average minutes late on days the worker does show up. The *extra work* cluster elicits expected daily hours of work on a normal workday and the number of workers (out of 10) willing to work an additional unpaid hour when asked to do so. The *effort* cluster asks for an effort rating (1–10), a productivity measure (output per hour), and the number of workers (out of 10) who can be trusted to work well without supervision. Finally, the *vulnerability* cluster covers workers' expected outside option (days to find a new job in Patna if they leave), the number likely to dispute or stop working if payment is delayed by two days, the number likely to seek outside help (e.g., from worker associations or state authorities) in the event of a wage dispute, and the number with family/friends/relatives in Patna who could assist in an emergency. While the first three clusters capture distinct channels through which migrant labor raises firm profits, vulnerability reinforces the first three channels. Weaker outside options and limited recourse reduce workers' ability to resist demands for extra hours, to leave when dissatisfied, or to shirk. The text of the questions is in Appendix C.1.2.

Responses are incentivized using a binary quadratic scoring rule (Brier, 1950; Gneiting and Raftery, 2007; Hossain and Okui, 2013). Firms are informed that their stated beliefs will be compared against a benchmark computed from responses collected at other real worksites, and that the closer their report is to this benchmark, the higher their probability of earning a bonus of INR 150. At the close of the survey, a random draw selects a subset of questions on which the bonus is paid.[6]

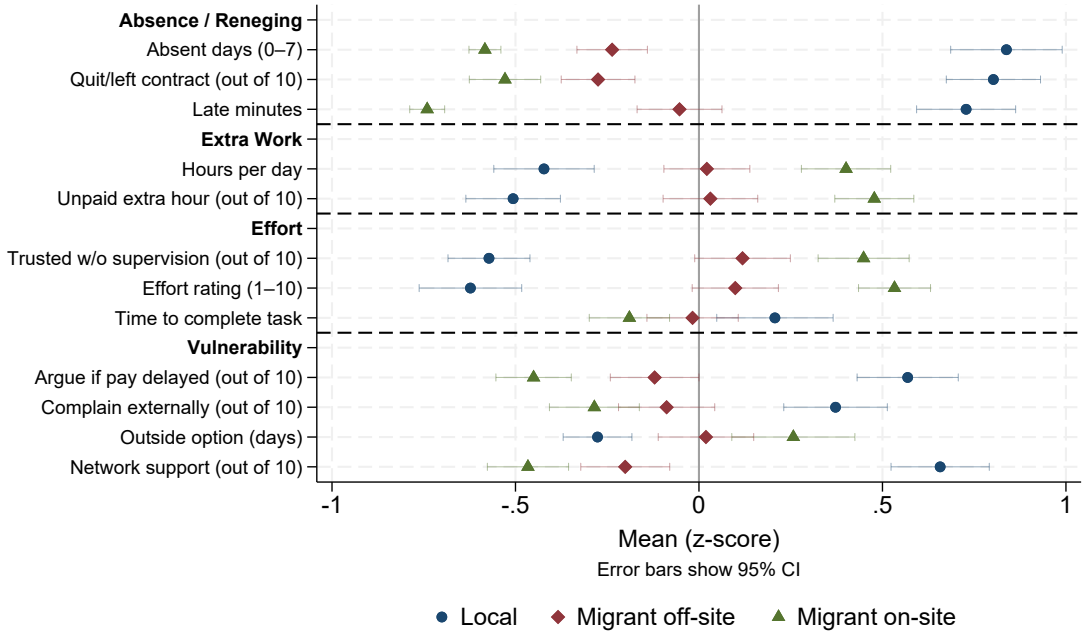
Results

Figure 3 plots firm beliefs for each of the twelve outcomes, expressed as z-scores, separately for local workers, off-site migrants, and on-site migrants. The pattern across the absenteeism and reneging cluster is consistent. Firms expect local workers to be absent more often, more likely to renege before completing a contract, and more likely to arrive late. On-site migrants are perceived as the most reliable, with off-site migrants sitting between the two groups—better than locals on reneging and absence, but somewhat worse than on-site migrants, plausibly reflecting the commuting frictions that off-site residence introduces. The local-migrant gap in beliefs about reneging and absenteeism is among the largest in the figure, consistent with firms' reported high cost of worker non-completion (approximately INR 330; see Table 1). The on-site–off-site gap is larger for minutes late than for absenteeism. This is consistent with what one would expect, since lateness is mechanically tied to commuting frictions and should therefore exhibit a steep residence gradient, whereas absenteeism reflects a broader set of behavioral margins that are less directly affected by commute distance.

In the extra work cluster, firms believe that migrants—especially those residing on-site—are

[6]Three questions are chosen randomly and therefore firm owner can win upto 450 INR (around 5 USD).

Figure 3: Beliefs of Firms



Notes: The figure plots firms' incentivized beliefs about 12 worker outcomes, organized into four thematic clusters: absenteeism and reneging, extra work, effort, and vulnerability. Each outcome is expressed as a z-score, standardized across the full sample of firm-outcome observations. Beliefs are elicited separately for three worker types: local workers (from Patna), migrant workers residing on or near the construction site (on-site migrants), and migrant workers commuting from off-site accommodation (off-site migrants). Firms are instructed to hold the type of work and payment structure constant across categories. Responses are incentivized using a binary quadratic scoring rule, with bonus payments tied to accuracy relative to a benchmark constructed from responses collected at other real worksites. Error bars show 95% confidence intervals based on standard errors of the mean.

substantially more willing to supply unpaid overtime when asked to do so, and that they work more hours on a typical day. The gap between on-site and off-site migrants is notable here. Even holding worker type fixed, on-site residence is associated with meaningfully higher expected hours, which is consistent with the physical availability that on-site residence affords and with firms' inability to extend working hours for workers who must commute home.

Firms also rate migrants higher on effort. Both the effort rating and the trust-without-supervision measure are higher for migrants than for locals, with on-site migrants rated highest. The ordering—on-site migrants $>$ off-site migrants $>$ locals—is consistent across all effort-related outcomes and large in magnitude. The gradient between on-site and off-site migrants is particularly noteworthy, since both groups are drawn from the same worker population and face the same contract terms, so residence alone should not mechanically affect underlying effort or ability. Two distinct forces could account for this pattern. First, firms may believe that workers willing to live on-site are positively selected on motivation or the quality of their outside options. Second, physical proximity may give firms greater capacity to monitor and direct workers, making on-site residence a technology of effort extraction rather than simply a signal of worker type. To separate these channels, we present firms with a follow-up vignette that holds selection constant by telling them

that the on-site and off-site workers are identical in all observable respects except residence (see Appendix C.1.3). Under this framing, a majority of firms equalize their effort ratings for the two migrant types, suggesting that selection accounts for much of the perceived gap. However, a non-trivial share of firms continue to rate on-site migrants higher even when selection is neutralized. When asked to explain this residual difference, these firms consistently cite the ability to monitor and direct on-site workers, suggesting that on-site residence also functions as a technology of labor control. This is reminiscent of labor-tying arrangements documented in agrarian markets, where interlocking labor, credit, and housing transactions shift bargaining power toward employers (Bardhan, 1983). In our setting, the tied transaction is between employment and residence — firms that provide on-site housing can condition continued accommodation on compliance with demands for additional work, giving them leverage that is absent when workers commute from independent housing.

The vulnerability cluster captures firms' beliefs about workers' capacity to resist or exit unfavorable employment conditions. Across all four measures, firms perceive a clear gradient: local workers score highest, on-site migrants score lowest, and off-site migrants fall in between. Specifically, firms believe local workers are more likely to argue if pay is delayed and to complain externally, reflecting stronger bargaining power vis-à-vis employers. Locals are also perceived as having shorter job-finding times — that is, stronger outside options — and greater access to network support in the city. On-site migrants, by contrast, are perceived as least likely to dispute delayed payments or seek external recourse, with weaker outside options and less network support. Off-site migrants occupy an intermediate position as their residence away from the worksite appears to afford them somewhat stronger social ties within the city relative to on-site migrants, which translates into modestly higher scores on network support and willingness to lodge complaints.

Together, these beliefs paint the following picture. Firms view on-site migrants as simultaneously more productive and more controllable, with weaker exit options and less recourse to outside arbitration, all of which increase firms' bargaining position and expand the set of labor inputs they can extract at a given contract price. The belief results thus provide a mechanism-level foundation for the WTP premia documented in Section 5.2.

If these beliefs drive firms' hiring decisions, firms with stronger priors about the migrant advantage should exhibit larger demand gaps. Appendix Figures A-7 and A-8 split firms at the median of composite belief indices for reliability (absence and reneging) and extra hours (willingness to work unpaid overtime and daily hours worked), respectively, and plot hiring probabilities and WTP separately for each group. In both cases, firms with above-median belief gaps display a substantially larger migrant–local demand differential than firms with below-median gaps. The difference-in-differences in WTP between the local and migrant flexible contracts across the two belief groups is 53 INR ($p < 0.001$) for the reliability dimension and 29 INR ($p = 0.018$) for the extra-hours dimension, indicating that the belief patterns documented above translate into measurably larger revealed demand for migrant labor.

5.4 Interpreting the Migrant Premium

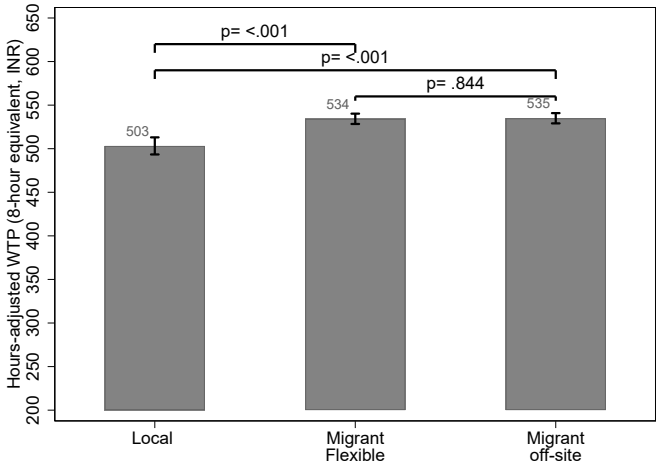
5.4.1 Daily WTP versus Hourly WTP

Given the expectation of higher number of working hours from migrant workers, a natural question is whether the migrant WTP premium documented above simply reflects firms purchasing additional hours at the same per-hour rate. We argue that the daily WTP is the economically relevant measure of the premium. Construction labor in this market is contracted on a daily basis, with both firms and workers negotiating a daily wage for a standard workday of approximately 8 hours. Neither side quotes or bargains over an hourly rate, so the daily wage is the price that governs actual hiring decisions. Moreover, the additional hours that firms expect from migrants are not separately compensated — they arise precisely from the firm's ability to extract unpaid labor beyond the standard workday. Dividing WTP by expected hours would implicitly treat these extracted hours as if they were purchased at a market hourly rate, masking the asymmetry between what firms pay for and what they obtain.

Nonetheless, to address the concern directly, Figure 4 presents hours-adjusted WTP for the three baseline (no-guarantor) contracts. For each firm, we divide its stated WTP by the expected regular hours it reports for the relevant worker type—constructed from the incentivized belief elicitation in Section 5.3—and multiply by 8 to express the result as a standardized 8-hour-day equivalent, keeping units comparable to the main WTP figures. For the migrant flexible contract, the denominator uses on-site migrant hours for firms that report on-site accommodation is available, and off-site migrant hours otherwise, reflecting the option-value structure of the flexible contract. Two patterns emerge. First, after the hours adjustment, a substantial migrant premium persists: firms' 8-hour-equivalent WTP is 503 INR for local workers versus 534 535 INR for migrant contract types ($p < 0.001$ in both cases). The raw migrant–local WTP gap of 60 INR per day (Section 5.2) narrows to 31 INR after standardizing hours, but remains economically meaningful and statistically significant, indicating that differences in regular hours per day cannot by themselves account for the migrant premium. Second, the daily WTP premium for the flexible arrangement over the off-site arrangement—12 INR in the raw comparison—vanishes entirely after the hours adjustment ($p = 0.844$).

Both results should be interpreted with the caveat that dividing by believed regular hours is a crude adjustment. It captures only one margin—hours on a worked day—and does not account for differences in reneging and absenteeism risk (which affect the number of *days* worked), nor for additional margins of on-site availability—such as early morning hours, late evening cleaning, or watchman duties—that may not register in the regular-hours belief. The vanishing flex–off-site gap therefore does not imply that residence operates solely through regular hours, nor does the persistent local–migrant gap cleanly isolate per-hour productivity, since it may still reflect unmeasured hours differences across worker types. The formal decomposition in Section 5.5 separates these channels, isolating an effort component that captures per-hour productivity differences net of working hours differences across worker types.

Figure 4: Hours-adjusted WTP (8-hour-day equivalent)



Notes: The figure shows firms' hours-adjusted willingness-to-pay (WTP) for local workers, migrant workers under a flexible residence arrangement, and migrant workers under an off-site arrangement, all without a guarantor. For each firm, WTP is divided by the firm's belief-based expected regular hours per day for the relevant worker type, then multiplied by 8 to express as a standardized 8-hour-day equivalent. For the migrant flexible contract, the denominator uses on-site migrant hours for firms that report on-site accommodation is available, and off-site migrant hours otherwise. WTP is left-censored at INR 350 for non-hirers. Estimates are from Eq. 5.1 with firm fixed effects. Standard errors are clustered at the firm level. *p*-values are shown for pairwise tests.

5.4.2 On-Site Residence: Amenity or Extraction?

An alternative interpretation of the residence premium is that on-site residence reflects a voluntary exchange rather than labor extraction. Firms provide housing at almost zero marginal cost (about INR 2 per worker-day; Table 1), while workers avoid the rent they would otherwise pay off-site. On this view, the additional hours supplied by on-site workers are simply the implicit price of free accommodation, so the residence premium would not necessarily reflect employer control.

Our evidence is hard to square with that interpretation. Migrant workers in our sample report paying an average of INR 775 per month in rent when working away from home, or about INR 25 per day (Section 6). If on-site residence were mainly a compensating differential for housing, then workers' willingness to accept on-site jobs should be close to this rental saving, perhaps adjusted downward for any disutility from longer hours. Instead, workers' WTA for on-site work is only INR 5 per day lower than their WTA for off-site work (Figure 9). That discount is far smaller than the rent savings. The natural implication is that workers perceive substantial offsetting costs of living on-site. Those costs may include unpaid extra work, poorer living conditions, or diminished autonomy. In other words, workers behave as if on-site residence provides a housing benefit, but one that is almost entirely offset by non-wage costs.

Workers' own reports point in the same direction. Among migrant workers, 63% say they would prefer to live on-site, and the main reasons they cite are savings in rent and commuting costs. Yet only 30% say that on-site accommodation offers better living conditions than renting off-site. This suggests that the appeal of on-site residence is primarily financial rather than amenity-based. Consistent with that interpretation, 55% of workers say that the additional hours associated

with on-site residence arise from employer pressure rather than reciprocity, and 49% believe that firms may deny continued residence to workers who refuse demands for extra work. Taking the union of these responses, 75% report at least one coercive characteristic of on-site residence. These survey measures are not incentivized and should therefore be interpreted cautiously, but they closely match the revealed-preference evidence.

The incidence of the surplus also cuts against a pure exchange interpretation. Firms' WTP premium for on-site residence is INR 12 per day, whereas workers' WTA discount is only INR 5 per day. Thus, firms value on-site residence substantially more than workers do, even though workers receive the direct housing benefit. This gap is difficult to reconcile with a setting in which housing is simply traded for work at arm's-length, competitive terms. It is more consistent with a contract under which on-site residence increases employer leverage and allows firms to extract additional labor at low cost. The worker-side results below reinforce this interpretation by showing that protections against workplace vulnerability alter workers' valuation of on-site relative to off-site jobs.

5.5 Decomposing the Migrant–Local Hiring Gap

The preceding results establish two facts. First, firms are willing to pay a substantial premium for migrant workers relative to locals. Second, firms' beliefs provide a mechanism-level rationale for this premium. Migrants—especially those residing on-site—are perceived as less likely to be absent or renege, more willing to supply unpaid extra hours, more productive per hour of work, and more vulnerable to employer pressure. We now use the cross-cutting experimental variation in residence and guarantee status to decompose the migrant–local hiring gap into its constituent channels. Following the accounting framework developed in Section 4, the overall gap can be written as the sum of three components: the excess-work component (EW_i), which combines the value of residential flexibility net of disruption insurance with the value of migrants' longer expected effective hours under off-site commuting; the disruption-cost wedge (DW_i), which reflects differential absenteeism and reneging risk; and a residual capturing effort and other per-hour productivity differences.

We estimate the decomposition shares (reported in Figure 6) using joint maximum likelihood. For each firm i, the six WTP bids identify the three primitive wedges (EH_i, PR_i, DW_i). We then use firms' beliefs about expected effective hours together with $\widehat{\beta}_H$ to construct the excess-work component EW_i and the effort residual. WTP is left-censored at INR 350 for non-hirers. Standard errors for the decomposition shares are obtained via the delta method applied to the sandwich-robust covariance matrix of the MLE estimator.

Absenteeism and reneging risk. The conceptual framework isolates the disruption-cost wedge as $DW_i \equiv (\omega_{iLG} - \omega_{iL}) - (\omega_{iMFG} - \omega_{iMF})$, the difference-in-differences between the guarantee premium for migrant flexible contracts and the guarantee premium for local contracts. If firms perceive migrants as more reliable than locals—as the belief evidence on absence and reneging

strongly suggests—then the guarantee is more valuable for local workers, since it insures against a larger expected disruption cost. A positive DW_i therefore indicates that part of the baseline migrant premium reflects firms pricing in the lower expected disruption cost that migrants offer relative to locals. Appendix Figure A-10 provides cross-sectional support for this interpretation. Firms that believe migrants are less likely to be absent than locals exhibit a larger disruption-cost wedge DW_i, with an OLS slope of 6.93 INR per additional expected absent day ($SE = 3.51$, $p = 0.049$).

Figure 5c presents the four relevant hiring rates at the market wage. The guarantee raises local hiring from 28.2% to 43.2%, a gain of 15 percentage points ($p < 0.001$), while migrant flexible hiring rises from 50.4% to 59.4%, a gain of 9 percentage points ($p < 0.001$). The difference-in-differences is 6.0 percentage points ($p = 0.038$), indicating that the guarantee significantly compresses the migrant–local gap—consistent with a portion of the baseline gap being attributable to firms' perception that migrants are less likely to be absent or renege. Translating this pattern into WTP units, the MLE-based decomposition in Figure 6 attributes 39.8% of the total migrant–local gap to this disruption-cost channel, making it the single largest component.

Excess-work extraction. The conceptual framework defines the excess-work component as

$$EW_i \equiv \omega_{iMFG} - \omega_{iMOG} + \widehat{\beta}_H\Big(\tilde{h}_{i,MO,1} - \tilde{h}_{i,L,1}\Big).$$

This object has two parts. The first is

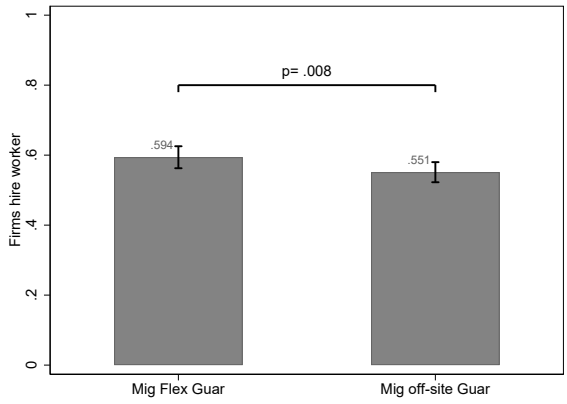
$$EH_i \equiv \omega_{iMFG} - \omega_{iMOG},$$

the difference in WTP between flexible and off-site migrant contracts *within the guarantor arm*. The key identifying assumption is that the guarantee removes disruption-related differences between flexible and off-site contracts. This assumption is supported by the structure of the guarantee, which compensates the firm for *both* late arrival and extended absence or reneging, and additionally promises a replacement worker in the event of job non-completion. Since these are precisely the disruption costs that commuting under off-site residence is most likely to generate, the guarantee plausibly equalises the expected cost of disruption across the flexible and off-site contracts within the guarantor arm. In addition, because the experimental protocol informs firms that workers for flexible and off-site migrant contracts are drawn from the same random pool, the comparison should not be driven by selection across workers.

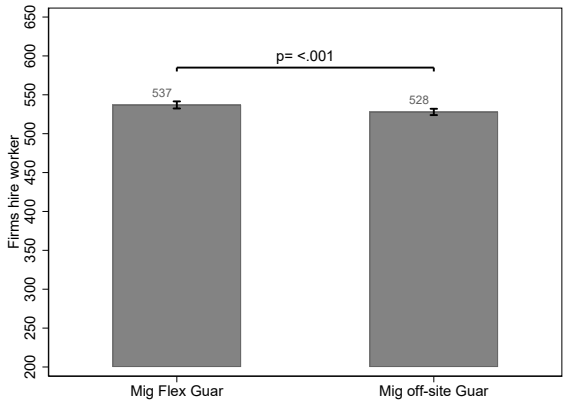
As the belief results indicated, on-site residence could in principle also raise effort through tighter monitoring and control, so we test this directly. Augmenting the $\widehat{\beta}_H$ regression of EH_i on the difference in beliefs about hours of work with differences in beliefs about effort and work-rate between on-site and off-site migrants yields coefficients that are small and statistically indistinguishable from zero ($p = 0.44$ and $p = 0.95$ respectively), while the hours coefficient is essentially unchanged at 9.07 ($p = 0.030$). The guaranteed flexibility wedge is therefore driven by hours,

not effort, validating the interpretation of EH_i as the hours-based residential-flexibility term that enters EW_i.

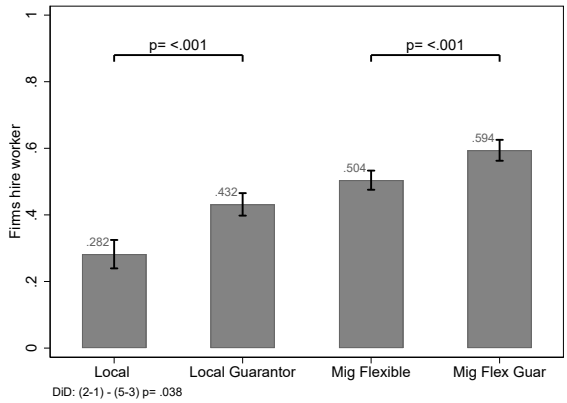
Figure 5: Probability of hiring under guarantee



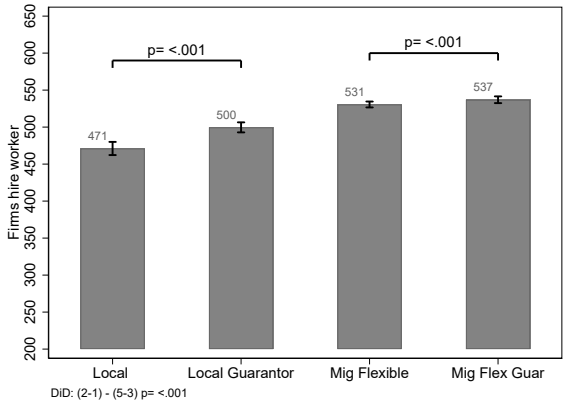
(a) Demand for migrant workers under flexible and off-site



(b) WTP under flexible and off-site



(c) Demand for migrant flexible and local workers with/without guarantee

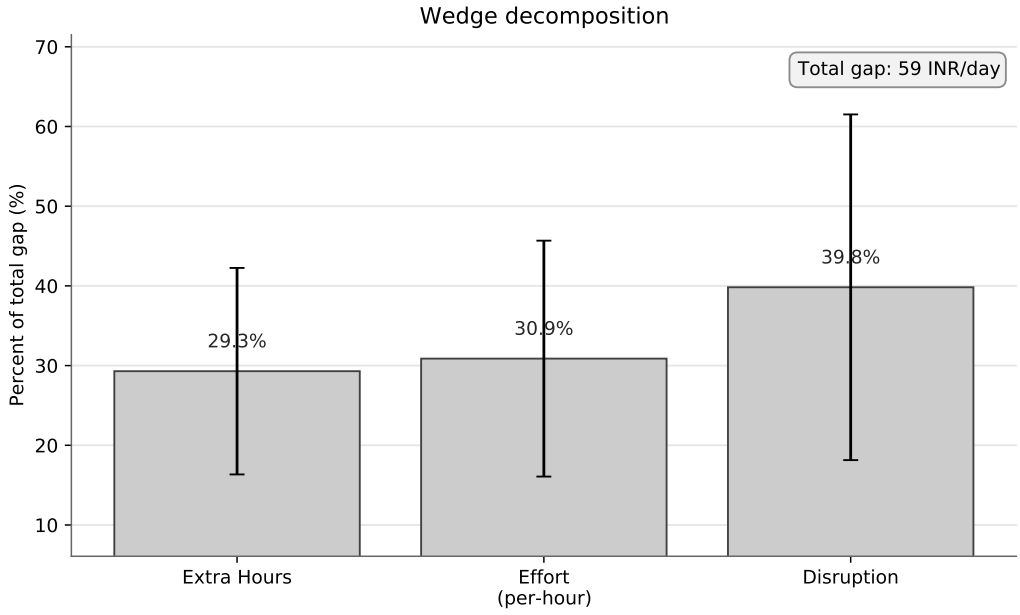


(d) WTP for migrant flexible and local workers with/without guarantee

Notes: The figure presents results used to identify the residential-flexibility and disruption-cost components of the migrant–local hiring gap. Panels (a) and (b) compare guaranteed migrant flexible and guaranteed migrant off-site contracts: Panel (a) shows hiring rates at the market wage of INR 550; Panel (b) shows WTP, left-censored at INR 350 for non-hirers. The difference between these two guaranteed contracts isolates the value of flexible (on-site) residence net of disruption insurance, denoted EH_i in the accounting framework. Panels (c) and (d) show the four contracts used to identify the disruption-cost wedge via a difference-in-differences design: local (no-guarantor), local (guarantor), migrant flexible (no-guarantor), and migrant flexible (guarantor). Panel (c) shows hiring rates at INR 550; Panel (d) shows WTP. All outcomes are estimated from Eq. 5.1 with firm fixed effects. The local (no-guarantor) contract is the omitted baseline. Each bar is the sum of the control mean and the relevant regression coefficient. Standard errors are clustered at the firm level. p-values are shown for different pairs for a two-sided test.

Figure 5a implements the first part of this comparison using the hiring-rate measure at the market wage. Among guaranteed contracts, firms hire migrant workers at a rate of 59.4% under the flexible arrangement and 55.1% under the off-site arrangement, a statistically significant gap of 4.3 percentage points ($p = 0.008$). This comparison identifies EH_i, the value of residential flexibility net of disruption insurance. The full excess-work component EW_i additionally incorporates the

Figure 6: Decomposition of demand for Local and Migrant Workers



Notes: The figure decomposes the total migrant–local WTP gap into three components following the accounting framework in Section 5.5. The total gap is the difference in WTP between the migrant flexible (no-guarantor) and local (no-guarantor) contracts. The excess-work component (EW_i) combines two objects: the WTP difference between the migrant flexible guaranteed and migrant off-site guaranteed contracts, which captures the value of on-site residence net of disruption insurance, and the believed effective-hours advantage of off-site migrants relative to locals, scaled by $\widehat{\beta}_H$. The disruption-cost wedge (DW_i) is the difference-in-differences comparing the guarantee premium for migrant flexible versus local contracts. The effort and per-hour productivity residual is the remaining gap after subtracting the portion of the off-site migrant–local WTP difference attributable to believed effective-hours differences, scaled by $\widehat{\beta}_H$ (the estimated INR value of one additional expected effective hour per day; see Appendix Figure A-9). WTP is left-censored at INR 350 for non-hirers. All components are estimated from Eq. 5.1 with firm fixed effects. Standard errors are clustered at the firm level.

believed effective-hours advantage of off-site migrants relative to locals, scaled by $\widehat{\beta}_H$. Translating both terms into WTP units, the MLE-based decomposition in Figure 6 shows that EW_i accounts for 29.3% of the total migrant–local WTP gap of 59 INR per day.

Effort and per-hour productivity. The conceptual framework defines the migrant–local productivity residual under the off-site guaranteed contracts as $PR_i \equiv \omega_{iMOG} - \omega_{iLG}$. Because both contracts restrict workers to commuting and both include the guarantee, this comparison nets out the value of on-site residence and equalizes disruption insurance across worker types. However, PR_i does not isolate effort alone: it bundles two distinct margins—differences in expected effective hours per day (even under off-site residence, migrants may work longer) and differences in effort intensity and other per-hour productivity. To separate these margins, the framework defines the effort component as

$$Effort_i \equiv PR_i - \widehat{\beta}_H\left(\tilde{h}_{i,MO,1} - \tilde{h}_{i,L,1}\right),$$

where $\tilde{h}_{i,MO,1}$ and $\tilde{h}_{i,L,1}$ are belief-based expected effective hours per day for off-site migrants and locals, and $\widehat{\beta}_H$ is the estimated INR value of one additional expected effective hour per day.

As described in Section 4, $\widehat{\beta}_H$ is obtained by regressing the flexibility wedge under the guarantee (EH_i) on the believed effective-hours gap between on-site and off-site migrants. Appendix Figure A-9 plots this relationship using a binscatter: firms that perceive a larger hours gap between on-site and off-site migrants also exhibit a larger WTP wedge between the corresponding guaranteed contracts, and the OLS slope yields $\widehat{\beta}_H = 10.06$ INR per additional expected effective hour per day. The product $\widehat{\beta}_H(\tilde{h}_{i,MO,1} - \tilde{h}_{i,L,1})$ then captures the portion of PR_i that is mechanically explained by migrants' longer expected hours under off-site commuting; the remainder, $Effort_i$, reflects effort intensity, task completion speed, and other per-hour productivity differences. The belief evidence supports this interpretation: firms rate migrants higher on effort and trust without supervision even under off-site residence. Figure 6 shows that the effort component accounts for 30.9% of the total migrant–local WTP gap of 59 INR per day.

In sum, the decomposition attributes 39.8% of the migrant–local WTP gap to reliability, 29.3% to excess-work component, and 30.9% to effort and per-hour productivity.

6 Experiment with workers

The firm-side results establish that firms prefer migrant workers and are willing to pay a substantial wage premium for them, driven in part by the option to house workers on-site, perceived reliability advantages, and beliefs about greater vulnerability and scope for work exaction. A natural question is whether workers themselves recognize the conditions that make them attractive to employers—and, if so, how much they value contract attributes that reduce their vulnerability. This section presents worker-side evidence on both margins. We first describe the recruitment and characteristics of the worker sample. We then report results from an incentivized belief elicitation that asks workers about working conditions for different worker types. Finally, we present results from a field experiment in which migrant workers are offered real jobs under contracts that vary residence arrangements and protections against vulnerability. By comparing workers' minimum acceptable wages across contract conditions, we estimate the willingness-to-accept (WTA) value of each protection.

6.1 Recruitment of workers

We recruit construction workers from two populations. The first consists of migrant workers surveyed in their home districts outside Patna—these are potential migrants who may take up a job in Patna as part of the experiment. The second consists of local workers currently active in Patna's construction labor market. Local workers are approached at labor stands (informal hiring spots) in Patna. Migrant workers are approached at their residences or at labor stands in their home districts. After providing informed consent, workers complete a survey and then participate in the belief-elicitation exercise and the contract-variation experiment described below. Due to time constraints not every worker completes both the belief exercise and the experiment.

Table 3 summarizes the characteristics of the 398 migrant workers in our experimental sample. The average worker is about 33 years old, has roughly 3 years of formal education, and has been working for approximately 13 years. The sample is drawn largely from Scheduled Castes and Scheduled Tribes (56%) and Other Backward Classes (39%). Migration experience is widespread: 41% of workers have previously worked in another district within Bihar, and 64% have worked in another state. Monthly earnings average around INR 13,753, and average family monthly income is approximately INR 19,429. Asset ownership is limited—only 12% own a bike—and 21% report having taken a loan in the past three months. These characteristics are broadly consistent with a population of low-income, low-education informal workers for whom migration is a common livelihood strategy.

Table 3: Summary stats of workers

	Mean	SD	N
Age of Respondent	33.29	9.94	398
Years of education	3.17	3.60	398
Backward caste	0.39	0.49	398
Scheduled caste/tribe	0.56	0.50	398
Years of work	12.87	8.57	398
Worked in another district of Bihar	0.41	0.49	397
Worked in another state	0.64	0.48	398
Monthly Income (INR)	13,752.73	4,220.82	385
Family Monthly Income (INR)	19,429.61	9,948.14	380
Owns a bike	0.12	0.33	398
Loan in last 3 months	0.21	0.41	385
Expected Monthly rent in Patna (INR)	775.10	416.87	362

Notes: The table reports summary statistics for migrant workers in the experimental sample (both pure control as well as those who were offered jobs), recruited from home districts outside Patna. The unit of observation is the worker. Number of observations may vary across rows due to non-response.

6.2 Worker Beliefs

To assess whether workers anticipate the conditions documented on the firm side, we elicit workers' beliefs about the treatment of different worker types in destination labor markets. Both migrant and local workers are asked to report their expectations about the prevalence of exploitative or adverse working conditions for three categories of workers: (i) local workers, (ii) migrant workers who do not stay at the site (off-site migrants), and (iii) migrant workers who reside on or near the worksite (on-site migrants). Workers are told to hold the type of work and wage constant across categories, so that differences in responses reflect perceived worker-type differences rather than job characteristics.

Rather than asking workers about their own expected experiences, we ask them to estimate the prevalence of each condition among other workers of a given type — that is, we elicit beliefs about population-level outcomes. Responses are incentivized for accuracy. Prior to the main survey, the research team collected responses to the same questions from a reference group of approximately

20 workers drawn from the same population and computed the group average for each outcome. Each respondent is told that their answers will be compared to this reference mean, and that the closer their estimate is to the mean, the higher their probability of earning a bonus of up to INR 100 per question. At the end of the survey, a subset of questions is randomly selected by computer, and the bonus is determined based on accuracy on those questions alone, with total earnings capped at INR 300. This scoring rule rewards truthful reporting, since the payoff-maximizing strategy is to state one's best estimate of the population prevalence.[7]

For each worker category, we elicit beliefs on twelve outcomes organized around four thematic clusters. The *extra work* cluster covers the expected prevalence of unpaid overtime: the number of workers (out of 10) who will be made to work 1–2 extra hours without additional pay within a 7-day period, the number asked to stay late in the evening for cleaning work, and the number asked to come early in the morning for curing. The *wage theft* cluster elicits expectations about wage-related exploitation: the number of workers who will experience at least one delay in wage payment during 7 days of work, the number who will be paid less than the agreed daily wage after completing 7 days, the number from whom some portion of wages will be withheld, and the number whose agreed daily wage will be unilaterally reduced (e.g., from INR 500 to INR 450). The *vulnerability* cluster captures workers' beliefs about response to mistreatment: the number likely to get into an argument or dispute with the employer, the number likely to face pressure or threats, the number likely to lodge an external complaint, and the number who have outside job opportunities. Finally, the *reneging and effort* cluster covers the number of workers expected to quit before completing the job and the number who can be trusted to work without supervision.

Results

Figure 7 plots migrant workers' beliefs for each of the twelve outcomes, expressed as z-scores, separately for local workers, off-site migrants, and on-site migrants.

The pattern across the extra work cluster is striking. Migrant workers believe that on-site migrants are substantially more likely to be made to work unpaid extra hours, to be asked to stay late for cleaning, and to be called in early for curing—compared with both off-site migrants and local workers. This ordering—on-site migrants most exposed, off-site migrants intermediate, locals least exposed—mirrors the gradient in firm beliefs about the scope for extra hours extraction (Section 5.3), suggesting that workers correctly perceive the expanded scope for unpaid overtime that on-site residence affords employers.

In the wage theft cluster, workers expect that migrants—especially those residing on-site—are more likely to experience payment delays, underpayment, and wage withholding. On-site migrants are perceived as the most vulnerable to wage theft, with off-site migrants sitting between the two groups, plausibly reflecting the greater dependence on the employer that on-site residence entails. These beliefs are consistent with a setting in which workers recognize that weaker outside options and closer physical proximity to the employer reduce their bargaining position.

[7] Workers were informed about the reference group and the bonus structure before the elicitation began.

The vulnerability cluster reveals a consistent gradient: workers expect local workers to be most likely to engage in arguments or disputes, lodge external complaints, and have outside opportunities, while on-site migrants are perceived as least likely to exercise these forms of recourse. Off-site migrants occupy an intermediate position. This pattern closely mirrors firms' beliefs about worker vulnerability documented in Section 5.3, indicating that the perception of a vulnerability gradient is shared across both sides of the market.

In the reneging and effort cluster, workers believe that on-site migrants are less likely to quit before job completion and can be trusted more to work without supervision, relative to locals. This pattern is again consistent with the firm-side belief evidence.

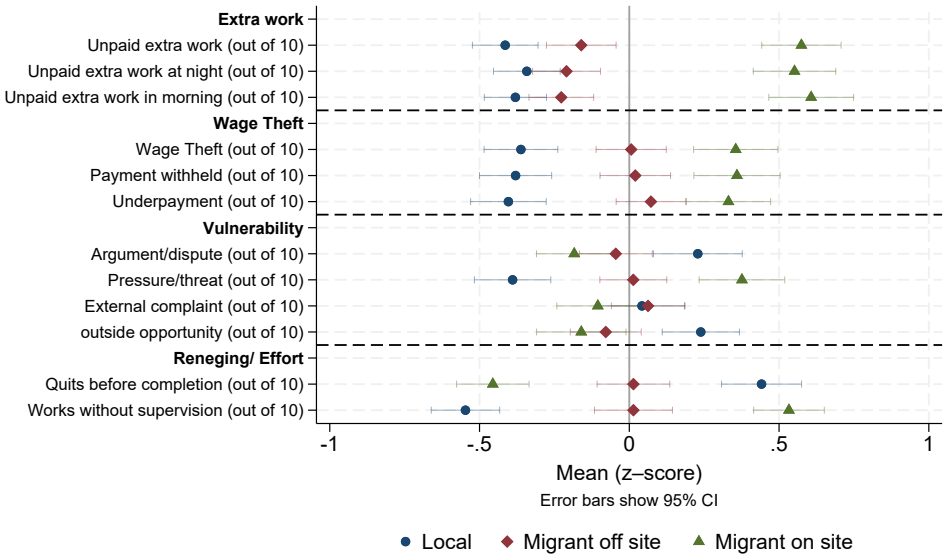
We examine whether the belief gradient varies by caste status by splitting the sample into SC/ST and non-SC/ST workers (who are mostly OBC). Appendix Figure A-18 shows that the ordering of beliefs across worker types—with on-site migrants perceived as most exposed to extra work, wage theft, and vulnerability—is present in both subgroups, though SC/ST workers report somewhat more pronounced beliefs about the vulnerability of on-site migrants, consistent with caste-based social disadvantage amplifying perceived exposure to exploitative conditions.

We also examine whether beliefs vary with prior migration experience by splitting the sample into workers who have previously migrated out of state and those who have not (Appendix Figure A-19). The overall gradient—on-site migrants most exposed, locals least—is present in both groups. Workers with out-of-state experience report somewhat more pronounced beliefs about the exposure of on-site migrants to unpaid extra work and wage theft, consistent with personal experience sharpening perceptions of the conditions most directly tied to employer extraction. Beliefs about vulnerability and reneging, by contrast, are similar across the two groups, suggesting that these dimensions are widely recognized in origin communities even without firsthand exposure.

Figure 8 presents the analogous belief plot for local workers. The patterns are broadly similar to those reported by migrant workers: local workers also perceive on-site migrants as more exposed to unpaid extra work, wage theft, and vulnerability, and as less likely to quit. The convergence in beliefs across the two worker populations reinforces the conclusion that the vulnerability of on-site migrants is a widely recognized aspect of the labor market.

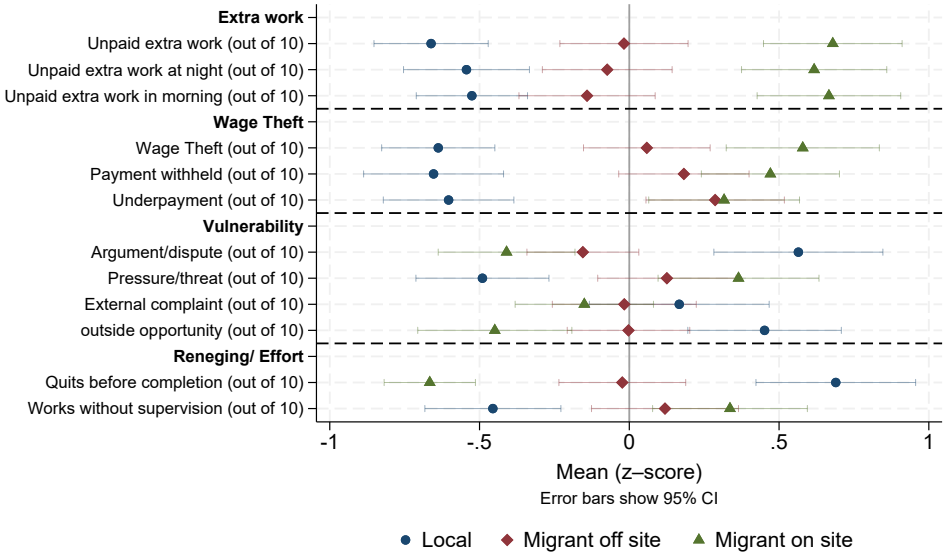
Together, the worker belief results establish that migrants themselves anticipate the adverse conditions that make them attractive to firms. Workers do not appear to hold systematically biased beliefs about the treatment of different worker types; instead, their expectations closely track the patterns revealed by firms' incentivized beliefs. This raises the question of how workers value contract features that reduce vulnerability—a question we address in the experiment below.

Figure 7: Beliefs of Migrant Workers



Notes: The figure plots migrant workers' incentivized beliefs about the prevalence of various working conditions for three worker types: local workers, off-site migrants (commuting from own accommodation), and on-site migrants (residing at or near the worksite). Outcomes are organized into four thematic clusters: extra work (unpaid overtime), wage theft (payment delays and underpayment), vulnerability (recourse and outside options), and reneging and effort. Each outcome is expressed as a z-score, standardized across the full sample of worker-outcome observations. Error bars show 95% confidence intervals based on standard errors of the mean.

Figure 8: Beliefs of Local Workers



Notes: The figure plots local workers' incentivized beliefs about the prevalence of various working conditions for three worker types: local workers, off-site migrants (commuting from own accommodation), and on-site migrants (residing at or near the worksite). Outcomes are organized into four thematic clusters: extra work (unpaid overtime), wage theft (payment delays and underpayment), vulnerability (recourse and outside options), and reneging and effort. Each outcome is expressed as a z-score, standardized across the full sample of worker-outcome observations. Workers are asked to report the expected number of workers out of 10 who would experience each condition, holding the type of work and wage constant across worker types. Error bars show 95% confidence intervals based on standard errors of the mean.

6.3 Worker Experiment Design

The worker experiment is designed to estimate how much migrant workers are willing to forgo in wages in exchange for contracts that reduce vulnerability in destination labor markets. Each worker is offered a real job in Patna lasting at least 15 days. Workers report whether they would accept the job under each of several contract conditions, presented at varying daily wages (INR 500, 525, 550, 575, and 600) in increasing order. One contract and wage combination is randomly selected for implementation, making responses incentive compatible: workers who overstate their willingness risk being placed in a job they would prefer not to take, while those who understate it risk forgoing a desirable opportunity. Because the sample has limited formal schooling (3 years on average), enumerators explained the mechanism using a simplified example, and verified comprehension by asking workers to describe in their own words the consequences of accepting or rejecting an offer that was selected for implementation.

The experiment varies two contract dimensions, yielding the treatment cells shown in Table 4:

1. **Residence.** Workers are offered a job under one of two residence arrangements:
    - **On-site.** The worker is provided accommodation at or near the construction site for the duration of the job. Lodging is arranged by the firm.
    - **Off-site.** The worker is not provided any accommodation at the site and must arrange their own place to stay in the city. The research team assists in finding accommodation, but the worker bears the lodging costs.
2. **Offer Type.** Each worker receives a standard (control) contract and a contract that adds one of three protections against vulnerability:
    - **Control.** A standard job offer in which the research team would introduce the worker to the contractor, after which all matters related to work, payment, and the site are between the worker and the contractor. The research team bears no further responsibility.
    - **Insurance (wage-theft/payment-delay protection).** In addition to the standard job, the research team guarantees full payment for work completed. If the firm fails to pay the agreed wage or pays less than the contracted amount, the organization helps recover the payment. If the firm does not pay, the organization pays the worker the outstanding amount. This guarantee is provided in a written contract bearing the organization's signature and stamp, along with a contact card.
    - **Mediation (dispute resolution).** In addition to the standard job, the research organization provides a dispute mediation service. If the worker encounters a dispute with the firm—over wages, working conditions, or other matters—the organization intervenes to mediate the dispute. This service is documented in a written agreement.
    - **Outside option.** In addition to the standard job, the research organization guarantees that if the worker decides to leave the current firm for any reason, the organization

will place the worker into another job of comparable terms in Patna. This outside-option guarantee ensures that the worker is not locked into the initial employment relationship, effectively reducing the dependence on any single employer.

- **Pure Control**: A small share of workers are in pure control to whom no offers are made. We will compare the independent likelihood of migration of this group to our experimental groups.

Crossing the two residence arrangements with the four offer types yields eight contract conditions. Each worker receives exactly two offers, presented in random order: a control contract and one of the three treatment contracts (insurance, mediation, or outside option). Both offers are made under the same residence arrangement—either on-site or off-site—so that residence is held fixed within worker and the comparison between the treatment and control contracts isolates the value of the protection. Thus there are six types of treatment offers. Each offer is presented at multiple daily wage levels (INR 500, 525, 550, 575, and 600), and the worker reports whether they would accept the job at each wage. By comparing the minimum wage at which a worker accepts the treatment contract versus the control contract, we can estimate the WTA-equivalent value of each protection. The job-offer experiment includes 277 workers, roughly evenly split across the six treatment-by-residence cells. The remaining workers in our sample are part of the pure control group.

Table 4: Worker-side treatment cells

Residence Arrangement	**Offer type**	**Contract attributes**
On-site	Control	Standard job
On-site	Insurance	Standard job + Insurance (wage-theft/payment-delay protection)
On-site	Mediation	Standard job + Mediation (dispute resolution)
On-site	Outside option	Standard job + Outside option (alternative job guarantee)
Off-site	Control	Standard job
Off-site	Insurance	Standard job + Insurance (wage-theft/payment-delay protection)
Off-site	Mediation	Standard job + Mediation (dispute resolution)
Off-site	Outside option	Standard job + Outside option (alternative job guarantee)

Randomization was conducted at the worker level, separately for the treatment type (insurance, mediation, or outside option), and the residence arrangement (on-site or off-site). We verify that randomization produced balanced samples along observable baseline characteristics. Appendix Table B-1 compares worker characteristics across the three treatment types; joint F-tests of equality fail to reject balance on any characteristic. Appendix Table B-2 performs the analogous comparison across the two residence arrangements, and Appendix Table B-3 compares workers who received the control contract first with those who received the treatment contract first. In both cases, baseline characteristics are well balanced across assignment groups, supporting the internal validity of the experimental comparisons that follow.

Empirical Specification We estimate the effect of contracts on workers' willingness to accept (WTA) wages using the following specification:

$$Y_{ij} \;=\; \alpha \;+\; \beta\, \mathit{Treat}_{ij} \;+\; \mu_i \;+\; \varepsilon_{ij}, \tag{6.1}$$

where Y_{ij} is the WTA (minimum daily wage at which the worker accepts the job) for worker i under offer j. $\mathbf{Treat}_{ij}$ is a vector of indicators for the contract type offered to worker i on offer j, with the relevant control contract as the omitted baseline. μ_i absorbs fixed effects for the worker. Standard errors are clustered at the worker level. Each bar in the figures that follow represents the sum of the control mean and the relevant regression coefficient.

6.4 Results

We present the experimental results in two parts. We first compare workers' baseline WTA across the two residence arrangements under the control contract, which establishes the cost–vulnerability trade-off that workers face before any protections are introduced. We then turn to the treatment effects of the three contract protections—insurance, mediation, and outside option—estimated separately by residence arrangement.

WTA: On-Site versus Off-Site Residence

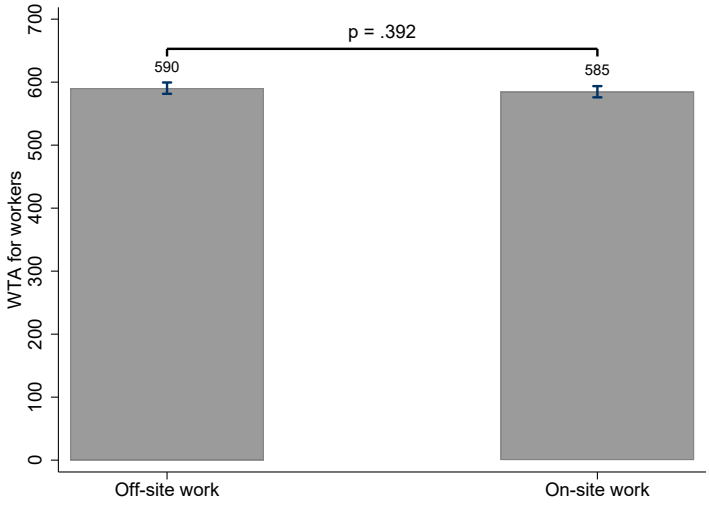
Because residence is assigned between workers rather than within, this comparison cannot exploit worker fixed effects; we instead estimate

$$Y_i \;=\; \alpha \;+\; \beta\, \mathit{OnSite}_i \;+\; \boldsymbol{\gamma}'\mathbf{X}_i \;+\; \phi_v \;+\; \varepsilon_i, \tag{6.2}$$

where Y_i is the WTA of worker i under the control contract, OnSite_i indicates assignment to the on-site residence arrangement, $\mathbf{X}_i$ controls for worker age and education, and ϕ_v denotes village and surveyor fixed effects. Standard errors are clustered at the worker level. The sample is restricted to the responses to control contracts which do not offer protection.

Figure 9 reports the results. Workers' WTA for off-site work is 590 INR per day, while their WTA for on-site work is 585 INR per day—a difference of just 5 INR that is not statistically distinguishable from zero ($p = 0.392$). On-site residence provides accommodation at the worksite at no cost to the worker, eliminating rent and commuting expenses that off-site workers must bear. If workers evaluated the two arrangements on financial grounds alone, one would expect a substantially lower WTA for on-site work, reflecting the savings on accommodation. The near-parity of the two WTA estimates suggests that workers internalize the non-pecuniary costs of on-site residence—costs that the belief results above document in detail. Consistent with this interpretation, 75% of workers in the survey report that on-site residence involves doing more work because firms can pressure workers for extra hours or workers fear being asked to leave if they refuse; and while 65% state a preference for on-site residence on cost grounds, 64% simultaneously acknowl-

Figure 9: WTA for staying at site



Notes: The figure shows migrant workers' minimum willingness-to-accept (WTA) daily wage for on-site work (accommodation provided at the construction site) and off-site work (worker arranges own accommodation), both under the standard control contract with no additional protections. The outcome is estimated from Eq. 6.2, controlling for worker age and education, with village and enumerator fixed effects. Each bar is the sum of the control mean and the relevant regression coefficient. Standard errors are clustered at the worker level. The p-value is shown for a two-sided test.

edge that off-site residence offers better living conditions. Workers thus appear to perceive on-site residence as bundling a financial benefit with a vulnerability cost.

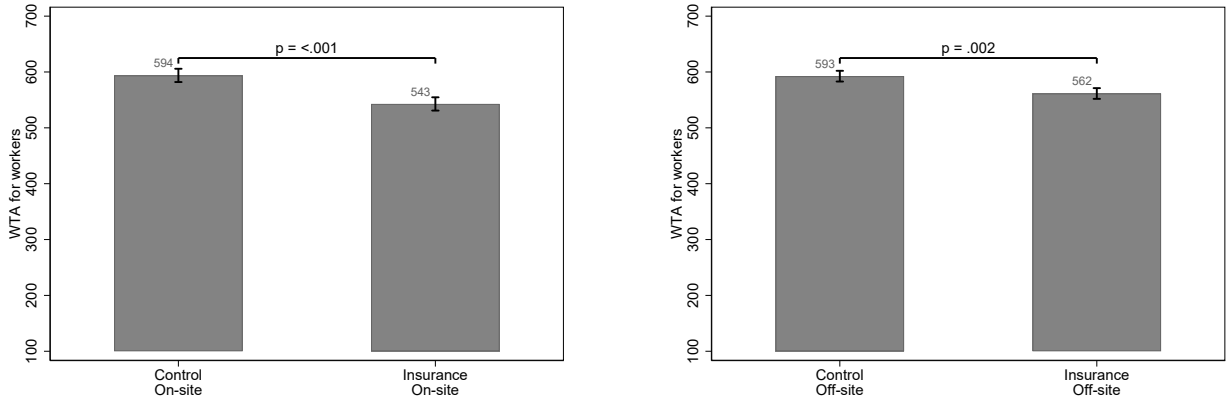
This pattern stands in contrast to the firm side, where employers exhibit a strong revealed preference for on-site arrangements that afford greater scope for extra-hours extraction and reduce absenteeism risk (Section 5). The asymmetry is suggestive: on-site residence generates substantial value for firms through increased control over the labor relationship, while workers—who recognize this control—appear to discount the accommodation benefit enough to leave their reservation wages largely unchanged. If wages in equilibrium do not fully compensate workers for on-site vulnerability, the implication is that the surplus from on-site residence accrues primarily to the firm. Our data cannot directly test this equilibrium condition, but the near-parity of workers' WTA across the two arrangements—combined with the strong firm-side preference for on-site workers—is consistent with this interpretation.

Effect of Wage Insurance on WTA

Figure 10b presents the effect of the wage insurance treatment—which guarantees full payment for work completed and protects against wage theft and payment delays—on workers' WTA. Panel (a) shows results for on-site work: workers' WTA falls from 594 INR under the control contract to 543 INR under the insurance contract, a decline of 51 INR per day (8.8% lower, $p < 0.001$). Panel (b) shows results for off-site work: workers' WTA declines from 593 INR to 562 INR, a reduction of 31 INR per day (5.4% lower, $p = 0.002$).

The insurance treatment produces the largest WTA reduction among the three protections, indicating that wage theft and payment delays are the most salient vulnerability concern for migrant workers. This is consistent with the worker belief results, which show that migrants expect on-site workers to be especially exposed to wage theft and underpayment. The larger effect under on-site residence further reinforces this interpretation: when workers live at the site, their dependence on the employer for both wages and housing makes the risk of non-payment especially costly, and insuring against this risk generates the greatest willingness to accept lower wages.

Figure 10: Effect of Wage Insurance on WTA



(a) WTA for on-site work

(b) WTA for off-site work

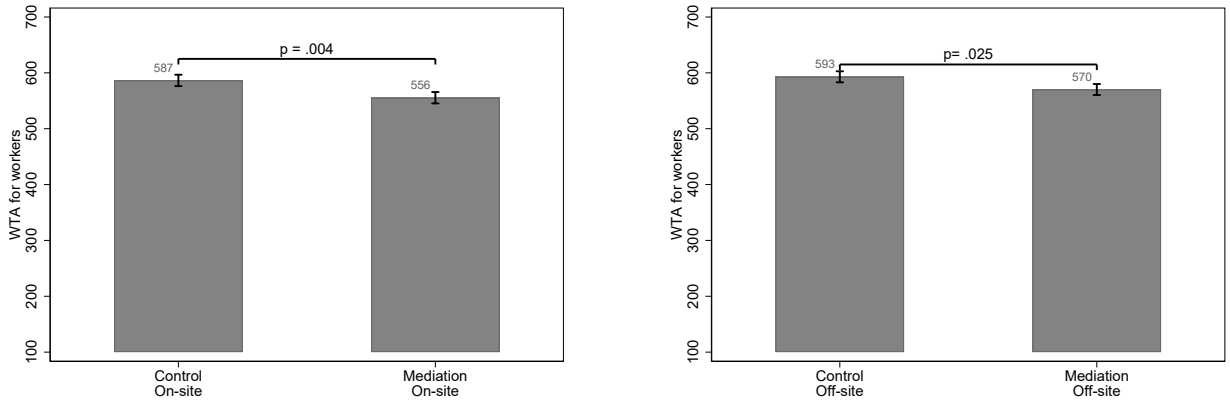
Notes: The figure shows the effect of the wage insurance treatment—which guarantees full payment for work completed and provides recourse against wage theft and payment delays—on migrant workers' minimum WTA daily wage. Panel (a) presents results for on-site work (accommodation provided at the site); Panel (b) presents results for off-site work (worker arranges own accommodation). Each bar is the sum of the control mean and the relevant regression coefficient, estimated from Eq. 6.1. The specification includes worker fixed effects and question-order fixed effects. The baseline in each panel is the WTA under the standard control contract for the same residence arrangement. Standard errors are clustered at the worker level. p-values are shown for each treatment–control pair for a two-sided test.

Effect of Mediation on WTA

Figure 11a presents the effect of the mediation treatment—which provides dispute resolution services—on workers' WTA. Panel (a) shows results for on-site work: workers' WTA falls from 587 INR under the control contract to 556 INR under the mediation contract, a decline of 31 INR per day (4.9% lower, $p = 0.004$). Panel (b) shows results for off-site work: workers' WTA falls from 593 INR to 570 INR, a decline of 23 INR per day (3.9% lower, $p = 0.025$). Workers are willing to accept substantially lower wages when the contract includes dispute mediation, indicating that the risk of unresolved workplace conflicts is a salient concern that reduces the attractiveness of migration-based employment. The larger effect under on-site residence is consistent with workers perceiving disputes as more consequential when they reside at the worksite—where exiting the employment relationship also means losing one's housing. Because treatment type and residence are randomized independently across workers, the control-arm WTA can differ across treatment

subsamples due to sampling variation in small cells. Our within worker analysis ensures that the treatment effect is identified despite these sampling differences.

Figure 11: Effect of Mediation on WTA



(a) WTA for on-site work

(b) WTA for off-site work

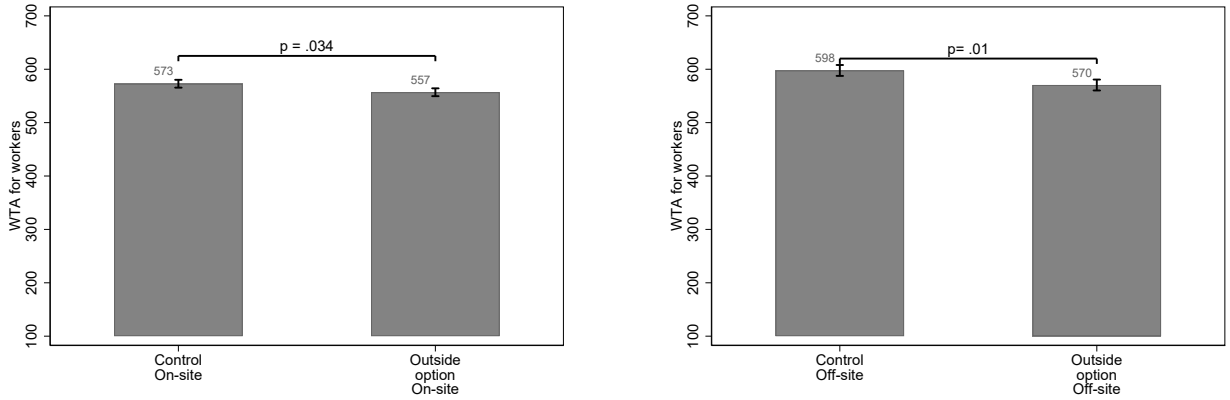
Notes: The figure shows the effect of the mediation treatment—which provides dispute resolution services if the worker encounters a conflict with the contractor—on migrant workers' minimum WTA daily wage. Panel (a) presents results for on-site work (accommodation provided at the site); Panel (b) presents results for off-site work (worker arranges own accommodation). Each bar is the sum of the control mean and the relevant regression coefficient, estimated from Eq. 6.1. The specification includes worker fixed effects and question-order fixed effects. The baseline in each panel is the WTA under the standard control contract for the same residence arrangement. Standard errors are clustered at the worker level. p-values are shown for each treatment–control pair for a two-sided test.

Effect of Outside Option on WTA

Figure 12a presents the effect of the outside-option guarantee—which ensures the worker can be placed into an alternative job if they leave their current contractor—on workers' WTA. Panel (a) shows results for on-site work: workers' WTA declines from 573 INR under the control contract to 557 INR under the outside-option contract, a reduction of 16 INR per day (2.8% lower, $p = 0.034$). Panel (b) shows results for off-site work: workers' WTA falls from 596 INR to 570 INR, a decline of 26 INR per day (4.4% lower, $p = 0.010$). Workers value the outside option, consistent with employer lock-in being a salient concern for migrants. The effect is notably larger for off-site work, where the worker must bear accommodation costs independently and the risk of being stranded without a job in the city is particularly costly.

These estimates are robust to relaxing the top-coding assumption that assigns $w_{\max} + 25$ to workers who reject all offered wages. Appendix Table A-5 reports interval regression estimates that treat the WTA as interval-censored, and the magnitudes are quantitatively similar across all treatment arms and residence arrangements.

Figure 12: Effect of Outside Option on WTA



(a) WTA for on-site work

(b) WTA for off-site work

Notes: The figure shows the effect of the outside-option treatment—which guarantees that the research organization will place the worker into an alternative comparable job in Patna if they leave the current contractor—on migrant workers' minimum WTA daily wage. Panel (a) presents results for on-site work (accommodation provided at the site); Panel (b) presents results for off-site work (worker arranges own accommodation). Each bar is the sum of the control mean and the relevant regression coefficient, estimated from Eq. 6.1. The specification includes worker fixed effects and question-order fixed effects. The baseline in each panel is the WTA under the standard control contract for the same residence arrangement. Standard errors are clustered at the worker level. *p*-values are shown for each treatment–control pair for a two-sided test.

6.5 Response of Local Workers

The migrant-worker results above show that contract protections significantly lower the wages migrants require to accept a job. A natural benchmark is whether local workers—who are not subject to the same residence-based vulnerabilities—also value these protections, and if so, whether their valuations differ from those of migrants. We examine this using the sample of local construction workers in Patna, who were offered contracts varying the outside option and mediation treatments under off-site work only.[8] Summary statistics of these workers is in Appendix Table A-3. A total of 183 workers were made offers and 198 workers were surveyed.

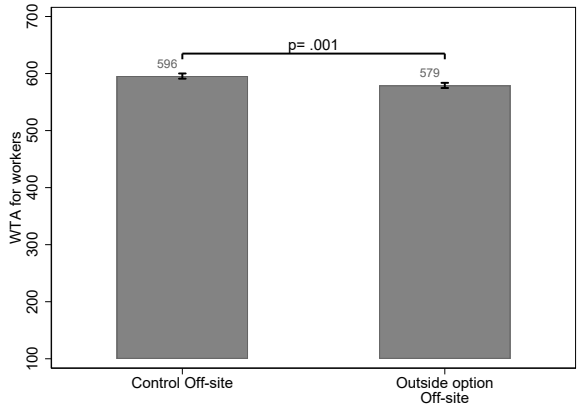
Figure 13 presents the within-worker estimates for local workers. Panel (a) shows that the outside-option guarantee reduces local workers' WTA from 596 INR to 579 INR, a decline of 17 INR per day ($p < 0.001$). Panel (b) shows that the mediation treatment reduces their WTA from 594 INR to 574 INR, a decline of 20 INR per day ($p < 0.001$). Both effects are highly significant, indicating that local workers also place positive value on protections against employer lock-in and unresolved disputes—even though they are not subject to the housing dependence and displacement risks that characterize migrant employment. The outside-option effect for locals (17 INR) is notably smaller than the corresponding off-site estimate for migrant workers (26 INR), consistent with migrants facing a more severe vulnerability environment in which the guarantee of an alternative job is especially valuable. The mediation effect, by contrast, is similar across the two groups (20 INR for locals versus 23 INR for migrants), suggesting that the value of dispute resolution in

[8]Insurance was not administered to local workers. See Varun (2025) for how local workers respond to wage theft concerns.

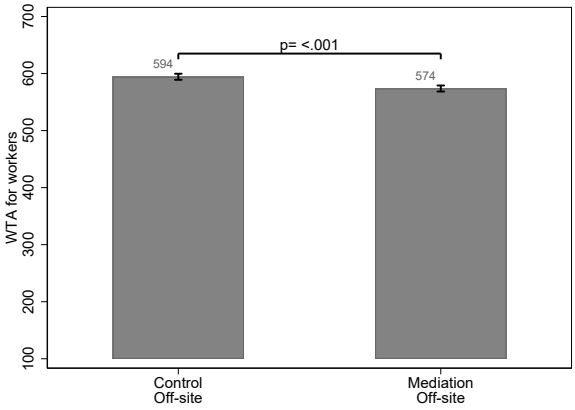
informal construction markets does not depend strongly on migration status.

Figure 13: WTA for Local Workers: Outside Option and Mediation

(a) Outside Option



(b) Mediation



Notes: Each panel plots the mean WTA (willingness to accept) for local workers under the control and treatment arms, estimated from the regression $sw_{ij} = \alpha + \beta\, Treat_{ij} + \mu_i + \varepsilon_{ij}$, where μ_i denotes worker fixed effects. The switching point sw is defined as the lowest wage at which the worker accepts the offer; workers who reject all wages are assigned $w_{\max} + 25$. The sample in each panel is restricted to workers who received both the control arm and the relevant treatment arm. 95% confidence intervals are shown; standard errors are clustered at the worker level. The p-value tests whether the treatment mean differs from the control mean. **Left panel:** treatment arm offers an outside option guarantee (survey firm places the worker in an alternative Patna job at the same wage if the worker quits). **Right panel:** treatment arm offers mediation services (dispute resolution if a conflict arises with the employer). Both treatments are offered for off-site work only. Workers are local construction workers in Patna.

Table 5 formalizes this comparison using a difference-in-differences specification that pools migrant and local workers, restricting migrants to the off-site arm to ensure comparability. The *Migrant* coefficient is close to zero in both columns (0.4 and 0.9 INR), indicating that migrant and local workers have virtually identical baseline WTA under the control contract—any difference in treatment response is therefore not driven by selection on reservation wages. The *Treatment* $\times$ *Migrant* interaction—the DiD estimate—is -10.6 INR for the outside option and -1.6 INR for mediation. Both point estimates are negative, consistent with migrants valuing protections at least as much as locals, but neither is statistically significant at conventional levels. We therefore cannot reject that the two worker types respond similarly to these protections in the off-site setting, though the outside-option interaction is suggestive of a larger migrant response ($p \approx 0.19$).

The local-worker results serve two purposes. First, the pattern of responses across the two treatments is informative about design validity. If the migrant treatment effects were driven entirely by experimenter demand or anchoring in the elicitation procedure, one would expect both treatments to be inflated roughly equally for all workers exposed to the same protocol. Instead, locals respond nearly as strongly as migrants to mediation—consistent with dispute risk being a general characteristic of informal construction labor markets—but substantially less to the outside option, where migration-specific risks like displacement and job-search frictions are most salient.

Table 5: WTA for Contract attributes: Migrants vs Local Workers

	Outside Option	Mediation
Treatment	-17.308***	-21.196***
	(3.409)	(3.995)
Migrant	0.447	0.927
	(8.300)	(9.173)
Treatment × *Migrant (DiD)*	-10.599	-1.630
	(8.045)	(7.994)
Observations	268	276
Control mean (local)	596.70	596.47
Control mean (migrant)	597.67	592.93
Question order FE	✓	✓

Notes: Each column reports estimates from the regression $sw_i = \alpha + \beta_1 \, \textit{Treat}_i + \beta_2 \, \textit{Migrant}_i + \beta_3 \, (\textit{Treat}_i \times \textit{Migrant}_i) + \boldsymbol{\gamma}' \textit{Order}_i + \varepsilon_i$, where sw_i is the worker's switching point (the lowest wage at which the worker accepts the offer). Workers who reject all wages are assigned $w_{\max} + 25$. *Treatment* ($\hat{\beta}_1$) is the WTA effect for local workers. *Migrant* ($\hat{\beta}_2$) is the WTA gap between migrant and local workers in the control group. *Treatment* × *Migrant* ($\hat{\beta}_3$) is the DiD: the difference in the treatment effect between migrant and local workers. Migrant workers are restricted to the off-site arm to ensure comparability with local workers, who are all off-site. The sample in each column is restricted to workers who received both the control arm and the relevant treatment arm. Question order fixed effects control for the order in which the two offers were presented to the worker. Standard errors are clustered at the worker level and reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

This treatment-specific divergence is difficult to reconcile with a uniform demand effect and supports the interpretation that the migrant results reflect genuine vulnerability. Second, the finding that even local workers place significant value on protections underscores that workplace vulnerability is not unique to migrants, but that migration amplifies specific channels.

6.6 Discussion

Taken together, the worker-side results yield three main conclusions. First, workers' beliefs about the treatment of different worker types closely mirror firms' beliefs: both sides of the market perceive on-site migrants as more exposed to unpaid extra work, wage theft, and vulnerability, and as less able to contest mistreatment. This alignment implies that vulnerability is a recognized aspect of the labor market rather than a latent or unobserved characteristic, and that workers are not systematically misinformed about the conditions they face.

Second, workers place substantial value on protections that reduce vulnerability. Across all three treatments—insurance, mediation, and outside option—workers are willing to accept meaningfully lower daily wages when the contract includes a protection, with the wage-equivalent

value ranging from 16 to 51 INR per day depending on the treatment and residence arrangement. These WTA reductions are economically large as the insurance treatment alone represents a wage sacrifice of up to 8.8%, implying that workers perceive the expected cost of wage theft as a substantial fraction of their earnings.

Third, the interaction between protections and residence arrangement is informative about the mechanisms through which vulnerability operates. Insurance has the largest effect under on-site residence (51 INR) compared with off-site (31 INR), where the risk of wage theft is perceived to be highest and the cost of non-payment is amplified by housing dependence. Mediation similarly has a larger effect on-site (31 INR versus 23 INR off-site), consistent with disputes being harder to resolve when the worker lives at the employer's site. The outside option, by contrast, has a larger effect under off-site residence (28 INR versus 16 INR on-site), where the worker must independently finance accommodation and the cost of being stranded without employment is particularly high. Appendix Table A-4 reports formal tests of these interactions using a pooled specification with treatment $\times$ on-site indicators. The insurance interaction is negative and marginally significant (-15.2 INR, $p < 0.10$), providing statistical support for the claim that insurance is more valuable under on-site residence. The mediation and outside-option interactions point in the expected directions, consistent with the magnitude differences in those cells.

7 Conclusion

This paper studies why firms in informal urban labor markets prefer to hire migrant workers over locals and documents the role that worker vulnerability plays in shaping this demand. Using field experiments with construction firms and workers in Patna, India—together with incentivized belief elicitation on both sides of the market—we provide evidence that employer demand for migrants reflects not merely differences in reservation wages but, more fundamentally, differences in the degree of control that firms can exercise over different types of workers.

Our first main finding is that firms exhibit a strong and robust revealed preference for migrant labor. At identical posted wages, firms are nearly twice as likely to hire a migrant worker as a local, and their willingness to pay for a migrant exceeds that for a local by a significant premium. This result directly challenges supply-side explanations of migrant hiring and instead points to demand-side forces rooted in the profitability of the employment relationship itself.

Second, our experimental design allows us to decompose the migrant–local demand gap into three distinct channels: excess work extraction driven primarily by on-site residence (Goodburn and Mishra, 2024); differential absenteeism and reneging risk (Varun, 2025; Goraya et al., 2025); and higher perceived effort and per-hour productivity. Incentivized belief data provide a mechanism-level foundation for each channel: firms perceive migrants as less likely to be absent, more willing to supply overtime without additional compensation, and more productive per hour. Crucially, firms also perceive migrants as less able to contest mistreatment, with weaker outside options and thinner social networks. Vulnerability, in this account, is not merely a byproduct of migration; it

is a determinant of labor demand because it expands the set of labor inputs firms can extract at a given contract price.

Third, workers themselves are well aware of these dynamics. Both migrant and local workers report beliefs that closely track firms' expectations regarding unpaid overtime, wage theft, and employer pressure, with these risks amplified under on-site residence. In the job-offer experiment, migrant workers are willing to forgo up to 51 INR per day (8.8%) for insurance against wage theft and payment delays, up to 31 INR (4.9%) for dispute mediation, and up to 28 INR (4.4%) for an outside-option guarantee, with insurance most valued under on-site residence and the outside option most valued under off-site residence. The alignment of beliefs across both sides of the market confirms that vulnerability is a recognized and welfare-relevant feature of the employment relationship.

Taken together, these results suggest a broader equilibrium interpretation. Internal migration and persistent unemployment among local workers in urban informal markets can coexist when employers actively demand workers whose vulnerability enhances employer control (Breza et al., 2021; Varun, 2025). Firms are not purchasing homogeneous units of labor time but bundles of controllability, outside options, and enforceability that differ systematically across worker types—a perspective grounded in the monopsony literature (Manning, 2003), theoretical models of labor coercion (Acemoglu and Wolitzky, 2011), and Piore (1979)'s characterization of structural demand for vulnerable workers in destination labor markets. This shifts attention from migration as solely a worker-side response to spatial wage gaps (Harris and Todaro, 1970; Bryan et al., 2014; Morten and Oliveira, 2024; Lagakos et al., 2023) toward migration as an outcome shaped by employer incentives to recruit workers over whom they can exercise greater authority.

These results also speak to a broader macroeconomic question. A large literature argues that the reallocation of labor from low-productivity rural sectors to higher-productivity urban sectors is central to economic growth, and that barriers to migration generate costly spatial misallocation (Gollin et al., 2014; Bryan and Morten, 2019; Lagakos et al., 2023). This literature has focused primarily on supply-side frictions. Our findings instead highlight a demand-side mechanism: poor contract enforcement at the destination, which workers perceive and price as a migration cost. To the extent that such conditions deter marginal migrants, weak enforcement in urban informal labor markets may contribute to India's persistently low urbanization rate and to the spatial misallocation that the macro-development literature identifies as detrimental to aggregate productivity.

Although our experiment studies within-state migration, the mechanisms we identify are likely to operate at least as strongly when migration crosses state boundaries. Cross-state migrants lose access to state-specific entitlements, face language barriers, and are more geographically distant from home—all of which deepen vulnerability and strengthen the channels we document (Baseler et al., 2025; Kone et al., 2018). More broadly, the core logic extends to other sectors where migrant labor is prevalent. In India's brick-kiln sector, the advance-and-debt system binds workers to employers in ways that represent an extreme form of the controllability margin firms in our

experiment implicitly price (Breman, 2010). In garment manufacturing, dormitory labor regimes create the same bundling of work and residence that we show increases firms' demand for migrants, while information asymmetries compound vulnerability as new migrants cannot observe non-wage job attributes before accepting employment (Goodburn and Mishra, 2024; Boudreau et al., 2024; Shrestha, 2020).

Our findings carry direct implications for policy. While our setting does not involve forced labor in the legal sense, the mechanisms we document—employer demand for vulnerable workers, the use of on-site housing as a tool of control, and the extraction of unpaid overtime—lie on a continuum with the conditions that facilitate labor coercion more broadly (International Labour Organization and Walk Free, 2022; Boudreau et al., 2024). Three policy directions follow. First, improving the portability of public entitlements across state and district boundaries can reduce the consumption risk that underpins vulnerability (Baseler et al., 2025). Second, regulating on-site residence—through enforceable housing standards, guaranteed freedom to exit the worksite, and monitoring of overtime—can curtail unpaid work extraction (Goodburn and Mishra, 2024). Third, the substantial worker willingness to pay for insurance against wage theft suggests that formal intermediary institutions or publicly backed wage-guarantee schemes could meaningfully improve migrant welfare and help rebalance the bargaining asymmetries that currently characterize informal migrant employment (Fernando et al., 2023).

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Part I

Appendix

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A Additional Results

A.1 Internal Migration

Table A-1: Internal migration in India and Bihar (Census 2011)

	Total (thousands)	Male (thousands)	Female (thousands)
Panel A: India			
All internal migrants	449,917	143,468	306,450
Within-state	395,653	119,598	276,055
Interstate	54,265	23,870	30,395
Work/employment migrants	41,423	35,017	6,406
Within-state	28,275	23,254	5,021
Interstate	12,553	11,258	1,295
Panel B: Bihar (interstate out-migration)			
Interstate out-migrants	7,454	3,852	3,602
Work/employment	2,265	2,117	148
Panel C: Bihar (within-state)			
Within-state migrants	25,728	3,629	22,099
Work/employment	641	488	153
In-migrants from other states	1,112	164	948
Panel D: Top destinations for Bihar migrants			
Jharkhand	1,336	533	803
NCT of Delhi	1,107	663	443
West Bengal	1,104	578	525
Uttar Pradesh	1,073	293	779
Maharashtra	569	389	179

Notes: The table reports internal migration statistics from the Census of India 2011, Migration Tables D-02 and D-03 (Census of India (2011)). A migrant is defined as a person whose place of last residence differs from the place of enumeration. "Within-state" refers to migrants whose last residence was within the same state; "interstate" refers to those whose last residence was in a different state. Work/employment migrants are those who reported work or employment as their primary reason for migration. Panel B reports Bihar residents enumerated in other states (out-migrants). Panel C reports migrants enumerated within Bihar. Panel D reports the five states where the largest number of Bihar out-migrants were enumerated. All counts are in thousands.

A.2 Firm Sampling

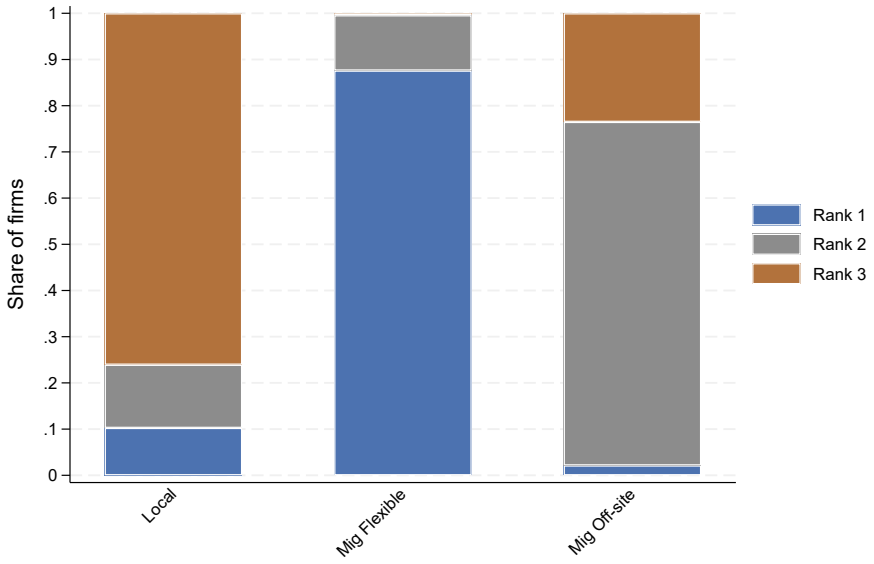
Table A-2: Summary stats of listed firms

	Mean	SD	N
Age of respondent	42.56	10.06	495
Years of education of respondent	7.18	4.36	478
Age of Firm	15.22	9.50	481
Hired worker from another district in the past	0.80	0.40	479
No of operational sites	2.72	1.95	489
No of Permanent Workers	6.69	10.88	469
Daily Wage (Local) (INR)	532.16	65.08	465
Daily Wage (Migrant) (INR)	524.14	76.30	457
Firm is registered	0.15	0.35	479

Notes: The table reports summary statistics for firms reached in the listing survey, conducted prior to the experiment to enumerate the universe of construction firms operating in Patna. The listing survey was administered both by phone and in person and collected basic information on firm characteristics. The experimental sample is drawn from the firms successfully listed here; larger firms are oversampled in the experimental sample. Number of observations may vary across rows due to item non-response.

A.3 Firm Experiment

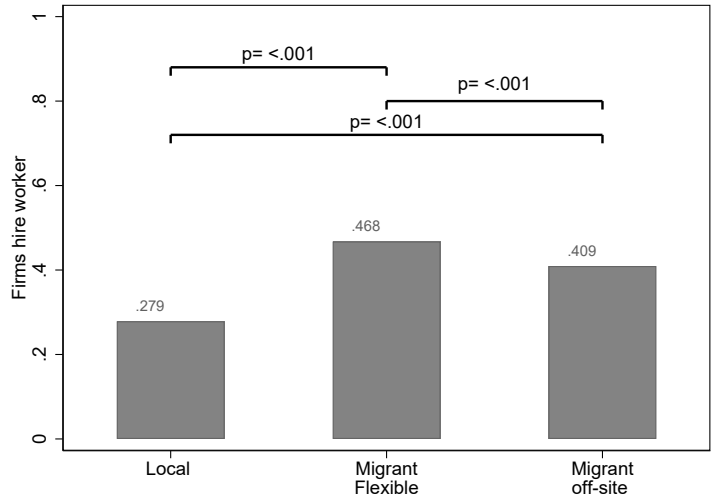
Figure A-1: Preference order for contracts



Notes: The figure shows firms' stated (non-incentivized) preference rankings over the six experimental contracts. For each contract, the bars show the share of firms that ranked it first, second, etc. The six contracts are: Local (no-guarantor), Local (guarantor), Migrant Flexible (no-guarantor), Migrant Flexible (guarantor), Migrant Off-site (no-guarantor), and Migrant Off-site (guarantor). Rankings were elicited after the incentivized WTP and hiring decisions.

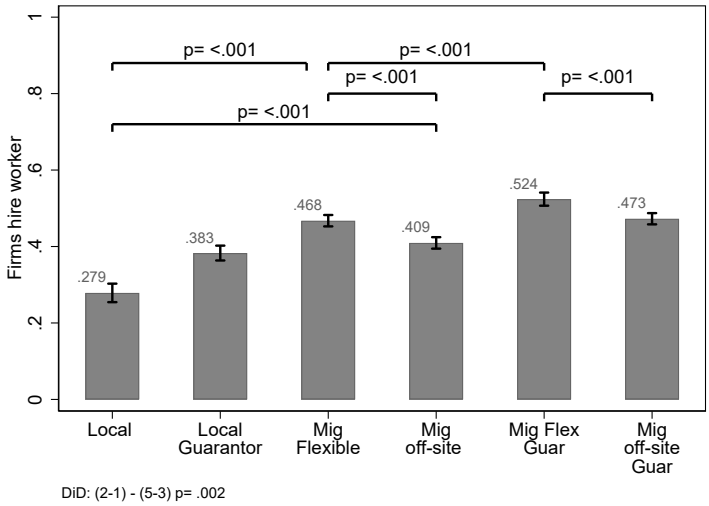
A.3.1 Demand across the wage schedule

Figure A-2: Demand for local versus migrants



Notes: The figure plots firms' demand (probability of hiring) across the wage schedule for three contract types: local (no-guarantor), migrant flexible (no-guarantor), and migrant off-site (no-guarantor). Results are estimated from Eq. 5.1 with firm fixed effects and question-order fixed effects. Each point is the sum of the control mean and the relevant regression coefficient. Standard errors are clustered at the firm level.

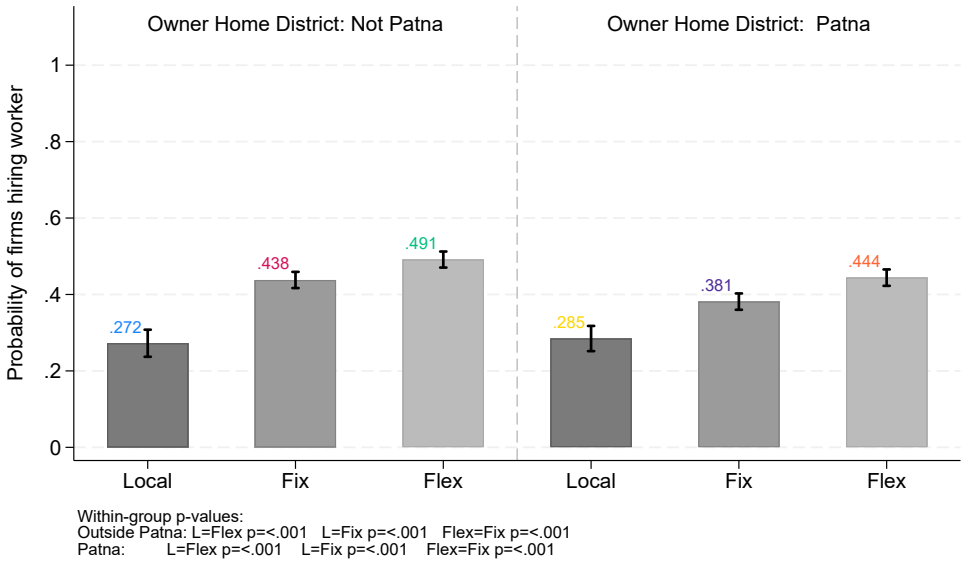
Figure A-3: Demand for all contracts



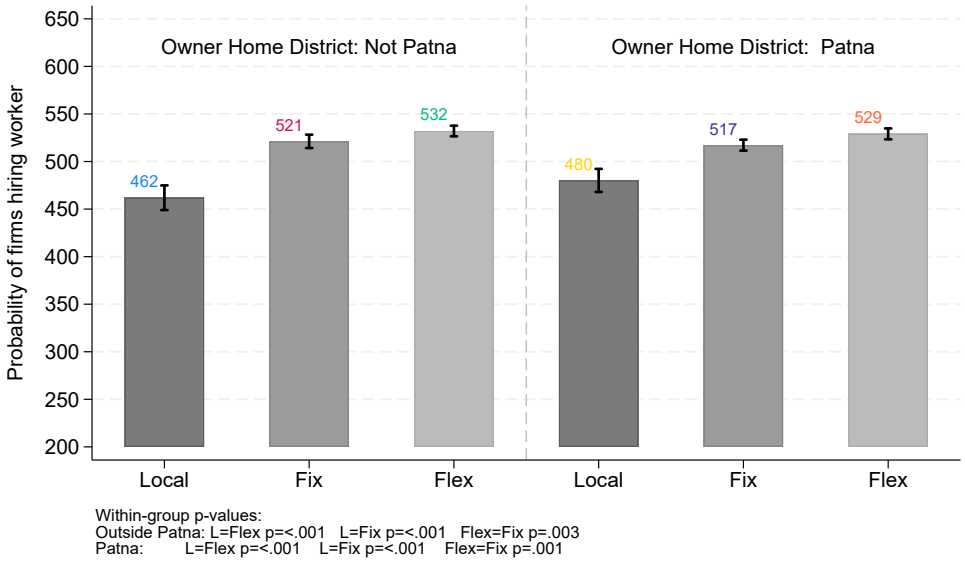
Notes: The figure plots firms' demand (probability of hiring) across the wage schedule for all six experimental contracts: local (no-guarantor), local (guarantor), migrant flexible (no-guarantor), migrant flexible (guarantor), migrant off-site (no-guarantor), and migrant off-site (guarantor). Results are estimated from Eq. 5.1 with firm fixed effects and question-order fixed effects. Each point is the sum of the control mean and the relevant regression coefficient. Standard errors are clustered at the firm level.

A.3.2 Heterogeneity

Figure A-4: Heterogeneity by Firm owner Origin



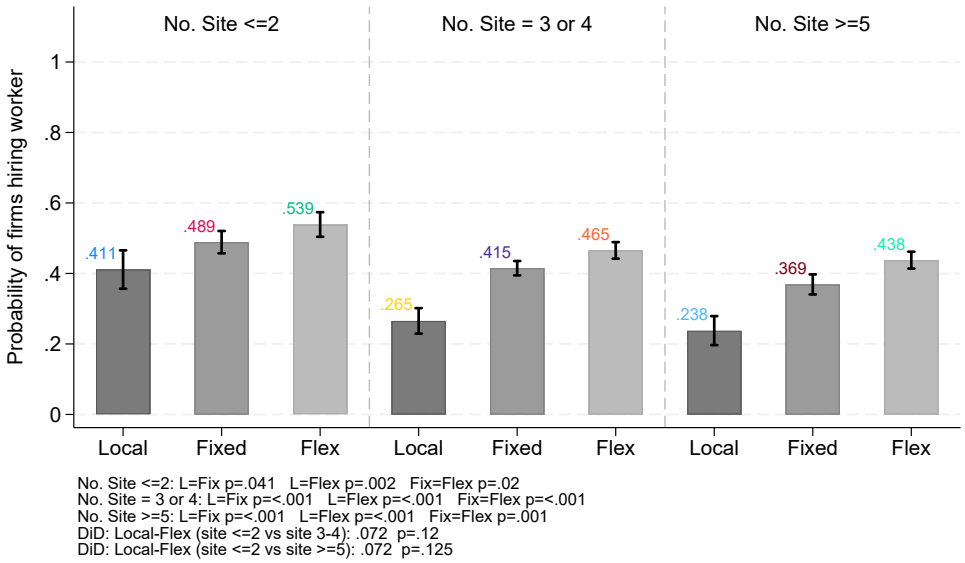
(a) Demand across the wage schedule



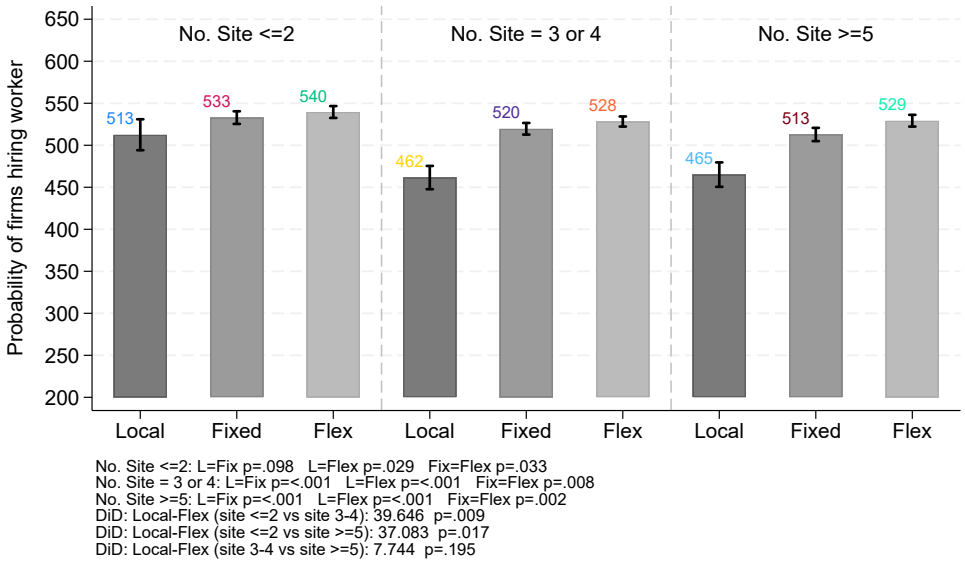
(b) WTP

Notes: The figure shows heterogeneity in firms' demand by whether the firm owner's home district is Patna or outside Patna. Panel (a) plots the probability of hiring at each offered daily wage; Panel (b) plots the firm's WTP (left-censored at INR 350 for non-hirers). Within each group, three contract arms are shown: local (no-guarantor), migrant off-site (no-guarantor), and migrant flexible (no-guarantor). Results are estimated from Eq. 5.1 separately for each subgroup, with firm fixed effects and question-order fixed effects. Each bar is the sum of the control mean and the relevant regression coefficient. Standard errors are clustered at the firm level. Within-group p-values for pairwise comparisons are reported in the figure notes.

Figure A-5: Heterogeneity by Number of Sites



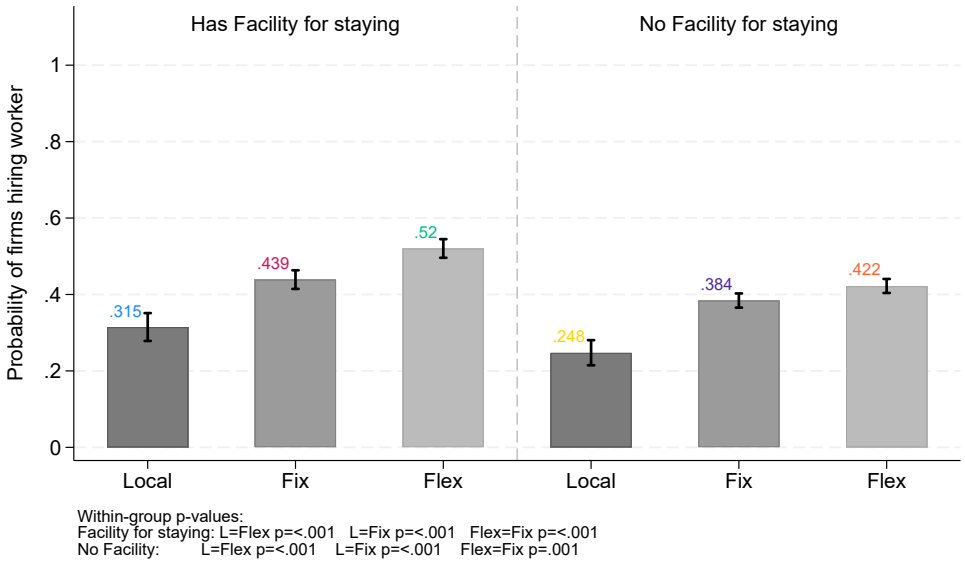
(a) Demand across the wage schedule



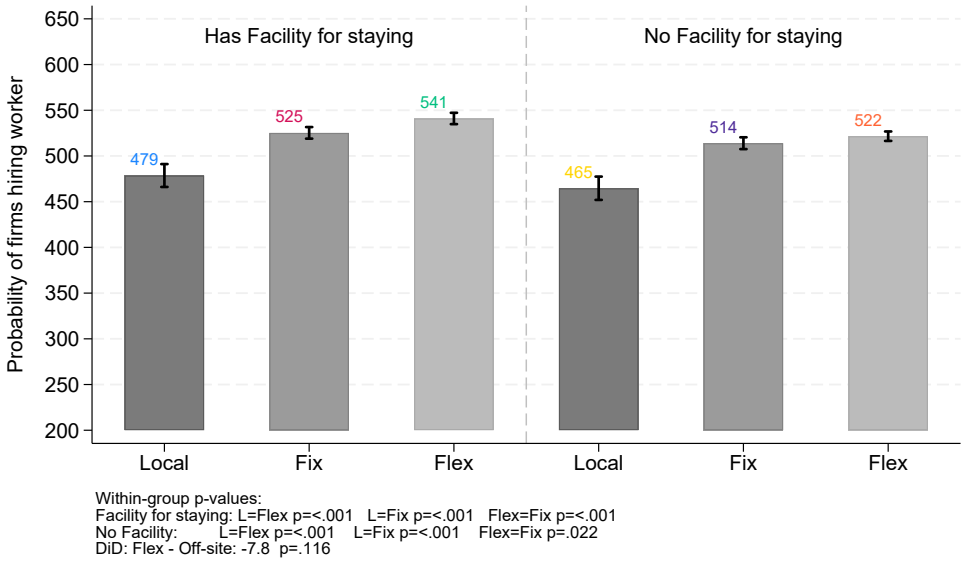
(b) WTP

Notes: The figure shows heterogeneity in firms' demand by the number of active construction sites operated by the firm (site category: 1–2 sites, 3–4 sites, 5 or more sites). Panel (a) plots the probability of hiring across the wage schedule; Panel (b) plots the firm's WTP (left-censored at INR 350 for non-hirers). Within each site-category group, three contract arms are shown: local (no-guarantor), migrant off-site (no-guarantor), and migrant flexible (no-guarantor). Results are estimated from Eq. 5.1 separately for each subgroup, with firm fixed effects and question-order fixed effects. Each bar is the sum of the control mean and the relevant regression coefficient. Standard errors are clustered at the firm level. Within-group p-values for pairwise comparisons and difference-in-differences p-values across site categories are reported in the figure notes.

Figure A-6: Heterogeneity: Firm has facility for residence



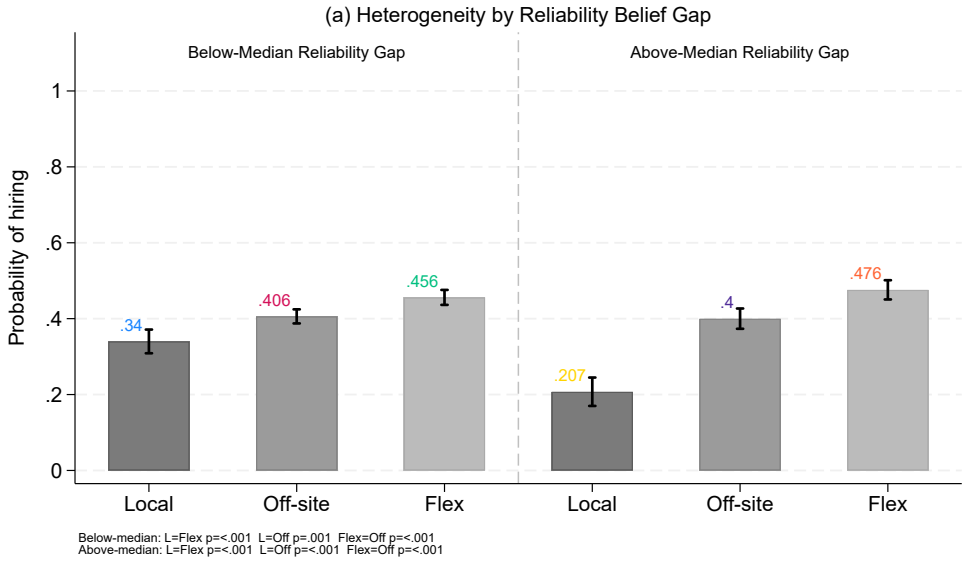
(a) Demand across the wage schedule



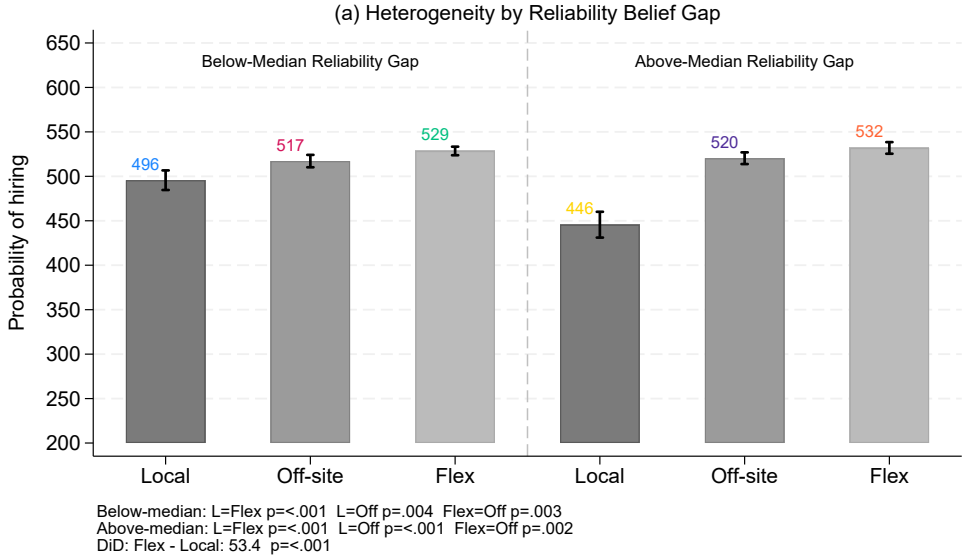
(b) WTP

Notes: The figure shows heterogeneity in firms' demand by whether the firm has a facility to house workers at the construction site. Panel (a) plots the probability of hiring across the wage schedule; Panel (b) plots the firm's WTP (left-censored at INR 350 for non-hirers). Within each group (has facility / no facility), three contract arms are shown: local (no-guarantor), migrant off-site (no-guarantor), and migrant flexible (no-guarantor). Results are estimated from Eq. 5.1 separately for each subgroup, with firm fixed effects and question-order fixed effects. Each bar is the sum of the control mean and the relevant regression coefficient. Standard errors are clustered at the firm level. Within-group p-values for pairwise comparisons are reported in the figure notes.

Figure A-7: Heterogeneity in beliefs about reliability



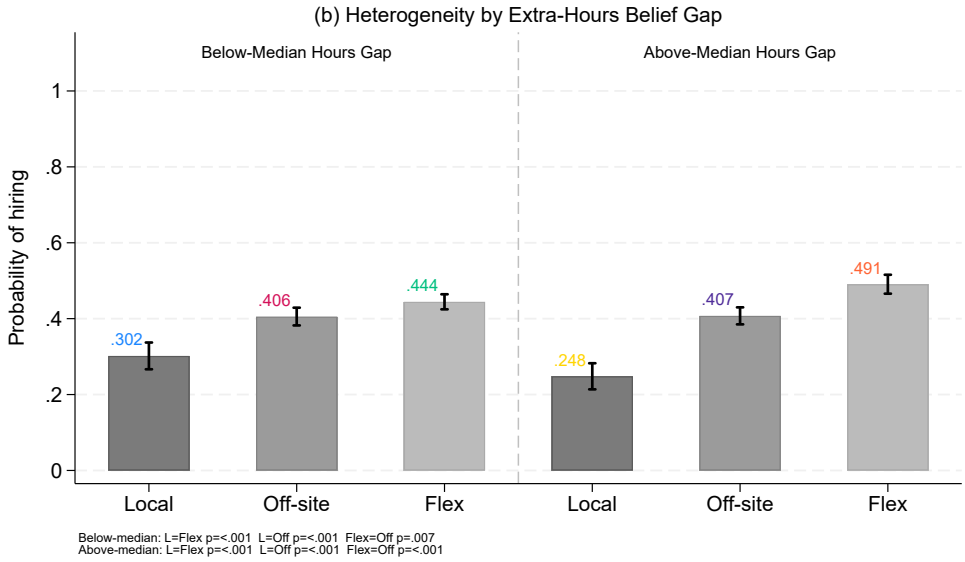
(a) Demand across the wage schedule



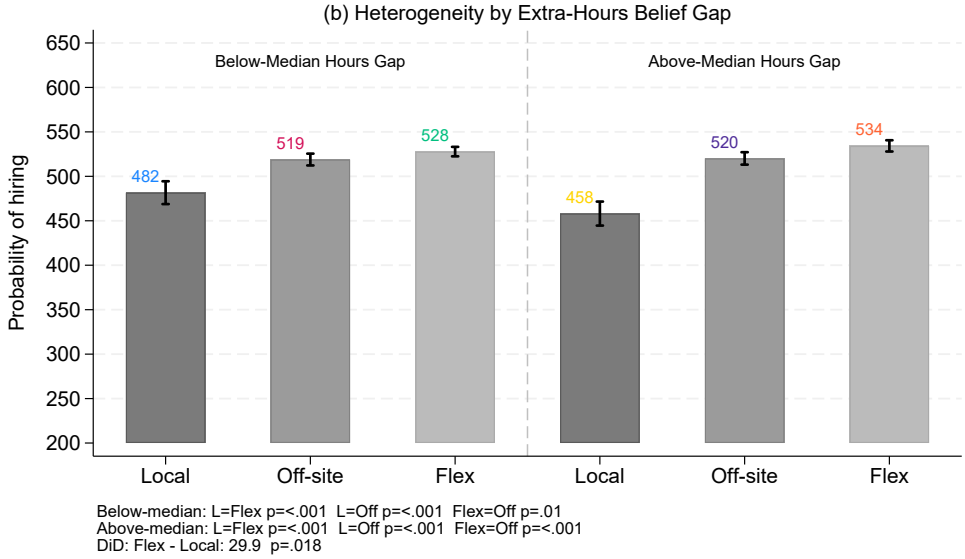
(b) WTP

Notes: The figure shows heterogeneity in firms' demand by the intensity of their beliefs about the reliability advantage of migrant workers over locals. The reliability belief gap is a composite z-score averaging the believed gap in absence days and the believed gap in reneging (number leaving before job completion) between on-site migrants and local workers. Firms are split at the median of this composite. Panel (a) plots the probability of hiring across the wage schedule; Panel (b) plots the firm's WTP (left-censored at INR 350 for non-hirers). Within each group (below-median / above-median reliability gap), three contract arms are shown: local (no-guarantor), migrant off-site (no-guarantor), and migrant flexible (no-guarantor). Results are estimated from Eq. 5.1 separately for each subgroup, with firm fixed effects and question-order fixed effects. Each bar is the sum of the control mean and the relevant regression coefficient. Standard errors are clustered at the firm level. Within-group p-values for pairwise comparisons are reported in the figure notes.

Figure A-8: Heterogeneity in beliefs about extra hours



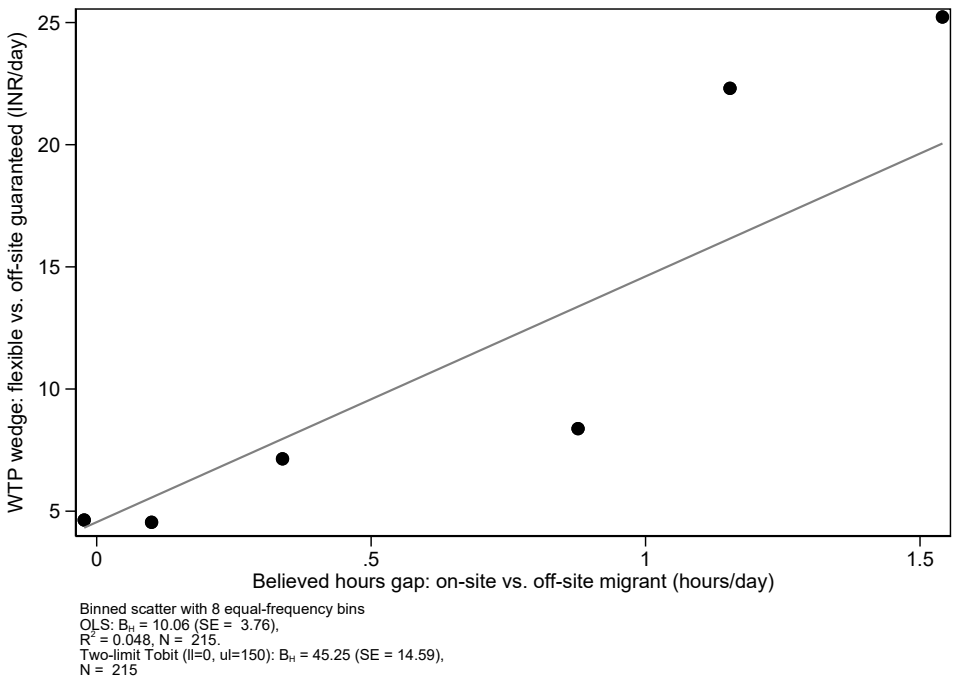
(a) Demand across the wage schedule



(b) WTP

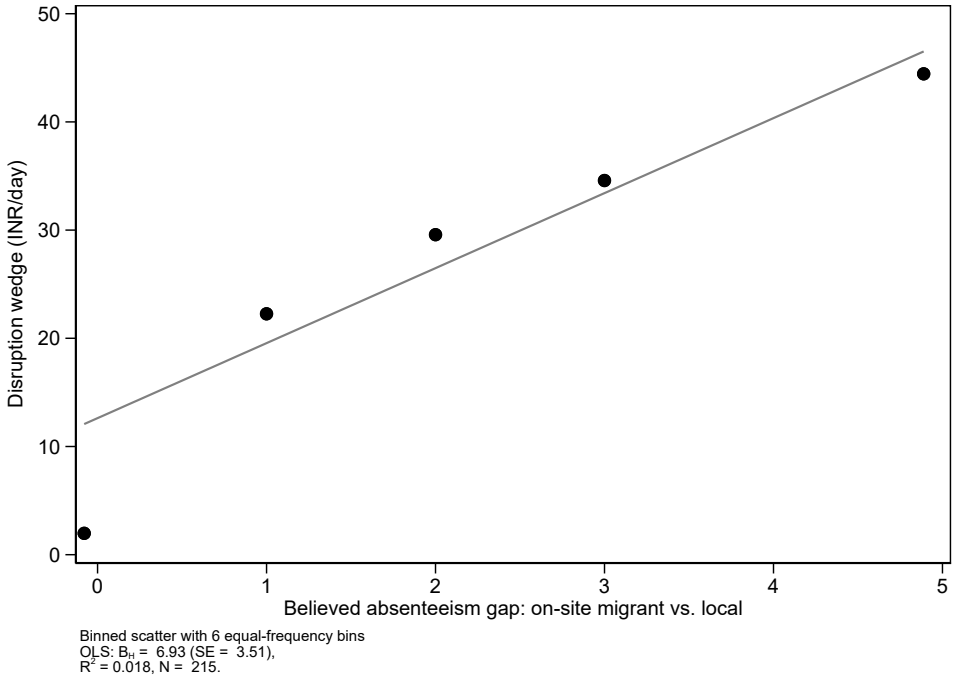
Notes: The figure shows heterogeneity in firms' demand by the intensity of their beliefs about the extra-hours advantage of migrant workers over locals. The extra-hours belief gap is a composite z-score averaging the believed gap in willingness to work an unpaid extra hour and the believed gap in daily hours worked between on-site migrants and local workers. Firms are split at the median of this composite. Panel (a) plots the probability of hiring across the wage schedule; Panel (b) plots the firm's WTP (left-censored at INR 350 for non-hirers). Within each group (below-median / above-median extra-hours gap), three contract arms are shown: local (no-guarantor), migrant off-site (no-guarantor), and migrant flexible (no-guarantor). Results are estimated from Eq. 5.1 separately for each subgroup, with firm fixed effects and question-order fixed effects. Each bar is the sum of the control mean and the relevant regression coefficient. Standard errors are clustered at the firm level. Within-group p-values for pairwise comparisons are reported in the figure notes.

Figure A-9: Estimating the INR Value of One Additional Expected Hour



Notes: The figure plots the relationship between the believed hours gap and the WTP wedge used to estimate $\widehat{\beta}_H$. The x-axis measures the firm's believed difference in effective hours per day between on-site and off-site migrant workers. The y-axis measures the firm's WTP wedge between the flexible guaranteed and off-site guaranteed contracts ($EH_i \equiv \omega_{iMFG} - \omega_{iMOG}$), which isolates the value of on-site residence net of disruption insurance. Each point represents the mean of an equal-frequency bin (6 bins). The slope, $\widehat{\beta}_H$, is the estimated INR value of one additional expected effective hour per day. Standard errors are robust.

Figure A-10: Relationship between Disruption wedge and beliefs about absenteeism



Notes: The figure plots the relationship between the believed absenteeism gap and the disruption-cost wedge DW_i. The x-axis measures the firm's believed difference in absent days (out of 7) between local and migrant on-site workers, with positive values indicating that the firm expects locals to be absent more often. The y-axis measures the firm's disruption-cost wedge $DW_i \equiv (\omega_{iLG} - \omega_{iL}) - (\omega_{iMFG} - \omega_{iMF})$, which captures the extent to which the guarantee compresses the migrant–local hiring gap. A positive DW_i indicates that the guarantee is more valuable for local than for migrant workers, consistent with firms perceiving migrants as more reliable. Each point represents the mean of an equal-frequency bin (6 bins); the regression line is estimated by OLS on the underlying data with robust standard errors.

A.3.3 Sampling-weight-corrected estimates

Our experimental sample oversamples larger firms (measured by number of active construction sites) relative to the listing frame in order to ensure adequate statistical power for heterogeneity analysis by firm size. The main-text estimates report unweighted results, in which each firm receives equal weight regardless of its representation in the population. Without correction, the unweighted estimates recover the average treatment effect for the experimental sample, but not necessarily for the population of Patna construction firms. This subsection re-estimates the main demand specifications using inverse-probability weights that adjust for the non-representative sampling.

Weight construction. Let $s \in \{1, 2, 3\}$ index firm-size strata defined by the number of active sites: small (1–2 sites), medium (3–4 sites), and large (5 or more sites). From the listing survey, we compute the population share of firms in each stratum, $\pi_s^{\text{list}} = N_s^{\text{list}}/N^{\text{list}}$. From the experimental sample, we compute the corresponding sample share, $\pi_s^{\text{exp}} = N_s^{\text{exp}}/N^{\text{exp}}$. Each firm i in stratum s receives weight

$$w_i \;=\; \frac{\pi_s^{\text{list}}}{\pi_s^{\text{exp}}},$$

and we estimate the main specifications using these probability weights with standard errors clustered at the firm level.

Identification assumptions. Let $S_i = 1$ denote that firm i is selected into the experimental sample, and let T_i index the (within-firm) treatment assignment. The weighted estimates recover the population average treatment effect under three conditions:

1. *Internal validity.* Treatment assignment is independent of potential outcomes within the experimental sample:

   $$\big(Y_i(1),\, Y_i(0)\big) \;\perp\; T_i \;\mid\; S_i = 1.$$

   This holds by design, since all six contracts are presented to every firm and the order of presentation is randomized.

2. *Conditional ignorability of sample selection.* Within each site-count stratum, firms in the experimental sample have the same average treatment effect as firms in the population:

   $$\big(Y_i(1) - Y_i(0)\big) \;\perp\; S_i \;\mid\; \text{site_bin}_i.$$

   This is the key assumption. It requires that, conditional on the number of active sites, selection into the experiment—through non-contact, refusal, or other attrition from the listing frame—is unrelated to the firm's preference gap between migrant and local workers.

3. *Overlap.* Every population stratum is represented in the experimental sample:

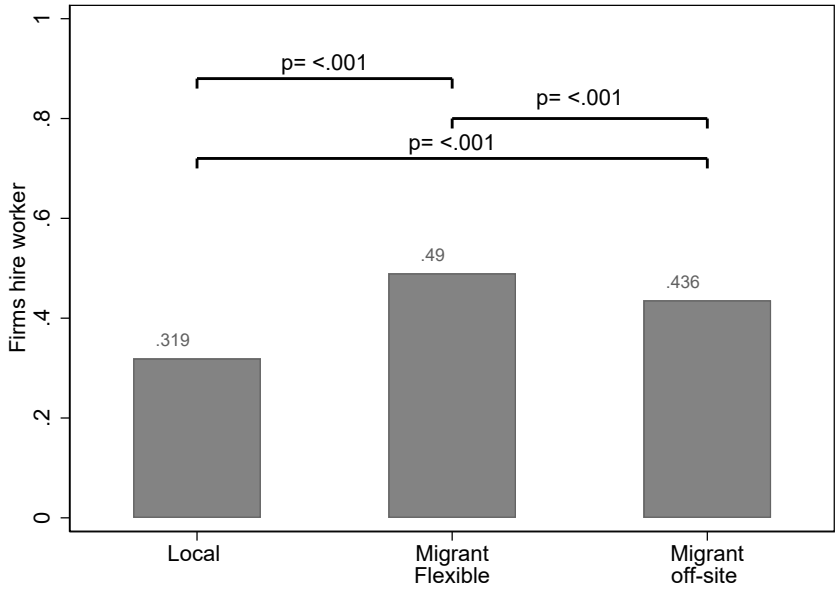
$$0 \;<\; \mathrm{P}(S_i = 1 \mid \text{site_bin}_i)$$

for every stratum s. This holds in our data, as all three size bins contain firms in both the listing and the experimental sample.

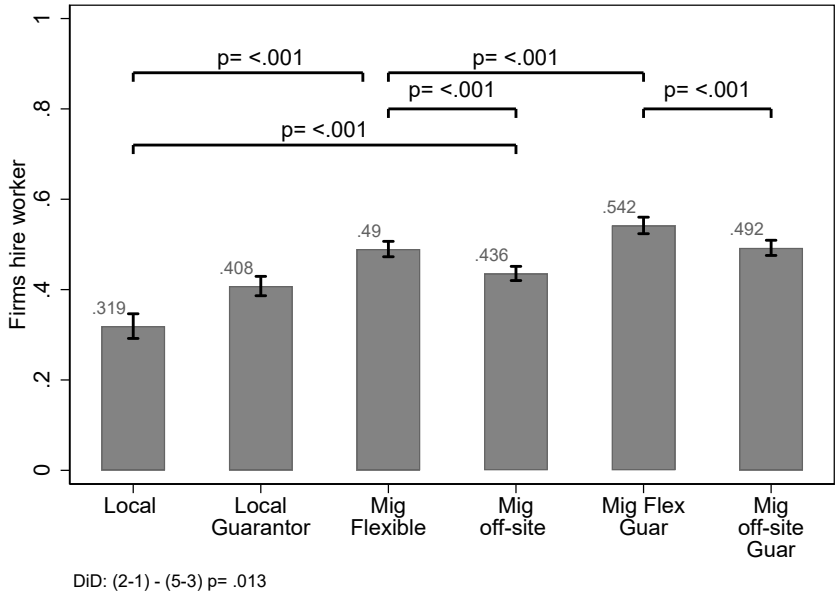
When these conditions hold, the weighted estimator recovers the population ATE for Patna construction firms. However, if firms differ in treatment effects for reasons other than the number of sites—and those reasons also affect selection into the experiment—then the weights do not fully correct for selection and the resulting estimates approximate but do not exactly equal the population ATE.

Results. Figures A-11 and A-12 present the reweighted results. Because the effects documented in the main text are driven disproportionately by larger firms, which are oversampled, the population-weighted point estimates are somewhat attenuated relative to the unweighted estimates. The qualitative patterns, however, are unchanged: firms exhibit a clear preference for migrant workers over locals, and imposing off-site residence reduces firms' willingness to hire migrants.

Figure A-11: Demand across the wage schedule (sampling-weight-corrected)



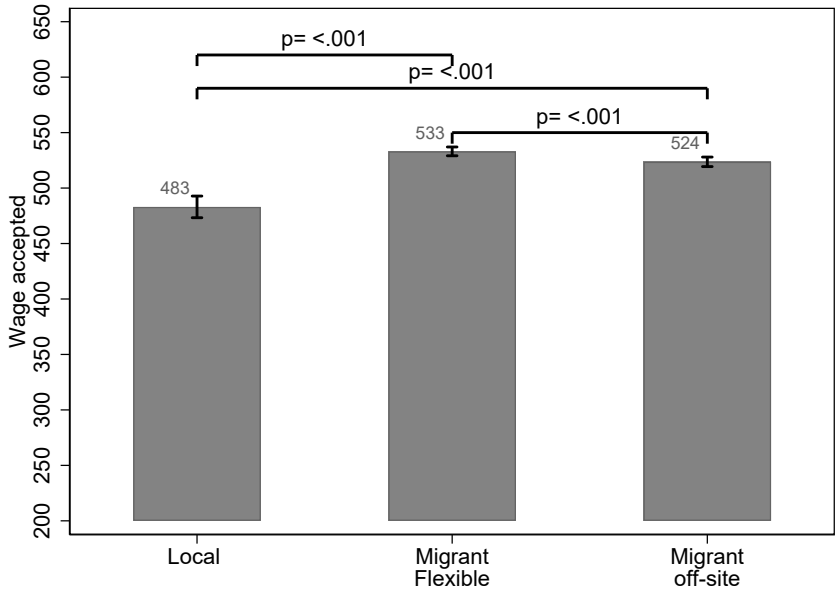
(a) Local vs. Migrant Flexible vs. Migrant Off-site



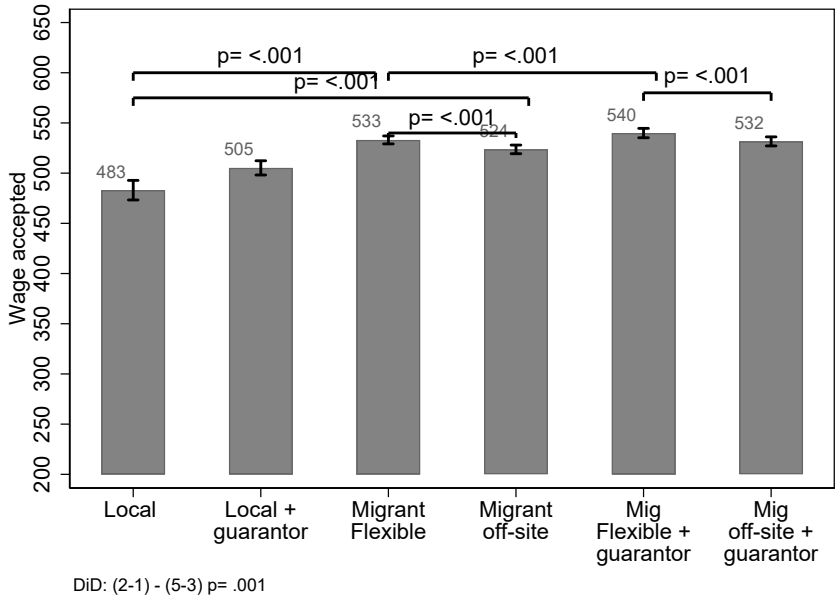
(b) All contracts

Notes: The figure replicates the main demand results using inverse-probability sampling weights that adjust for the oversampling of larger firms in the experimental sample. Weights are constructed as the ratio of each firm-size stratum's share in the listing survey to its share in the experimental sample, where strata are defined by the number of active construction sites (1–2, 3–4, 5+). Panel (a) shows the three main contracts (local, migrant flexible, migrant off-site); Panel (b) includes all six contracts. Bars show predicted hiring probabilities from a linear probability model of acceptance on treatment indicators with firm and wage fixed effects, estimated with probability weights and standard errors clustered at the firm level. Brackets report p-values from pairwise Wald tests of equality across treatment arms.

Figure A-12: WTP for different contracts (sampling-weight-corrected)



(a) Local vs. Migrant Flexible vs. Migrant Off-site



(b) All contracts

Notes: The figure replicates the main WTP results using inverse-probability sampling weights. The outcome is the maximum daily wage (INR) the firm reports for each contract. Panel (a) shows the three main contracts; Panel (b) includes all six. Estimated with firm fixed effects, probability weights, and standard errors clustered at the firm level. See notes to Figure A-11 for details on weight construction.

A.3.4 Employment-weighted estimates: aggregate market demand

The sampling-weight-corrected estimates in Section A.3.3 recover the average treatment effect across firms in the Patna population, weighting each firm equally. However, firms differ substantially in scale: the average firm in our sample employs roughly 10 permanent workers, but the standard deviation is 14, implying a highly skewed size distribution. When the question of interest is about the composition of *aggregate market demand*—for instance, what share of total hiring in Patna is affected by the migrant preference—the relevant estimand weights each firm not equally but in proportion to the number of job slots it fills. A large firm's contract preferences shape more workers' employment outcomes than those of a small firm.

Estimand. Let a index the treatment arm (contract type), Y_{ia} denote firm i's demand outcome for arm a (e.g., an indicator for hiring at a given wage, or the maximum wage offered), m_i denote a pre-treatment measure of firm i's employment scale (number of permanent workers), and w_i denote the inverse-probability sampling weight from Section A.3.3. The employment-weighted estimand is

$$\mathbb{E}_W[Y_{ia}] \;=\; \frac{\sum_i W_i\, Y_{ia}}{\sum_i W_i}, \qquad W_i \;=\; w_i \times m_i.$$

This object can be interpreted as the expected demand for contract type a associated with a randomly drawn *job slot* in the Patna market, rather than a randomly drawn *firm*. The composite weight W_i serves two purposes simultaneously: w_i corrects for the oversampling of larger firms relative to the population, and m_i re-weights firms in proportion to their economic footprint, so that the resulting estimate reflects aggregate labor demand.

Identification assumptions. The employment-weighted estimand requires the same three conditions stated in Section A.3.3—internal validity of treatment assignment, conditional ignorability of sample selection given site-count strata, and overlap—plus one additional assumption:

4. *Homogeneity of per-slot preferences.* Each firm's experimentally elicited preference for contract type a (measured for one standardized 15-day hire) is representative of its preference at each of its m_i hiring slots:

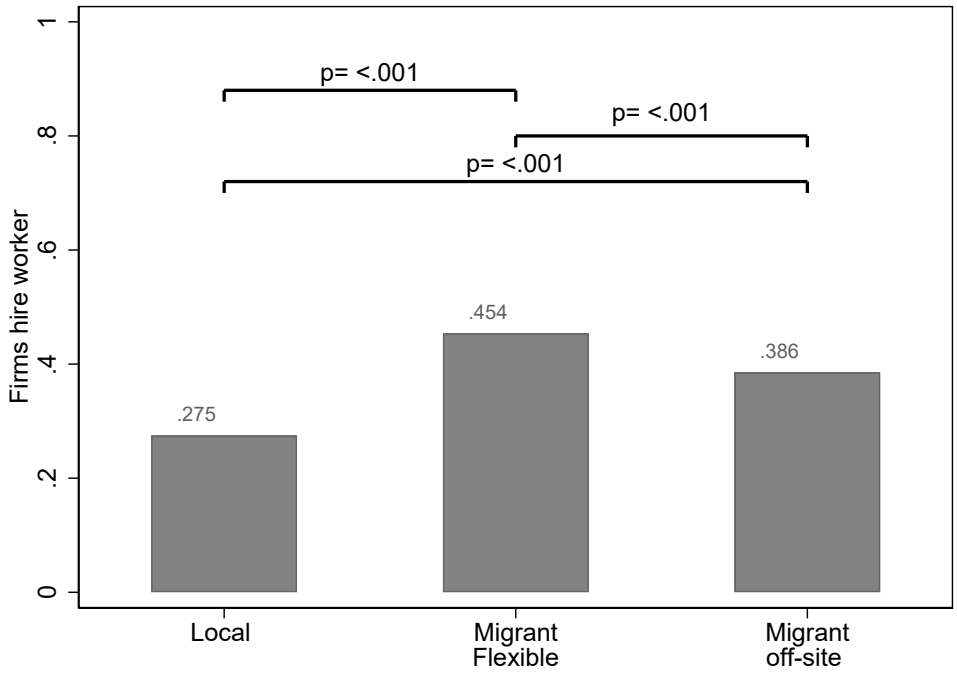
   $$Y_{ia} \;=\; Y_{ia}^{(k)} \quad \text{for all } k = 1, \ldots, m_i,$$

   where $Y_{ia}^{(k)}$ denotes the firm's demand for contract a at its k-th slot. In other words, the treatment effect is constant across a firm's hiring positions. This assumption is plausible in our setting, where the experimental job is a standardized daily-wage task and all slots within a firm require essentially the same skills. It would be violated if firms have decreasing marginal demand for the migrant premium—for example, if they prefer migrants for a core set of positions but are indifferent at the margin for additional hires.

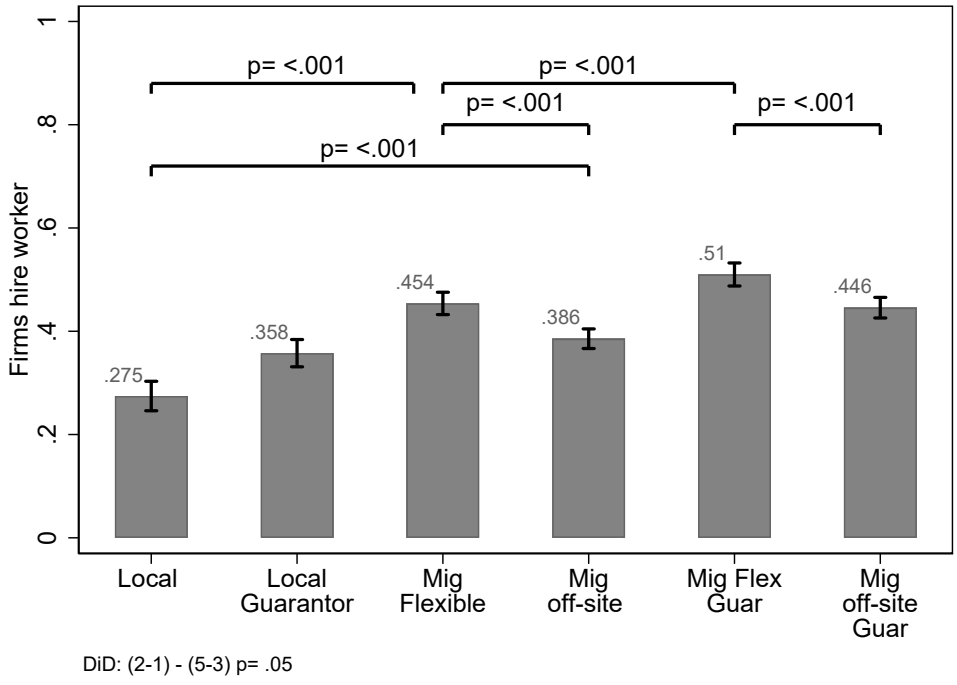
We winsorize m_i at the 99th percentile of the sample distribution to prevent a small number of very large firms from dominating the weighted estimates.

Results. Figures A-13 and A-14 present the employment-weighted results. The qualitative patterns are unchanged relative to both the unweighted and sampling-weight-corrected estimates: firms exhibit a clear preference for migrant workers, and imposing off-site residence reduces demand. As expected, the point estimates are larger than the population-weighted (equal-firm) estimates from Section A.3.3, reflecting the fact that the migrant preference is concentrated among larger firms that account for a disproportionate share of total hiring.

Figure A-13: Demand across the wage schedule (employment-weighted)



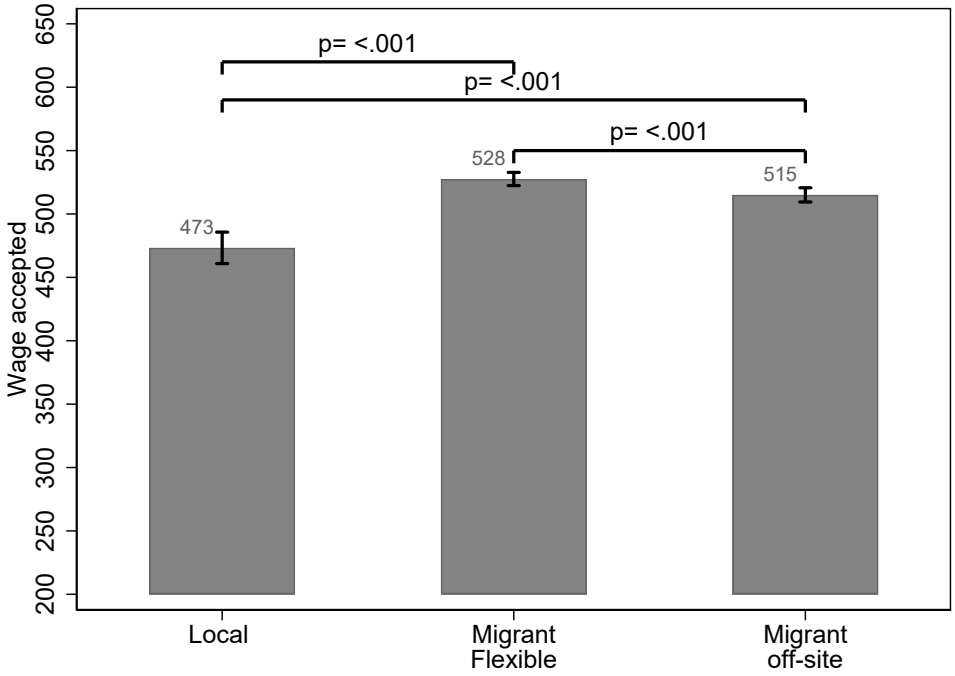
(a) Local vs. Migrant Flexible vs. Migrant Off-site



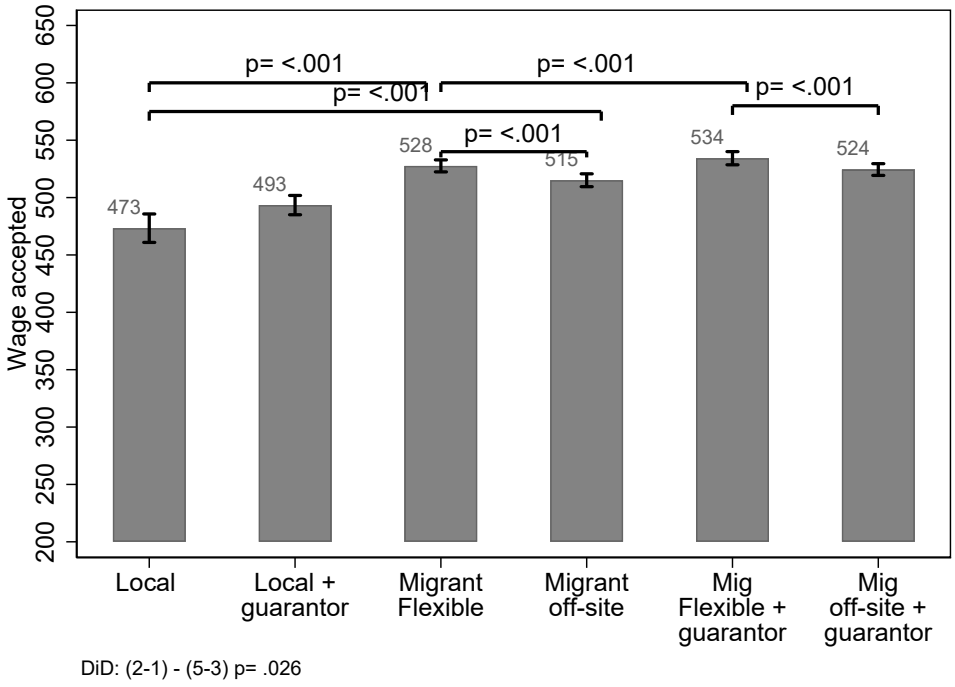
(b) All contracts

Notes: The figure replicates the main demand results using employment-weighted inverse-probability weights $W_i = w_i \times m_i$, where w_i is the sampling weight from Section A.3.3 and m_i is the number of permanent workers (winsorized at the 99th percentile). The resulting estimates reflect the expected demand for each contract type at a randomly drawn job slot in the Patna construction market. Panel (a) shows the three main contracts (local, migrant flexible, migrant off-site); Panel (b) includes all six contracts. Bars show predicted hiring probabilities from a linear probability model of acceptance on treatment indicators with firm and wage fixed effects, estimated with probability weights and standard errors clustered at the firm level.

Figure A-14: WTP for different contracts (employment-weighted)



(a) Local vs. Migrant Flexible vs. Migrant Off-site



(b) All contracts

Notes: The figure replicates the main WTP results using employment-weighted inverse-probability weights. The outcome is the maximum daily wage (INR) the firm reports for each contract. Panel (a) shows the three main contracts; Panel (b) includes all six. Estimated with firm fixed effects, probability weights, and standard errors clustered at the firm level. See notes to Figure A-13 for details on weight construction.

A.4 Worker Experiment

Table A-3: Summary stats of Local workers

	Mean	SD	N
Age of Respondent	31.62	8.57	198
Years of education	4.72	4.30	198
Backward caste	0.54	0.50	198
Scheduled caste/tribe	0.29	0.45	198
Years of work	8.55	6.15	198
Worked in another district of Bihar	0.63	0.48	198
Worked in another state	0.26	0.44	198
Monthly Income (INR)	13,968.57	4,113.04	175
Family Monthly Income (INR)	22,632.93	13,380.50	164
Owns a bike	0.13	0.34	198
Loan in last 3 months	0.19	0.39	180

Notes: The table reports summary statistics for local workers in the experimental sample (both pure control as well as those who were offered jobs), recruited from labor stands in Patna. The unit of observation is the worker. Number of observations may vary across rows due to non-response.

Table A-4: WTA for Migrant Workers: On-site vs Off-site

	Outside Option	Mediation	Insurance
Treatment	-27.119***	-21.610***	-26.667***
	(6.284)	(5.986)	(5.838)
On-site	-34.453***	-1.795	-3.297
	(9.984)	(10.648)	(10.674)
Treatment × *On-site (DiD)*	14.619*	-5.056	-15.282*
	(7.520)	(8.574)	(9.167)
Observations	238	238	238
Control mean (off-site)	596.19	582.63	585.83
Control mean (on-site)	561.25	580.83	580.93
Question order FE	✓	✓	✓

Notes: Each column reports estimates from the regression $sw_i = \alpha + \beta_1 \, Treat_i + \beta_2 \, On\text{-}site_i + \beta_3 \, (Treat_i \times On\text{-}site_i) + \boldsymbol{\gamma}' Order_i + \varepsilon_i$, where sw_i is the worker's switching point (the lowest wage at which the worker accepts the offer). Workers who reject all wages are assigned $w_{\max} + 25$. *Treatment* ($\hat{\beta}_1$) is the WTA effect for off-site workers. *On-site* ($\hat{\beta}_2$) is the WTA gap between on-site and off-site workers in the control group. *Treatment* × *On-site* ($\hat{\beta}_3$) is the DiD: the difference in the treatment effect between on-site and off-site workers. The sample in each column is restricted to workers who received both the control arm and the relevant treatment arm. Question order fixed effects control for the order in which the two offers were presented to the worker. Standard errors are clustered at the worker level and reported in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

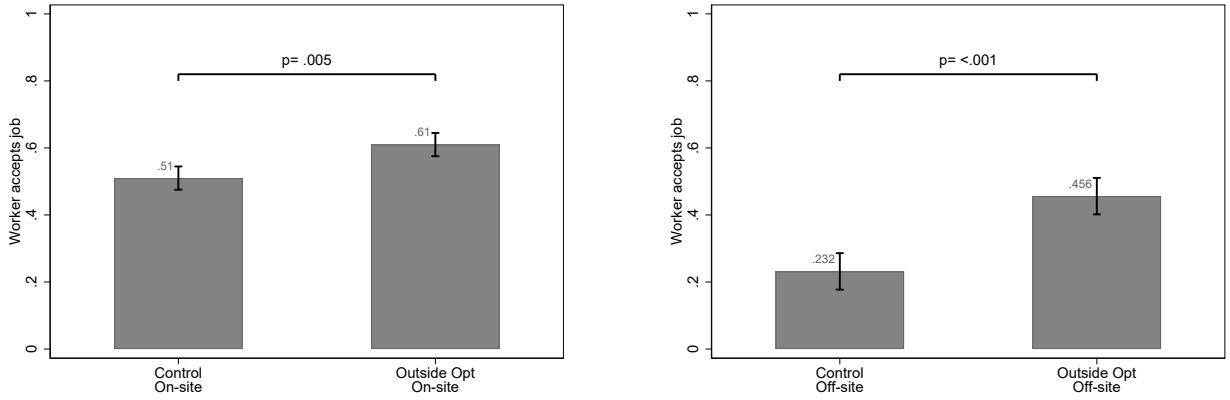
Table A-5: Effect of Contract Protections on Worker WTA: Interval Regression

	Outside Option		Mediation		Insurance	
	Off-site	On-site	Off-site	On-site	Off-site	On-site
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	-53.911***	-24.413***	-41.367***	-45.898***	-51.889***	-62.561***
	(9.998)	(5.678)	(9.517)	(9.072)	(9.375)	(9.232)
Control mean (OLS sw)	596.05	561.25	582.63	581.90	584.91	580.17
Worker FE	✓	✓	✓	✓	✓	✓
Workers	57	60	59	58	58	58
Observations	114	120	118	116	116	116
Left-censored (%)	26.3	50.8	38.1	38.8	38.8	44.8
Right-censored (%)	52.6	33.3	48.3	40.5	47.4	37.9

Notes: Each column reports interval regression estimates of the effect of a contract protection on workers' willingness-to-accept (WTA) daily wages. The dependent variable is the WTA interval, constructed as follows: workers who first accept at wage $w > 500$ contribute the interval $(w-25,\ w]$; workers who accept at $w = 500$ (the lowest offered wage) contribute $[450,\ 500]$; workers who reject all wages contribute $(600,\ 750]$. Standard errors, clustered at the worker level, are in parentheses.* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

A.4.1 Worker Labor Supply Across All Wages

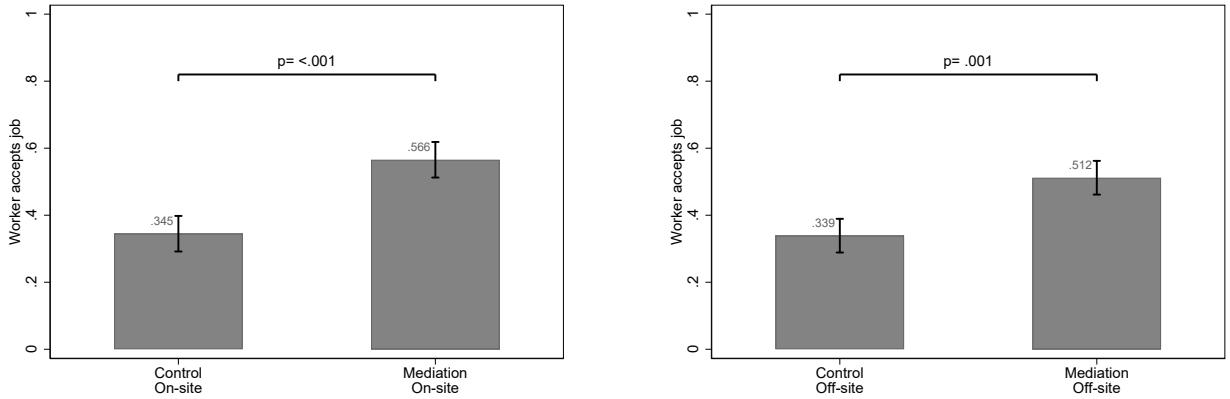
Figure A-15: Effect of Outside Option on Worker Acceptance (All Wages)



(a) On-site work (b) Off-site work

Notes: Each panel shows mean acceptance rates from a regression of the accept/reject decision on treatment indicators with worker fixed effects and wage fixed effects, estimated separately by residence arrangement. The sample is restricted to workers who received both a control and an outside-option offer. Each bar plots the predictive margin for the relevant treatment arm. Error bars show 95% confidence intervals. Standard errors are clustered at the worker level. *p*-values are shown for a two-sided test of equality between the control and treatment arms.

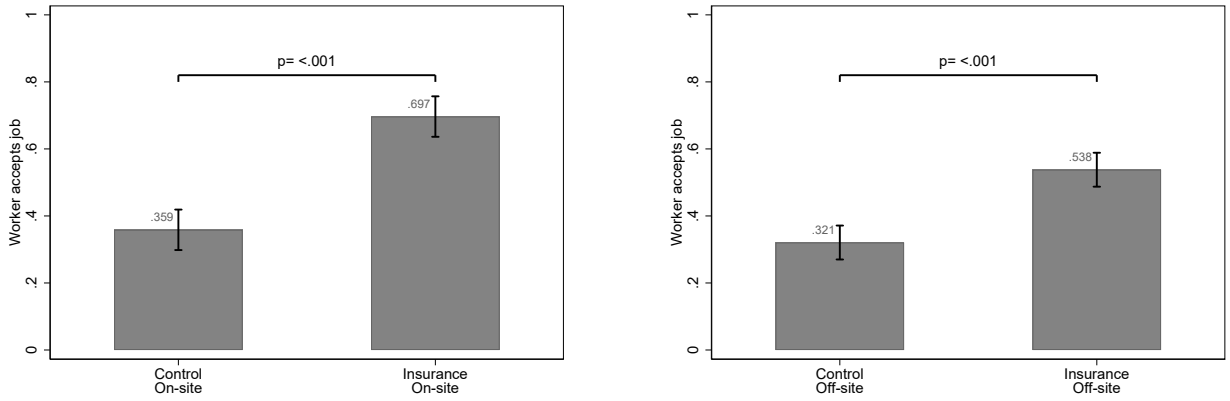
Figure A-16: Effect of Mediation on Worker Acceptance (All Wages)



(a) On-site work (b) Off-site work

Notes: Each panel shows mean acceptance rates from a regression of the accept/reject decision on treatment indicators with worker fixed effects and wage fixed effects, estimated separately by residence arrangement. The sample is restricted to workers who received both a control and a mediation offer. Each bar plots the predictive margin for the relevant treatment arm. Error bars show 95% confidence intervals. Standard errors are clustered at the worker level. *p*-values are shown for a two-sided test of equality between the control and treatment arms.

Figure A-17: Effect of Wage Insurance on Worker Acceptance (All Wages)



(a) On-site work

(b) Off-site work

Notes: Each panel shows mean acceptance rates from a regression of the accept/reject decision on treatment indicators with worker fixed effects and wage fixed effects, estimated separately by residence arrangement. The sample is restricted to workers who received both a control and an insurance (wage-theft/payment-delay protection) offer. Each bar plots the predictive margin for the relevant treatment arm. Error bars show 95% confidence intervals. Standard errors are clustered at the worker level. *p*-values are shown for a two-sided test of equality between the control and treatment arms.

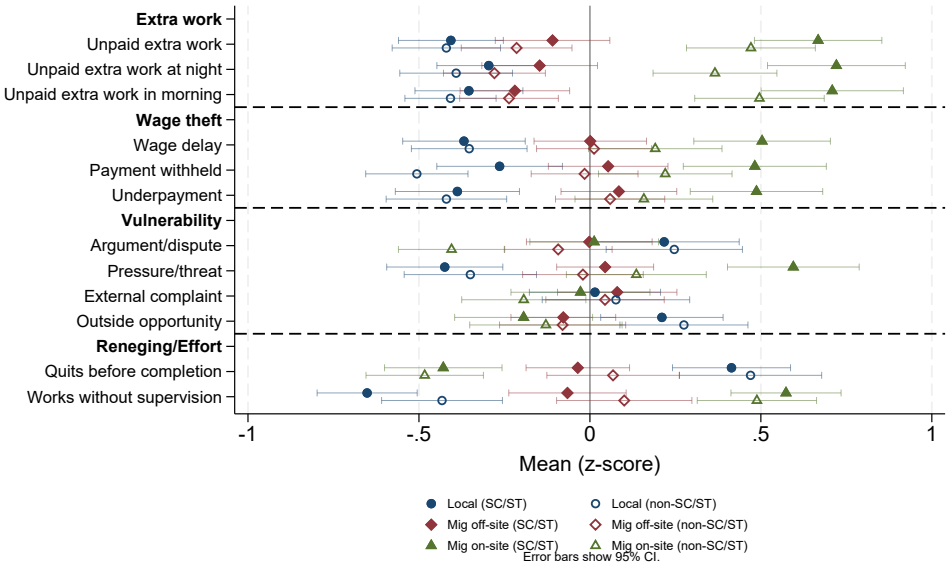
A.4.2 Worker Heterogeneity

Heterogeneity in Worker Beliefs by Caste To assess whether the belief patterns documented in Section 6 vary with workers' social identity, we split the migrant worker sample by Scheduled Caste/Scheduled Tribe (SC/ST) status and reproduce the belief plot separately for each group. SC/ST workers constitute approximately 56% of the sample; the remaining workers are predominantly Other Backward Classes (OBC). All outcomes are standardized using the pooled mean and standard deviation across both groups, so that z-scores are directly comparable.

Figure A-18 presents the results. The core pattern—on-site migrants perceived as most exposed to unpaid extra work, wage theft, and vulnerability, with locals perceived as least exposed—is present among both SC/ST and non-SC/ST workers. SC/ST workers tend to report somewhat larger perceived gaps between on-site migrants and locals, particularly for outcomes in the vulnerability and wage theft clusters. This is consistent with caste-based social disadvantage sharpening workers' awareness of—or exposure to—exploitative conditions in destination labor markets. The broad similarity of the gradient across caste groups reinforces the conclusion that the vulnerability of on-site migrants is a widely recognized feature of the market, not an artifact of the beliefs of any particular social group.

Heterogeneity in Worker Beliefs by Migration Experience To assess whether the belief patterns documented in Section 6 reflect personal exposure to destination labor markets or instead represent common knowledge among workers in origin communities, we split the migrant worker sample by whether the worker has previously migrated out of state for work. Out-of-state migration is common in our sample: 64% of workers report having worked in another state. All

Figure A-18: Heterogeneity in Migrant Worker Beliefs by SC/ST Status

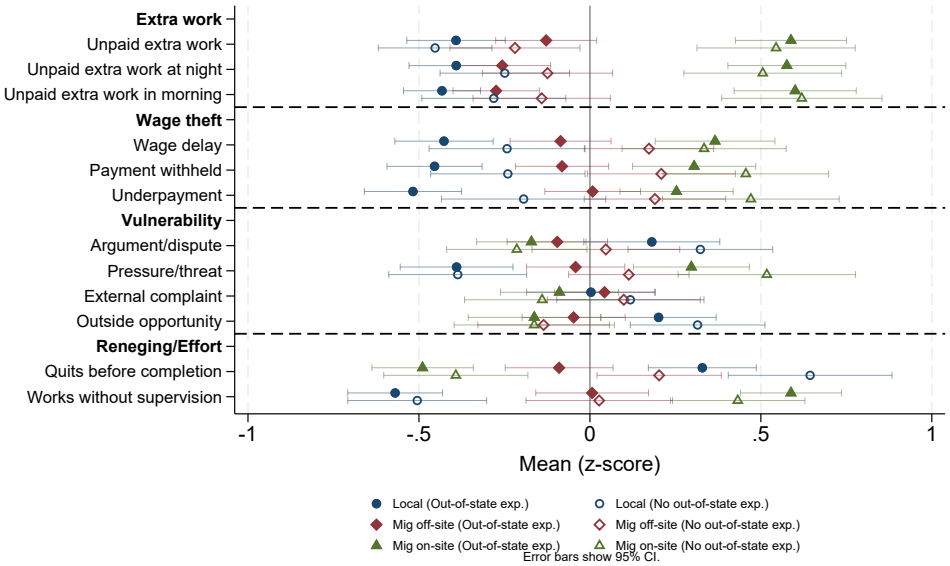


Notes: The figure plots migrant workers' beliefs about the prevalence of various working conditions for three worker types: local workers, off-site migrants, and on-site migrants, separately by SC/ST status. Each outcome is expressed as a z-score, standardized using the pooled (across SC/ST groups) mean and standard deviation so that magnitudes are comparable across subgroups. Filled markers denote SC/ST workers; hollow markers denote non-SC/ST workers (predominantly OBC). Color and shape encode the predicted worker type: navy circles for locals, maroon diamonds for off-site migrants, and green triangles for on-site migrants. SC/ST and non-SC/ST markers are jittered vertically to avoid overlap. Error bars show 95% confidence intervals. The sample consists of 384 migrant workers.

outcomes are standardized using the pooled mean and standard deviation across both groups.

Figure A-19 presents the results. The core gradient—on-site migrants perceived as most exposed, locals least—is present among both groups across all four clusters. However, the two groups do not overlap uniformly. In the extra work and wage theft clusters, workers with out-of-state experience report somewhat more pronounced beliefs about the exposure of on-site migrants: the perceived gap between on-site migrants and the other two worker types is wider for experienced workers, particularly for unpaid extra work, payment withheld, and underpayment. This is consistent with personal migration experience sharpening perceptions of the conditions most directly tied to employer extraction—extra hours and wage non-payment—which workers are most likely to have encountered firsthand. In contrast, beliefs about vulnerability and reneging are similar across the two groups: both experienced and inexperienced workers perceive on-site migrants as less likely to dispute, complain, or quit, and these perceptions do not differ appreciably with migration history. This pattern suggests that the social dimensions of migrant vulnerability—reduced bargaining power, weaker outside options, reluctance to contest mistreatment—are widely recognized in origin communities even without direct personal exposure, plausibly transmitted through returning migrants or social networks.

Figure A-19: Heterogeneity in Migrant Worker Beliefs by Out-of-State Migration Experience



Notes: The figure plots migrant workers' beliefs about the prevalence of various working conditions for three worker types: local workers, off-site migrants, and on-site migrants, separately by whether the worker has previously migrated out of state for work. Each outcome is expressed as a z-score, standardized using the pooled (across both groups) mean and standard deviation. Filled markers denote workers with prior out-of-state migration experience (64% of the sample); hollow markers denote workers with no out-of-state experience. Color and shape encode the predicted worker type: navy circles for locals, maroon diamonds for off-site migrants, and green triangles for on-site migrants. Markers are jittered vertically to avoid overlap. Error bars show 95% confidence intervals.

B Randomization Balance

Table B-1: Balance on treatment-type assignment

	Insurance		Mediation		Outside option		
	Mean	(SD)	Mean	(SD)	Mean	(SD)	p-value
Age of Respondent	33.10	(10.64)	34.06	(9.63)	32.10	(9.24)	0.32
Years of education	3.55	(3.81)	2.84	(3.44)	3.12	(3.34)	0.30
Backward caste	0.38	(0.49)	0.38	(0.49)	0.41	(0.49)	0.89
Scheduled caste/tribe	0.57	(0.50)	0.53	(0.50)	0.56	(0.50)	0.84
Years of work	13.14	(9.28)	13.37	(8.34)	12.13	(7.71)	0.50
Worked in another district of Bihar	0.41	(0.49)	0.42	(0.50)	0.43	(0.50)	0.97
Worked in another state	0.69	(0.46)	0.62	(0.49)	0.60	(0.49)	0.31
Monthly Income (INR)	13432.46	(3267.12)	14284.40	(4841.64)	14150.44	(4291.23)	0.26
Family Monthly Income (INR)	19356.19	(9890.35)	19731.48	(10118.79)	20290.18	(9950.25)	0.78
Owns a bike	0.13	(0.34)	0.16	(0.36)	0.09	(0.28)	0.29
Has Loan	0.58	(0.50)	0.56	(0.50)	0.55	(0.50)	0.92

Notes: The table reports means and standard deviations of worker baseline characteristics by the treatment type (insurance, mediation, or outside option) the worker was assigned to in the experiment. One observation per worker. The p-value column reports the result of a joint F-test of equality of means across the three treatment types (2 degrees of freedom), testing whether baseline characteristics are balanced across treatment arms.

Table B-2: Balance on residence assignment

	Off-site		On-site		
	Mean	(SD)	Mean	(SD)	p-value
Age of Respondent	32.41	(9.51)	33.77	(10.18)	0.20
Years of education	3.20	(3.49)	3.14	(3.59)	0.87
Backward caste	0.40	(0.49)	0.38	(0.49)	0.66
Scheduled caste/tribe	0.53	(0.50)	0.57	(0.50)	0.45
Years of work	12.53	(8.34)	13.24	(8.60)	0.44
Worked in another district of Bihar	0.41	(0.49)	0.43	(0.50)	0.83
Worked in another state	0.62	(0.49)	0.66	(0.48)	0.50
Monthly Income (INR)	14090.36	(3815.55)	13813.53	(4510.99)	0.54
Family Monthly Income (INR)	20101.52	(10692.95)	19488.10	(9210.76)	0.58
Owns a bike	0.11	(0.32)	0.13	(0.34)	0.63
Has Loan	0.52	(0.50)	0.60	(0.49)	0.14

Notes: The table reports means and standard deviations of worker baseline characteristics by residence assignment (off-site or on-site). One observation per worker. The p-value column reports the result of a two-sided t-test of equality of means across residence groups, testing whether baseline characteristics are balanced between the two residence arrangements.

Table B-3: Balance on offer presentation order

	Control first		Treatment first		
	Mean	(SD)	Mean	(SD)	p-value
Age of Respondent	33.00	(9.77)	33.54	(10.40)	0.70
Years of education	3.20	(3.60)	3.04	(3.21)	0.75
Backward caste	0.40	(0.49)	0.35	(0.48)	0.50
Scheduled caste/tribe	0.55	(0.50)	0.60	(0.49)	0.49
Years of work	12.85	(8.48)	13.04	(8.49)	0.88
Worked in another district of Bihar	0.42	(0.49)	0.44	(0.50)	0.75
Worked in another state	0.65	(0.48)	0.56	(0.50)	0.19
Monthly Income (INR)	13954.80	(4045.20)	13927.27	(4841.39)	0.96
Family Monthly Income (INR)	19630.40	(9884.73)	20609.09	(10401.07)	0.51
Owns a bike	0.13	(0.33)	0.11	(0.31)	0.65
Has Loan	0.58	(0.49)	0.50	(0.50)	0.30

Notes: The table reports means and standard deviations of worker baseline characteristics by the order in which contract offers were presented (control contract first or treatment contract first). One observation per worker. The p-value column reports the result of a two-sided t-test of equality of means across presentation order groups, testing whether baseline characteristics are balanced between the two randomized orderings.

C Survey Implementation

C.1 Firm Experiment

C.1.1 Firm Experiment: Elicitation Script

The following is a translation of the Hindi script read aloud to firm owners by enumerators before the WTP elicitation.

Introduction. We will now ask you some questions in which we will give you the opportunity to

hire different types of workers.

We will ask you about a total of 6 different contracts. You will tell us whether or not you would hire a worker under each contract.

For each contract, we will give you some information about the worker: (a) where they are from—whether they are local or from outside Patna, and (b) where they will stay during the work. After that, we will ask whether you would hire the worker, and if so, the maximum daily wage you would be willing to pay. In our 6 contracts, you can hire two types of workers:

1. **Local workers from Patna**—who are residents of Patna city or Patna district, or who have been living continuously in Patna for a long time. This includes workers who may not live in Patna city but reside in Patna district and commute daily for work.
2. **Workers from other districts of Bihar**—such as Sitamarhi, Purnia, Katihar, Araria, Bhagalpur, Samastipur, etc. We will bring these workers from villages in districts outside Patna. These workers have prior experience in construction labor.

The residence arrangement for outside workers can be of two types:

1. **Daily commuting:** The worker will rent their own room or house in the city and commute to the site daily. That is, they will not stay at or near the site.
2. **Staying at or near the site:** The worker will reside at the site or nearby.

Description of the six contracts.

1. In one contract, we will provide you with an outside worker whose residence arrangement will be at your discretion. If you wish, the worker will stay at the site; otherwise, they will find their own accommodation and commute to the site.
2. In the second contract, we will also provide an outside worker, but this worker will not stay at the site and will commute daily from their own accommodation.
3. In the third contract, we will provide a local worker.
4. The remaining three contracts will involve the same three worker types, but in addition we will provide you with a guarantee. We will explain this to you later.

For whichever of the 6 contracts you wish to hire the worker, please say "yes," and for those you do not, say "no." The decision to hire is entirely yours. *Please answer all contracts based on normal circumstances, not emergency situations. That is, tell us whether, under normal conditions—such as when you are starting a new project—you would hire the worker under each contract, and if so, the maximum daily wage you would offer.*

Important: Each contract is completely independent of the others. Therefore, please think about each contract separately and answer accordingly. Your answer to one contract should not affect your answer to the next. You will be shown a total of 6 contracts. For each contract:

1. If you do not wish to hire the worker: say "no."
2. If you wish to hire the worker: say "yes" and state the maximum daily wage (rupees per day) at which you are willing to hire the worker under that contract. (That is, if the wage were even 1 rupee higher, you would not hire the worker under that contract.)

Allocation mechanism (BDM). After you have answered all 6 contracts, two things will be selected by a lucky draw:

1. One contract out of the 6.
2. A wage amount. The wage in the lucky draw will be drawn from our predetermined list between 500 and 600—specifically 500, 525, 550, 575, or 600.

The rules are as follows:

1. If the maximum wage you stated for the contract selected in the lucky draw is equal to or greater than the wage drawn, you will be given a worker under that contract, and the wage will be the one drawn in the lucky draw (not your stated wage).
2. If your stated wage is less than the lucky-draw wage, or you said "no" to that contract, no worker will be provided.

The worker will be provided to you within the next month, or according to your need (when you say), under the same contract and at the same wage.

Illustrative example. Suppose for a certain contract you said you are willing to pay up to 550 per day. If that contract is selected in the lucky draw and the drawn wage is 525, you will receive the worker at a wage of 525. If the drawn wage is 575, no worker will be provided.

Comprehension check. Before proceeding, the enumerator verifies the respondent's understanding using the following questions:

1. "Is each contract separate or are they linked?" *(Correct: Each contract is completely separate.)*
2. "How will it be decided whether you receive a worker or not?" *(Correct: One contract and one wage will be selected by lucky draw.)*
3. "If the contract and wage selected in the lucky draw are ones for which you said 'yes,' and your stated maximum wage is equal to or greater than the lucky-draw wage—what will happen?" *(Correct: You will be given a worker under the selected contract at the lucky-draw wage.)*
4. "If the contract and wage selected in the lucky draw are ones for which you said 'no'—what will happen?" *(Correct: No worker will be provided.)*

5. If the respondent does not understand "random/lucky draw": "Just as you would draw one slip from among 6 slips without looking—the computer will select one contract in the same way."

Features common to all contracts. The following conditions apply to all 6 contracts and do not vary:

1. The duration of work is 15 days. After that, if needed, work may be continued by mutual agreement.
2. Payment may be made weekly or in a lump sum after 15 days, at your convenience. If the worker needs money in between, you may provide an advance at your discretion.
3. When answering for each contract, please assume you are starting a new project. Under those circumstances, would you hire the worker at the stated wage or not?
4. Workers do not choose their own residence arrangement. We recruit all workers in the same manner and from the same pool. After recruitment, due to logistical constraints (such as limited space for on-site accommodation), we use a lottery to determine which worker stays at or near the site and which commutes daily.

We will now ask you about the contracts one by one.

C.1.2 Questions in the Belief Experiment

We elicit beliefs for three worker categories: (i) local workers from Patna, (ii) migrants from districts outside Patna with on-site residence, and (iii) migrants from districts outside Patna who live off-site in the city and commute daily. We ask the following questions for all the workers.

1. **Absence (0–7 days):** Expected number of days absent over the next 7 workdays.
2. **Reneging (out of 10):** Out of 10 hires for a 7-day job, expected number who leave before completing all 7 days.
3. **Delay (minutes):** Average minutes late among those who show up to work.
4. **Outside option (days):** If the worker leaves the job, expected number of days to find a new daily-wage job in Patna.
5. **Hours worked (hours/day):** On a normal day (starting on time), expected hours worked.
6. **Unpaid extra hour (out of 10):** If the workday is extended by 1 hour on 1–2 days in a week with no extra pay, expected number (out of 10) willing to work under these conditions.

7. **Trusted without supervision (out of 10):** Out of 10 hires, expected number who can be trusted to work well without close supervision.

8. **Response to delayed pay (out of 10):** If payment is delayed by 2 days, expected number (out of 10) who would argue, dispute, or stop working.

9. **Effort rating (1–10):** Typical effort/work pace during an 8-hour workday (1 = minimum, 10 = maximum).

10. **Task productivity (per hour):** Average number of times in one hour the worker produces.

11. **External complaint/help-seeking (out of 10):** If a wage/payment dispute arises, expected number (out of 10) who would go outside the site to seek help (e.g., leaders, associations, police).

12. **Network support in Patna (out of 10):** Expected number (out of 10) with family/relatives in Patna who can help in a medical emergency.

C.1.3 Follow-up Vignette

There are two workers, both from outside the district. Both have recently arrived in Patna: Neeraj and Manoj. Both workers are the same age, are identical, and there is no difference between them. Both are willing to stay on-site and are also willing to commute to the site daily. If Neeraj gets the opportunity to work while living on-site and Manoj commutes to the site every day, whom would you trust more to do good work without supervision?

C.2 Worker Experiment

C.2.1 Worker Experiment: Elicitation Script

The following is a translation of the Hindi script read aloud to migrant workers by enumerators before the contract-variation experiment. The specific contract terms (work description, residence arrangement, and protections) were presented within each individual offer and are not reproduced here; see Section 6 for details.

Introduction. Now I will ask you about two types of wage-based work (Job 1 and Job 2). For each job, I will tell you three things: (1) what the work is, (2) where the work will be and what the residence arrangement will be, and (3) what the daily wage will be.

After that, you will tell me: "Under those terms, would you want to work—yes or no?"

Please keep in mind that each question is separate; your answer to one question has no bearing on any other question. Please think carefully about the terms of each question and answer accordingly. If you want to work under those terms, say "yes"; if not, say "no." Each set of terms will be asked at five different daily wages. Therefore, there will be 10 questions in total.

Allocation mechanism. After you have answered all the questions, one question will be selected by a lucky draw—just as you would draw one slip from among 10 slips without looking.

If the question selected by the lucky draw is one for which you said "yes," you will be given work under the terms of that question; and if you said "no" to the selected question, you will not be given work.

Comprehension check. Before proceeding, the enumerator verifies the respondent's understanding using the following questions:

1. "How many questions will there be in total?" *(Correct: ten.)*
2. "Is each question separate?" *(Correct: yes, each is separate.)*
3. "What will happen at the end?" *(Correct: a lottery will select one question out of ten.)*
4. "If you said 'yes' to the selected question, then what?" *(Correct: you will be given work under those terms.)*
5. "And if you said 'no'?" *(Correct: you will not be given work.)*

Alright, now I will describe the first question—please listen carefully and then tell me whether you would want to work under those terms or not.

C.2.2 Questions in the Belief Experiment

We ask workers the following questions about their experiences in three situations: (i) working locally, (ii) working as a migrant while living off-site in the city and commuting daily, and (iii) working as a migrant while staying on-site or near-site during the job.

1. **Unpaid overtime incidence (out of 10):** Expected number made to work 1–2 extra hours on at least one day within 7 days, without extra pay.
2. **Evening cleaning (out of 10):** Expected number asked to stay late in the evening to do cleaning work.
3. **Early-morning curing (out of 10):** Expected number asked to come early in the morning to do curing (pouring water on walls).
4. **Any payment delay (out of 10):** Expected number experiencing at least one delay in receiving wages during 7 days of work.
5. **Withholding at endline (out of 10):** Expected number for whom some amount is withheld after 7 days relative to the agreed entitlement.
6. **Underpayment (out of 10):** Expected number paid a daily wage of 450 instead of the agreed 500 after completing 7 days.

7. **Reneging (out of 10):** Expected number leaving the job before completion of 7 days.
8. **Any dispute/argument (out of 10):** Expected number with at least one argument or dispute with the contractor over wages/hours/work within 7 days.
9. **Any contractor pressure (out of 10):** Expected number for whom the contractor puts pressure at least once within 7 days (scolding/threatening, removal threats, or withholding payment).
10. **Works well without contractor (out of 10):** Expected number who work well even in the absence of the contractor.
11. **External complaint/help-seeking (out of 10):** If a wage/payment dispute arises, expected number who go outside the site to seek complaints/help (e.g., leader, contractor association, police, others).
12. **Re-employment (out of 10):** If they leave the current job, expected number able to find a new daily-wage job within 2 days.