Employer-Facilitated Savings for low-income workers: Uptake, Behavior, and Incentives[1]

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Abstract

This study evaluates an employer-facilitated savings scheme for garment workers in South India, implemented via a randomized controlled trial with four treatment arms. Workers were offered combinations of a new bank-based savings account, encouragement to start a recurring deposit (RD), automatic payroll deductions into the RD, and financial rewards tied to retention or attendance, while the control group received no intervention. Overall take-up was 22% and highly gendered: women were substantially less likely to enrol than men (17% vs. 40%). Men who declined often already had savings or lacked funds to save, whereas many women refused due to anticipated factory exits or household approval constraints, with family disapproval particularly prominent among women who initially expressed interest. Simple encouragement had little effect, but automatic payroll deductions produced large and sustained increases in saving behaviour, raising the likelihood of saving monthly by 42% and tripling average amounts saved relative to the control group. saved relative to the control group. Retention- and attendance-linked rewards did not increase take-up or savings, nor did they affect workplace attendance or turnover, consistent with survey evidence that workers were not motivated by such delayed incentives. These findings suggest payroll deductions are a powerful mechanism to support worker savings, while conditional, employer-linked rewards created little incentive and may even have generated distrust.

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I. Introduction

Savings are an integral part of one's financial well-being. In developed countries, the life-cycle hypothesis predicts that individuals save in their working years to be able to manage and maintain their consumption during retirement. In developing countries, savings play a larger role, extending to essential and overall welfare. Here, small amounts saved regularly over shorter durations, form the means of smoothening consumption, dealing with emergencies and investing in human capital resources like health and education (Deaton, 1989). In recent years, this has developed interest in exploring and encouraging micro-savings as a promising pathway to achieving financial well-being.

Low-income individuals, like blue-collared workers, groups for whom micro-saving might be most important, are also the groups that face multiple barriers in saving formally. These include the monetary costs of accessing, opening and maintaining an account, transaction costs and non-monetary requirements related to paperwork. For those with low incomes, these can be non-trivial costs.

As the first step towards enabling savings, interventions have aimed at providing the poor with a formal account with no or reduced costs and paperwork. In a study in Sri Lanka, the intervention gave its participants a mobile phone and a sim card along with a demonstration of how they can make deposits into their accounts (De Mel, 2022). In Bangladesh, ATM machines were installed on the factory floor when garment factory workers were introduced to payroll accounts for the first time (Breza, Kans & Klappar, 2020).

However, for a larger number of these studies, reducing costs had limited success, if at all. In rural Uganda and Malawi, provision of even a completely subsidized account for the poor did not increase account use. Authors found suggestive evidence that long distances to banks could have been one of the reasons for this (Dupas et al., 2018). Although, in Nepal, where bank accounts were made free as well as accessible, female household heads still did not see an increase in their total monetary assets despite a take-up rate of 84% and usage rate of 80% of those accounts (Prina, 2015). Studies on cost reduction have brought forth that simply removing entry barriers might not be enough beyond take-up.

These results have directed interest towards more sophisticated means of encouraging savings by incorporating commitment and payroll aspects into savings interventions. As seen in developed countries already, workplaces serve as a setting for various financial decisions, especially those related to saving and investments. This, in turn, can make employers unique and important enablers for financial inclusion of low-income workers (Breza, Kans & Klappar, 2018). They can support and improve workers' formal savings not only by helping them open a payroll account, but also by facilitating automatic deductions and offering matching contributions. In turn, they can stand to benefit from better performance.

Automatic deductions from income mitigate the social pressures to share income. This can be valuable to low-income workers, among whom social pressure to share income is common. In Côte d'Ivoire, piece-rate factory workers were offered a private savings account that was shielded from their social network. Here, they were allowed to save extra labour income away from their

regular payroll account. 60% of those who were offered this account signed up for it. Over 3-9 months, those with the account had 11% higher earnings as well as 10% higher attendance (Carranza et al., 2022).

Default (payroll) deductions are also popular for inducing commitment and mitigating self control issues. Automatically enrolling the employees of an Afghan telecom company for a 5% deduction from their salary towards their savings made them 40 percentage points more likely to engage in saving compared to individuals with no default deductions. After 6 months, the difference between the two groups was still high at 33 percentage points (Blumenstock, Callen and Ghani, 2018).

In Malawi, a savings scheme which automatically deducted a part of tea estate workers' monthly salary to later pay it as a lump sum proved to be very successful. Nearly half of those who were offered the scheme participated in it and chose to stay with the employer for 3 months. Along with savings, the scheme increased workers' earnings and productivity. Furthermore, the repeat sign-up for the scheme was also high. Although, when the workers were asked to make the same deposit manually, i.e. workers had to make deposits by handing cash to a project employee stationed next to the payroll site, the scheme was less successful. Neither take-up, nor usage or savings in the treatment group were significantly different from the control group despite the easy-to-reach location for manual deposits (Brune, Chyn and Kerwin, 2021).

These studies make a strong case for promoting employer-enabled savings which can improve workers' financial well-being as well as firm performance, which would be key to making the arrangement viable. However, research in this area is emerging, especially in developing countries.

Building on this literature, we conducted a randomized controlled trial with garment workers in South India to evaluate the impact of an employer-facilitated savings scheme. The intervention comprised four treatment arms that combined different features: provision of a new bank account, encouragement to start a recurring deposit (RD), automatic payroll deductions into the RD, and financial rewards tied to retention or attendance. A control group continued with only their salary accounts. This design allows us to isolate the effects of simple encouragement, automatic deductions, and employer-linked delayed incentives on workers' financial and workplace outcomes.

Take-up of the scheme was 22% overall but showed sharp gender disparities, with men enrolling at more than twice the rate of women (40% vs. 17%). Men who declined generally cited lack of spare income or already having savings, whereas women were more likely to refuse due to anticipated factory exits or household approval constraints, with family disapproval being particularly salient.

Importantly, the features of the scheme—automatic payroll deductions or conditional incentives—did not change initial take-up. Workers who enrolled were largely those who already intended to save or were interested in owning a zero balance savings account, while those who opted out were not persuaded by additional features like rewards or auto-deductions. Among enrollees, however, automatic deductions proved highly effective, increasing the likelihood of saving monthly by 42% and tripling the average amount saved relative to the control group. In

contrast, simple encouragement had no effect, while retention- and attendance-linked financial rewards neither raised savings nor improved workplace outcomes.

II. Context

The garment manufacturing industry is a significant employment sector in India, comprising a workforce of approximately 13 million, with a substantial proportion being female workers. The garment exporter whom we partnered with employs over 100,000 full-time workers, three-fourths of whom are women, across its 63 factories, producing more than 144 million garments annually. Our study was conducted in one of the many units of the export house located in urban Bangalore, Karnataka.

The factory workers are required to have individual bank accounts for receiving wages. For workers who don't already have a bank account at the time of joining, the factory helps them open one at the factory. Workers who already have an account, can receive the wages in their existing accounts. Workers are paid their monthly wages on the 7th of every subsequent month. This includes their compensation, arrears and a bonus component, which is calculated based on their attendance and designation.

III. PLS Savings

We offer workers in a factory unit belonging to one of the largest garment exporters in India and located in Bengaluru to save in a 6-month commitment savings plan through a Recurring Deposit (RD henceforth) with a small finance bank. An RD is a term deposit that requires individuals to save a predetermined and fixed amount every month for a fixed duration of time, till maturity. Withdrawals before maturity are possible, but restricted.

1. <u>BSBD and RD Accounts</u>
   A term deposit such as an RD, which involves saving through auto-set instructions and locks in savings till its maturity, gives minimal control to both the customer and the bank over it. Hence, to start an RD at any bank, one must first open a basic savings account with that bank which would allow the bank to set up standing instructions for transfer of funds from the savings account to the RD.

   Considering workers' aversion to incurring non-maintenance charges of minimum balance in the bank accounts, we offered the Basic Savings and Bank Deposit Account (BSBDA), a zero-balance savings account to the workers, which also formed a prerequisite for starting the RD. The BSBDA pays interest at the nominal rate of 2.5-3% per annum, like regular savings accounts.

2. <u>Automatic Deposits</u>
   The attendance bonus is a monthly incentive at the factory, calculated, as described below, based on a worker's designation, and the number of paid days they have worked at the factory.
   - For operators, the bonus is Rs. 200 for working for all paid days in a month, and Rs.100 for missing 1 paid day. No attendance bonus earned if one misses more than 1 paid day.

- For non-operators, it is Rs. 100 for working for all paid days in a month, and Rs. 50 for missing 1 paid day. No attendance bonus earned if one misses more than 1 paid day.

The bonus, if earned, is paid in workers' salary accounts along with their wages on the 7th of every month. Under the savings plan, we asked the participants to commit to save from their wages an amount equivalent to their potential and maximum attendance bonus in the RD. This was Rs. 200 and Rs.100 for operators and non-operators, respectively. Every month during the 6 months of the study, the factory would automatically deposit this amount in their newly created BSBDA, while the remainder of their wages would be credited to their salary account as usual.

Thereby, in months where workers earned their full attendance bonus, they committed to saving that additional income, and in months where they did not, they committed to save from their monthly salary. If a worker wished to stop their savings, they could do so by informing the factory HR.

Workers could view their RD deductions reflected on their payslips under the basket of *other* deductions. If they wished to see the breakdown of these deductions, and the RD deposit specifically, they could request an annexure payslip from the HR. On the backend, the RD deposits were integrated into and reflected the monthly salary data, which details each worker's salary along with its components.

3. Recurring Deposit
   On the 7th of every month, workers' BSBD accounts were credited with Rs.100/200. On the 8th, this amount was automatically transferred to their RD through Standing Instructions (SI) set up by the bank. At the end of the 6th month, the maturity amount, that is the savings, and the interest earned on them at the rate of 5.5% p.a., was credited back to the BSBD account.

   The bank RD does not penalise missed installment payments. However, upon premature withdrawal before the end of the 6 months, it charges a penalty in the form of a lower interest rate by 1%.

4. Rewards
   Workers' committed savings and performance under the plan were encouraged through the following rewards.
   - The **retention reward** was a fixed, one-time reward of Rs.300.
   - The **attendance reward** was a variable one-time reward equivalent to 50% of the participant's total attendance bonus earned during the 6 months of the study.

   Both the rewards were conditional on i) continued saving in the RD and ii) working at Unit 14 over the 6 months of the study period, without any breaks.

IV. Study Design and Implementation

At the time of starting the study, the factory unit had a workforce of around 1300 workers, from which we drew a random sample of 1000 workers. The baseline surveys for these workers began

in May 2024. By July, as we completed the baseline survey, some workers had already exited the factory, leaving us with a sample of 959 workers. Given the large sample and anticipating the considerable time it would take to open each account, the randomization and enrollment of workers to the treatment groups was divided into 3 phases, with 346, 331 and 282 workers each.

Phase 1was launched in August 2024, followed by Phase 2 in September. During this time, more workers exited the factory, allowing us to cover only 312 workers from Phase 1 and 277 from Phase 2. To ensure balance within each phase and across the 3 phases, we re-randomized Phase 3 workers, excluding those who had exited the factory. We conducted Phase 3 enrollments in December with 217 more workers. Our final sample consisted of 806 workers.

Workers in each phase were stratified based on their gender and marital status, and each stratum was randomly divided into the following five groups.

1. **Treatment 1**, where participants were offered to open a BSBD account at the factory, during their working hours. They were encouraged to start an RD and save every month, but were not assisted in opening the RD.

2. **Treatment 2**, where the participants were offered to open a BSBD account at the factory, along with the factory's facility of making automatic deposits from their salary to the BSBD account. Further, the participants were also assisted in setting up standing instructions and starting the RD with the first instalment from BSBD to the RD account. After that the transfer would repeat automatically every month, on the same date i.e. the 8th of every month.

3. **Treatment 3**, where like Treatment 2, the participants were offered the BSBDA and the facility of automatic deposits to the RD. In addition, they were eligible for the retention reward of Rs. 300 if they continued to save in the RD and work at the factory throughout the 6 months of the study period.

4. **Treatment 4**, where the participants were offered the BSBDA, automatic deposits and the retention reward like under Treatment 3. Additionally, they were further eligible to earn the attendance reward if they continued to save in the RD and work at Unit 14 throughout the study period.

5. **Control Group**, where the participants were not offered the savings plan. They continued to hold only their salary accounts and receive their wages in it.

The start of a participant's intervention was marked by administration of the enrolment consent, informing them of the study group they have been allocated to and what it entails. Over the next few days those in Treatment Groups 1, 2 3 and 4 were a window to discuss the prospect of enrolling in the savings plan with their family.

If interested in opening the BSBD accounts, the participants were requested to share their KYC documents, namely, their Aadhar card and PAN card,[7] with the bank personnel visiting the factory to open the BSBD accounts. These accounts were activated instantly, and the participants were handed over an InstaKit, which included a debit card linked to their accounts. At the time of opening the BSBD account, the participants in Groups 2, 3 and 4 were also required to fill out an RD form[8], which the bank staff would later use to start their RDs on the 8th of the upcoming month.

V. Data and Summary Statistics

1. Data sources

Human Resources Data

The factory maintains a detailed database of all its workers across all units. This includes a personal dataset consisting of workers' demographic information such as age, gender, native language, second language, education, and date of employment.

The factory also manages a monthly salary dataset of all workers recording information about their tenure, paid days in the month, designation, net pay for the month and its components including the various deductions from their salary (ESI, canteen, rent etc.), arrears (if any) and the attendance bonus received. From September 2024 onwards, this dataset was updated to reflect the RD deposits as one of the deductions from study participants' salaries. Lastly, the factory also manages its workers' daily attendance data detailing on the type of leaves workers take.

For sampling, tracking and analysis of admin outcomes, we link these datasets by a unique worker ID which remains constant across workers' various employment spells at different factories.

Survey Data

a. **Baseline and Endline Surveys**

We began our study with the baseline survey to capture workers' demographic characteristics, like age, migrant status, household size, intended tenure and financial knowledge. Most importantly, we recorded their saving preferences and practices at the baseline. For each phase, the endline survey was conducted after 7-8 months of intervention, upon maturity of the RD and disbursement of the study rewards. It collected information on savings and savings preferences at the end of the study.

b. **High Frequency Surveys**

Before each pay cycle, i.e. between the 27th of a month to the 7th of the subsequent month, we administered these short surveys to a sub-sample of participants from each treatment group to capture their monthly savings and borrowings.

c. **Phone Surveys for Exited Participants**

[7] Participants who did not have a PAN card could open the account by filling Form 60 provided by the bank.

[8] Towards enrolments of Phases 2 and 3, the bank suggested shifting to a shorter process of starting the RD, which skipped the filling of the RD form, and instead started the RD through OTP or biometric authentication from the customer.

Garment factories typically experience a monthly worker turnover rate of 6-8%, which poses challenges for maintaining statistical power in studies. To address this, we conducted shorter versions of the HFS and endline surveys over a phone call with participants who had exited the factory. In addition to focusing on monthly and current savings, these surveys tried to understand workers' reasons for leaving the factory, their employment status, and their income and standard of living after leaving the factory job.

Passbook Data

At the end of the study, and upon maturity of participants' RDs, we requested their transactions data from their passbooks after administering an informed consent to them. Of workers who agreed to share their data, we recorded the details of the factory's automatic deposits into their BSBD account, along with details of their RD installments, and successful transfer of the reward. After collecting the data, the passbooks were returned to the workers.

2. Summary Statistics

Table 1 presents summary statistics and a balance check between the control group and all the treatment groups combined over demographic characteristics, savings and workplace outcomes at the baseline. Over most demographic variables like gender, age, education and marital status, the two groups are similar. The proportion of migrant workers, compared to local Kannada speaking workers is slightly higher in the treatment groups. However, this difference is significant only at the 10% level.

Across all savings outcomes like having any savings, having any savings in a bank and the log of total savings, the two groups are comparable, and we fail to reject that the difference in their means is different from zero. Close to 47% of the workers in our sample had any savings at baseline, and around 35-40% saved in a bank. This could be in a salary, personal and/or a joint account, or in a term deposit, such as a recurring or a fixed deposit. Similar is the case with having any borrowings at the baseline, and the log of total amount borrowed. Around 60% of workers in our sample said that they could make a purchase or transfer money using a UPI app, and around 70% knew how to withdraw money through an ATM, without any assistance.

Workers across both the control and the treatment groups have an average total tenure over all their employment spells of close to 40 months, and an average current tenure close to 20 months in their existing spell of employment.

Table 1: Summary Statistics

Variable	**Control Group** (N = 124)		**All Treatment Groups** (N = 682)		**Pairwise t-test** (N = 806)	
	Mean	Std Dev	Mean	Std Dev	Mean Diff	P-value
Age (years)	30.024	10.159	30.056	9.895	-0.032	0.974
% of Women	0.758	0.43	0.777	0.416	-0.019	0.641
% of Migrants (Inter-state)	0.492	0.502	0.572	0.495	-0.080*	0.099
% Ever Married	0.516	0.475	0.538	0.481	-0.022	0.652
Educ - Below G10	0.339	0.494	0.362	0.479	-0.023	0.617
Educ - Completed G10	0.411	0.502	0.356	0.499	0.055	0.243

% who are the HH Head	0.266	0.444	0.302	0.459	-0.036	0.421
% who Remit	0.702	0.459	0.711	0.454	-0.01	0.83
Asset Index	-0.005	1.366	0.003	1.355	-0.008	0.952
% who have Any Savings at BL	0.476	0.501	0.469	0.499	0.007	0.892
% who have Any Bank Savings	0.411	0.494	0.349	0.477	0.062	0.184
Log of Total Savings	6.405	4.978	6.67	4.876	-0.265	0.579
% having Any Loans	0.306	0.463	0.318	0.466	-0.012	0.796
Log of Total Loans	2.359	3.802	2.324	3.771	0.035	0.924
% knowing UPI purchase/ transfer	0.645	0.48	0.641	0.48	0.004	0.925
% knowing ATM withdrawal	0.718	0.452	0.692	0.462	0.026	0.568
% Using a Smartphone	0.823	0.384	0.78	0.415	0.043	0.288
Total Tenure (months)	41.79	43.108	37.678	38.648	4.111	0.285
Current Tenure (months)	21.042	27.978	20.016	22.548	1.026	0.654

VI. Empirical Strategy

The empirical analysis begins with factors determining the takeup of the savings product among the treated groups to understand which factors were related to higher or lower take up. We then proceed to test the impact of the intervention on the savings behavior of workers. Given that we expect treatment impacts on retention resulting in differential attrition across treatment and control groups, we use a weighting procedure to account for this in all our survey data analyses. Finally, we test for differences in workplace outcomes.

1. Impacts on formal, informal and total savings

We assess the impact of the savings product offer on actual savings at both the extensive and intensive margins, drawing on data collected through two rounds of high-frequency surveys (HFS). Each worker could be surveyed up to two times, depending on their continued presence in the factory during the survey period. Each HFS round was conducted after the intervention rollout, over a span of 2–4 months per phase, with only a rotating sub-sample of workers (from both treatment and control groups) interviewed each month. This rotating sample design helps capture potential seasonal variations in financial outcomes.

We begin with an arm-level specification:

$$Y_{ist} = \alpha + \tau_1 T1_i + \tau_2 T2_i + \tau_3 T3_i + \tau_4 T4_i + \gamma X_{i0} + \delta_s + \lambda_t + \varepsilon_{ist} \quad (1)$$

where $T1_i = 1$ if worker i was assigned to Treatment 1 (encouragement-only), $T2_i = 1$ if assigned to Treatment 2 (auto deductions only), $T3_i = 1$ if assigned to Treatment 3 (auto deductions + retention reward), $T4_i = 1$ if assigned to Treatment 4 (auto + retention + attendance reward), and the control group is the omitted category. X_{i0} are baseline demographic controls; δ_s are strata fixed effects (gender × marital status); λ_t are month, round, and phase fixed effects.

Next, to isolate the role of specific product features, we estimate pooled specifications. First, we estimate the effect of being assigned to any treatment (T1–T4):

$$Y_{ist} = \alpha + \beta_1 AnyTreat_i + \gamma X_{i0} + \delta_s + \lambda_t + \varepsilon_{ist} \quad (2)$$

Second, we augment this with an indicator for automatic payroll deductions (T2–T4):

$$Y_{ist} = \alpha + \beta_1 AnyTreat_i + \beta_2 AutoDeductions_i + \gamma X_{i0} + \delta_s + \lambda_t + \varepsilon_{ist} \quad (3)$$

Finally, we add an indicator for rewards (T3–T4):

$$Y_{ist} = \alpha + \beta_1 AnyTreat_i + \beta_2 AutoDeductions_i + \beta_3 Rewards_i + \gamma X_{i0} + \delta_s + \lambda_t + \varepsilon_{ist} \quad (4)$$

where $AnyTreat_i$ = 1 if worker i was assigned to any treatment (T1–T4), 0 otherwise; $AutoDeductions_i$ = 1 if assigned to T2–T4, 0 otherwise; and $Rewards_i$ = 1 if assigned to T3–T4, 0 otherwise.

In this nested setup, β_1 corresponds to the effect of encouragement-only (T1). β_2 captures the incremental impact of automatic payroll deductions, while β_3 captures the incremental impact of rewards. The total effect of the auto-only arm (T2) is $\beta_1 + \beta_2$, and the total effect of the reward arms (T3/T4) is $\beta_1 + \beta_2 + \beta_3$.

2. Impacts on attendance and turnover

We estimate the impact of the savings plan on workplace outcomes such as daily presence in the factory. The outcome is a binary variable that equals 1 if a worker is present on a given day, and 0 if the worker has left the factory, is absent, or on leave. We use administrative data spanning six months of the pre-intervention period and 6–12 months of the post-intervention period.
We estimate panel Difference-in-Differences (DiD) models of the following form, where treatment features are added step-wise:

$$Y_{it} = \beta_1(AnyTreat_i \times Post_t) + \beta_2 (AutoDeduct_i \times Post_t) + \beta_2 (Rewards_i \times Post_t) + \gamma X_{i0} + \eta_i + \psi_t + u_{it} \quad (5)$$

Where: Y_it is an indicator for whether worker i is present in the factory on day t, Post_t = 1 if the observation is from the post-intervention period, 0 otherwise, η_i denotes worker fixed effects, ψ_t = date fixed effects. The coefficient γ captures the causal effect of being offered a savings plan on the probability of being present in the factory.
In this framework, β_1 captures the post-intervention effect of being offered any savings product (encouragement-only), β_2 captures the incremental effect of automatic payroll deductions, and β_3 captures the incremental effect of rewards.

Finally, we estimate the impact of the savings scheme on worker turnover using data from the 6–12-month post-intervention period depending on the rolling intervention start date (phase). We construct a balanced panel of workers and define turnover as a binary indicator: equal to 0 until the worker exits, and 1 from the date of exit through the end of the study period. The specification includes date fixed effects, phase fixed effects, and baseline demographic controls, with standard errors clustered at the worker level.

$$Turnover_{it} = \alpha + \beta_1 AnyTreat_i + \beta_2 AutoDeductions_i + \beta_3 Rewards_i + \gamma X_{i0} + \psi_t + \varphi_p + u_{it} \quad (6)$$

Where, $Turnover_{it}$ t = 1 if worker i has exited by day t, 0 otherwise, $AnyTreat_i$, $AutoDeductions_i$, and $Rewards_i$ denote treatment assignments, X_{i0} indicate a set of baseline controls, ψ_t and φ_p denote date and phase fixed effects.

VII. Results

1. Savings take-up

At Stage 1, workers were informed about which treatment group they were assigned to and were then asked about their interest in enrolling in the employer-enabled savings plan. If they expressed interest, they were asked to bring necessary documents to enroll.

Take-up of the employer-enabled savings products remained modest across all treatment groups, with about 22% of workers enrolling (Table 2). Importantly, the addition of rewards did not change this pattern. The simplest intervention—offering a BSBD account with encouragement to start an RD (Treatment 1)—saw about 21% enrollment, while the most generous package, which added both a retention reward and an attendance reward (Treatment 4), only slightly increased take-up to 24%. Treatments 2 and 3, which added automatic deposits and standing instructions, with or without a retention reward, showed similarly limited differences in take-up (23% and 21%, respectively). This suggests that the underlying barriers to participation—reluctance to open new accounts and uncertainty about job continuity—outweighed the appeal of financial incentives.

In Table 2, across treatments, a larger share of women than men consistently reported being "never interested" (42.1% of men vs 53.8% of women). Women were also more likely than men to drop out after initially showing interest. On average, across treatment groups, 29.1% of women vs 18.4% of men refused later. Overall, 39.5% of men vs 17.2% of women successfully enrolled. While the proportions fluctuate slightly across the four treatments, the gender pattern is strikingly consistent. Men are more likely to enroll. Women are more likely to either not be interested or drop out after initial interest. We also find that migrant workers have a slightly higher take-up of the savings product (23.8%) than non-migrants (19.9%).

Table 2: Participation in savings scheme across treatment groups and gender

	Never Interested (%)			**Interested Initially, Refused Later (%)**			**Enrolled (%)**			
Treatment group	Men	Women	All	Men	Women	All	Men	Women	All	N
1	50	56.06	**54.76**	16.67	26.52	**24.40**	33.33	17.42	**20.83**	168
2	37.21	58.33	**53.14**	18.6	25.76	**24.00**	44.19	15.91	**22.86**	175
3	45.95	53.44	**51.79**	18.92	29.77	**27.38**	35.14	16.79	**20.83**	168
4	36.11	47.41	**45.03**	19.44	34.07	**30.99**	44.44	18.52	**23.98**	171
Total	42.11	53.77	**51.17**	18.42	29.06	**26.69**	39.47	17.17	**22.14**	682

Among men who were never interested, the most common reasons for refusal were either having existing savings (~29%) or not having enough to save (~28%). These same factors also accounted for a substantial share of women's refusals at the initial stage. However, among women, a larger share (39%) reported that their reluctance stemmed from plans to leave the

factory job, which discouraged them from committing to the savings plan. While close to only 5% of women anticipated that their household members would not approve of them enrolling in the savings plan, around 12% still wanted to discuss the matter with them, which was not a cause of apprehension among men. Far fewer, and only 3% of men indicated that they either needed to consult their family or expected that their family would not allow them to participate.

Among those who had initially expressed interest but later refused, family disapproval was by far the most common reason—affecting 29% of men and 62% of women. Around one-fifth of both men and women eventually refused because they planned to leave the factory job. For men, a significant share (32%) gave no clear reason, which also included cases where they repeatedly forgot or failed to bring required documents until enrolment closed. Document issues were also cited explicitly by about 11% of men and 5% of women.

Table 3: Reasons for refusal of participation in the savings plan

Reason for Refusal	**Never Interested (%)**		**Interested Initially, Refused Later (%)**	
	Men (N = 64)	Women (N = 290)	Men (N = 28)	Women (N = 154)
Plan to leave factory job	21.88	38.97	25.00	22.08
Already have savings (and/or instrument)	29.69	25.17	3.57	12.99
Cannot afford to save	28.12	25.52	7.14	6.49
Want to discuss with HH members	1.56	12.41	NA	NA
HH member(s) disapprove	1.56	5.52	28.57	62.34
Issue with documents	NA	NA	10.71	5.19
No reason/ conclusive response	25.00	10.00	32.14	7.79

2. Impacts on formal, informal and total savings

We first analyze the impact of the intervention on workers' monthly savings behavior using data from the HFS. Regression estimates are presented in Table 4. We find no effect of Treatment 1, which only encouraged workers to start an RD, but substantial effects of Treatments 2–4, which included automatic deposits. Relative to the control group, workers in Treatment 2 were 20 percentage points more likely to report saving in each month, while those in Treatments 3 and 4 were 19 and 16 percentage points more likely, respectively. Pooling across arms, assignment to any treatment increased the probability of saving by 16 percentage points. On average, 44% of workers in the control group saved in any given month; thus, assignment to any treatment raised the probability of saving by 36% relative to the control mean.

Further disaggregation shows that these effects were driven entirely by the automatic deduction feature, which increased saving rates by 10–12 percentage points, whereas the additional retention and attendance rewards had no detectable impact. To formally assess the contribution of different features, we use linear-combination tests of coefficients. The estimated effect of the auto deductions-only arm (Treatment 2) is18 percentage points ($p = 0.016$), while the effect of

the auto-deductions + rewards arms is also 18 percentage points (p = 0.025)[9]. These results confirm that automatic deductions substantially increased the probability of saving, while the incremental rewards provided no additional impact.

Taken together, these results suggest that while overall enrollment remained low, automatic deductions were highly effective in sustaining savings among those who did take up the product, whereas financial incentives tied to continued factory employment and regular attendance did not alter behavior.

Table 4: Impact of savings scheme on propensity to save in a month

	(1)	(2)	(3)	(4)
Base: Control group				
Treatment 1	0.085			
	(0.080)			
Treatment 2	0.204**			
	(0.079)			
Treatment 3	0.190**			
	(0.082)			
Treatment 4	0.162**			
	(0.079)			
Treatment Arms (T-1234)		0.161**	0.083	0.084
		(0.077)	(0.080)	(0.080)
Auto-Deductions (T-234)			0.101***	0.119***
			(0.035)	(0.043)
Rewards (T-34)				-0.027
				(0.037)
Observations	1347	1347	1347	1347
Control Mean	0.439	0.439	0.439	0.439

Note: Strata variable i.e. gender x marital status included in all regressions. Baseline demographic controls included in all regressions. HFS Month, Round FE and Phase FE included in all regressions. Standard errors in parentheses clustered at the worker level. All the regressions are weighted by inverse probability weights to account for attrition from the surveys. Linear-combination tests: total effect of being in an arm with auto-deductions but no rewards (T2) = $\beta_1 + \beta_2 \approx 0.184$ (p = 0.016) from Col (3); total effect of being in an arm with both auto-deductions and rewards (T3/T4) = $\beta_1 + \beta_2 + \beta_3 \approx 0.175$ (p = 0.025) from Col (4). * p<0.10, ** p<0.05, *** p<0.01

We next examine the impact of the interventions on the amount saved in a month, using log(1 + total monthly savings) as the dependent variable to account for months in which workers reported zero savings (Table 5). Consistent with the extensive margin results, Treatment 1, which only encouraged workers to start an RD, had no effect on savings. By contrast, Treatments 2 and 3, which included automatic deposits with or without a retention reward, showed large and statistically significant increases in savings while the effect of Treatment 4 was not statistically

[9] The estimated effects of T2 and T3/T4 from the pooled specification (using linear combinations) are slightly different from the arm-level regression in column (1) because the pooled model decomposes treatment effects into shared components (encouragement, auto-deductions, and rewards), whereas the arm-level specification directly estimates each treatment dummy relative to control.

significant. Pooling across arms, assignment to any treatment also raised savings (significant at the 10% level).

Decomposing the mechanisms, we again find that the effects are driven entirely by automatic deductions. Workers in Treatments 2–4, which featured auto-deposits, had higher savings relative to the control group. In contrast, the incremental impact of rewards (Treatments 3 and 4) was negative and statistically insignificant. The linear combination of coefficients test results further show that the combined effect of Treatments 2 and 3 was 1.27 log points ($p = 0.044$), while the pooled effect across Treatments 2–4 was 1.16 log points ($p = 0.071$). These estimates suggest approximately a two- to four-fold increase in the amount saved in the auto-deposit treatments compared to the control group.

Table 5: Impact of treatment on the amount of monthly savings

	(1)	(2)	(3)	(4)
Treatment 1	0.675			
	(0.653)			
Treatment 2	1.528**			
	(0.649)			
Treatment 3	1.341**			
	(0.680)			
Treatment 4	0.998			
	(0.642)			
Treatment Arms		1.128*	0.653	0.662
		(0.626)	(0.654)	(0.653)
Auto-Deductions (T-234)			0.615**	0.853**
			(0.286)	(0.345)
Rewards (T-34)				-0.359
				(0.293)
Observations	1347	1347	1347	1347
Control Mean	3.606	3.606	3.606	3.606

Note: Strata variable i.e. gender x marital status included in all regressions. Baseline demographic controls included in all regressions. HFS Month and Round FE included in all regressions. Phase FE included in all regressions. Standard errors in parentheses clustered at the worker level. All the regressions are weighted by inverse probability weights to account for attrition from the surveys. Linear-combination tests: total effect of being in an arm with auto-deductions but no rewards (T2) = $\beta_1 + \beta_2 \approx 1.268$ ($p = 0.044$) from Col (3); total effect of being in an arm with both auto-deductions and rewards (T3/T4) = $\beta_1 + \beta_2 + \beta_3 \approx 1.156$ ($p = 0.71$) from Col (4). * $p<0.10$, ** $p<0.05$, *** $p<0.01$

We next analyze the impacts of the intervention on the type of savings workers reported—whether in formal or informal instruments (Table 6). Results indicate that assignment to any treatment arm had no effect on the likelihood of having formal savings, but automatic deductions significantly increased formal saving. Workers in the auto-deduction arms (Treatments 2–4) were 7–9 percentage points (depending on the specification) more likely to hold any formal savings relative to the control group. Rewards, in contrast, had no incremental impact on formal savings. In the case of informal savings, we find that assignment to any treatment increases the

probability of informal savings in column (1), but this effect is not robust once we disaggregate mechanisms. In the pooled specifications, automatic deductions increased informal saving by 7 percentage points (significant at the 10% level), whereas rewards significantly reduced informal saving by 8 percentage points. Taken together, these findings highlight that the automatic deposit feature facilitated entry into the formal financial system, while also sustaining some level of informal saving.

Table 6: Impact of treatment on formal versus informal savings

	(1)	(2)	(3)
Respondent had any formal savings			
Any treat	0.069	0.003	0.002
	(0.070)	(0.075)	(0.075)
Auto-Deductions		0.086***	0.071*
		(0.031)	(0.039)
Rewards			0.023
			(0.035)
Respondent had any informal savings			
Any treat	0.128*	0.111	0.113
	(0.068)	(0.072)	(0.072)
Auto-Deductions		0.022	0.074*
		(0.032)	(0.039)
Rewards			-0.078**
			(0.034)
Observations	1347	1347	1347

Note: Strata variable i.e. gender x marital status included in all regressions. Baseline demographic controls included in all regressions. HFS Month FE included in all regressions. Phase FE included in all regressions. Standard errors in parentheses clustered at the worker level. All the regressions are weighted by inverse probability weights to account for attrition from the surveys. * p<0.10, ** p<0.05, *** p<0.01

3. Impacts on workplace outcomes: attendance and turnover

Table 7 presents the Difference-in-Differences estimates of the intervention on daily factory presence. Across all specifications, we find no evidence that being offered a savings product affected attendance. The interaction between treatment assignment and the post period is small and statistically insignificant throughout. Adding automatic deductions and rewards do not change this null result. This finding is consistent with earlier results on savings behavior, where rewards did not influence participation or savings take-up; workers were not motivated by the incentives tied to continued factory attendance, and accordingly, these rewards did not translate into improved workplace attendance.

Table 7: Impact of savings scheme on worker attendance

	(1)	(2)	(3)

Any treat # Post	0.00175	-0.0027	-0.0026
	(0.0098)	(0.0118)	(0.0117)
Auto Deductions # Post		0.0013	-0.0092
		(0.0090)	(0.0112)
Rewards # Post			0.0148
			(0.0096)
Constant	0.872***	0.871***	0.871***
	(0.0044)	(0.0045)	(0.0046)
Observations	335514	341549	333071
Control Mean (Pre)	0.913	0.915	0.92

Note: Date and worker FE included in all regressions. Inverse Probability Weights included. Standard errors in parentheses clustered at the worker level. * p<0.10, ** p<0.05, *** p<0.01

Table 8 reports the impact of the savings scheme on worker turnover, measured as the probability of exiting the factory. Across all specifications, we find no statistically significant effects of treatment on the worker turnover from the factory. We note that workers who already expected to stay longer may have been more likely to sign up for the scheme (self-selection), however, workers were not motivated to extend tenure because of promised incentives for retention and attendance.

Table 8: Impact of savings scheme on worker turnover

	(1)	(2)	(3)
Any treatment	-0.0394	-0.0135	-0.0136
	(0.0406)	(0.0452)	(0.0451)
Auto Deductions		-0.0335	-0.0440
		(0.0266)	(0.0312)
Rewards			0.0161
			(0.0263)
Constant	0.589***	0.588***	0.589***
	(0.126)	(0.123)	(0.124)
Observations	247494	247494	247494
Control Mean (Post)	0.241	0.247	0.236

Baseline demographic controls and phase FE included in all regressions. Date FE included in all regressions. Standard errors in parentheses clustered at the worker level. * p<0.10, ** p<0.05, *** p<0.01

Discussion

Our findings highlight both the promise and the limits of workplace-based savings interventions in low-wage labor markets. The evidence shows that automatic payroll deductions were highly effective in increasing savings, suggesting that workers benefit from default mechanisms that reduce the cognitive and logistical barriers to financial discipline. By contrast, simple encouragement to save had no impact, underscoring that informational nudges alone are insufficient when liquidity is tight.

Equally important, retention and attendance-linked rewards which were designed to strengthen workers' commitment to both the savings product as well as continued employment and regular attendance, had no detectable effects. This aligns with survey evidence that workers were not motivated by delayed or employer-controlled incentives. Many workers perceived these incentives as not good enough to continue working, particularly in an environment where voluntary exits are common due to low wages and difficult working conditions. Taken together, the results suggest that employers can play a valuable role in facilitating worker savings through mechanisms like automatic deductions, but that tying financial products to retention or attendance incentives may not further make an impact. Future research should further explore how workplace savings programs can balance commitment features with flexibility, particularly for women, who face additional household-level constraints on financial decision-making as well as frequent exits from labour market.

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