The Reserve Army or the Protestant Ethic

Experimental Evidence of Unemployment Pressure and Work Ethics*

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May 5, 2026

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Abstract

We conduct a field experiment in a Chinese manufacturing firm to test two foundational theories of worker effort: Marx's "reserve army" thesis emphasizes external labor market pressure, while Weber's Protestant ethic highlights internalized work values. Production workers are randomly assigned to receive labor market forecasts of rising unemployment, messages promoting work ethics and diligence, both interventions combined, or no intervention. The labor market information treatment shifts beliefs toward weaker outside options and increases hours worked, but reduces hourly productivity and raises self-reported pressure. The work ethics treatment, by contrast, does not increase hours but raises hourly productivity and reduces operational penalties. The results reveal a sharp distinction between the quantity and quality margins of worker effort: external pressure expands labor supply but impairs effectiveness, while internalized values improve the productivity of each hour worked.

Keywords: worker productivity, labor supply, efficiency wages, work ethics, beliefs, information intervention

JEL Codes: J24, J31, M54, C93, D83, Z13

*We thank [acknowledgments]. This study was pre-registered at [registry, ID number]. The experimental protocol was approved by [IRB institution, approval number].

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"The industrial reserve army, during the periods of stagnation and average prosperity, weighs down the active labour army; during the periods of over-production and paroxysm, it holds its pretensions in check."

—Karl Marx, *Capital*, Vol. I (1867)

"The rosy blush of its laughing heir, the Enlightenment, seems also to be irretrievably fading, and the idea of duty in one's calling prowls about in our lives like the ghost of dead religious beliefs."

—Max Weber, *The Protestant Ethic and the Spirit of Capitalism* (1905)

1 Introduction

Why do workers exert effort? In canonical efficiency-wage models, workers exert effort because unemployment functions as a worker discipline device (Shapiro and Stiglitz, 1984). This idea is reminiscent of Karl Marx's "reserve army" argument that the threat of replacement by jobless competitors keeps workers' effort high through fear. In sociological accounts associated with Max Weber, by contrast, effort is sustained by norms that attach moral value to diligence and responsibility, and the rise of capitalism hinges on such moral obligation cultivated through religious and cultural institutions.

This motivates a central question in labor economics of whether effort is primarily sustained by external pressure or by internalized values. These mechanisms have different implications. The former implies that a weaker outside option should raise effort. The latter implies that managerial and organizational practices shaping job meanings may improve performance on top of economic incentives. Yet there is no empirical evidence to date that cleanly compares these two mechanisms.

This paper provides such evidence through a field experiment conducted in a Chinese manufacturing firm. Production workers are randomly assigned to one of four groups: a labor market information group that receives professional forecasts about rising unemployment and job scarcity, a work ethics group that receives messages emphasizing diligence and pride in work, a combined group that receives both interventions, and a control group that receives no intervention. This experimental design unites themes from the Marxian emphasis on *discipline through external pressure* with the Weberian emphasis on *discipline through internalized values* and provides novel evidence on the behavioral foundations of worker effort.

The results point to a sharp distinction between the labor supply margin and the productivity margin of worker effort. The labor market information treatment increases hours worked but lowers hourly productivity, reduces total wages, and raises perceived pressure. Workers under

this treatment exert more effort on the visible margin of hours worked but accomplish less per unit of time, suggesting stress-induced performance impairment. The work ethics treatment, by contrast, leaves hours worked roughly unchanged while increasing hourly productivity and total wages and reducing workplace penalties. Workers under this treatment do not supply additional hours but produce more per hour, suggesting gains in focus, consistency, and task quality. The combined treatment yields intermediate effects that broadly reflect the two channels partially offsetting each other.

Related Literature. This paper contributes to several strands of the literature. First, the paper offers an empirical contribution to theories of efficiency wages. The theoretical foundation for the labor market pressure channel is the shirking model of Shapiro and Stiglitz (1984), in which unemployment serves as a worker discipline device by raising the cost of job loss. Cappelli and Chauvin (1991) find that plants located in areas with higher local unemployment have lower rates of disciplinary dismissals. Ichino and Riphahn (2005) document that the provision of employment protection increases absenteeism.

Second, a growing body of research studies how information provision shapes labor market outcomes. Card et al. (2012) show that revealing peer salary information affects job satisfaction and search behavior. Altmann et al. (2018) demonstrate that providing job seekers with information about search strategies improves re-employment outcomes. Belot et al. (2019) find that tailored occupational recommendations broaden job search. These studies focus on job seekers; the question of how labor market information affects the behavior of employed workers within firms remains open. Meanwhile, Roussille (2021) emphasize the role of the "ask gap" in perpetuating gender pay inequality, providing evidence that womens lower salary demands contribute significantly to wage disparities and demonstrating how information on appropriate salary expectations can mitigate this gap. Collectively, these studies underscore the role of targeted information in shaping labor market behavior, job search strategies, and wage negotiation outcomes.

Third, behavioral factors such as beliefs, aspirations, and perceived returns to effort play a critical role in workplace and labor market behavior. Kaur et al. (2025) document how financial stress reduces worker productivity, illustrating how economic concerns influence individual effort. Further exploring the influence of psychological factors, Weber et al. (2022) review evidence on subjective inflation expectations, highlighting systematic biases and heterogeneity in beliefs among households and firms. Relatedly, Kumar et al. (2023) show that macroeconomic uncertainty diminishes firm-level investment, hiring, and pricing activities, while Coibion et al. (2024) demonstrate how uncertainty leads households to reduce consumption. Focusing on inflation expectations, Savignac et al. (2024) and Ropele et al. (2024) find that dispersion

in beliefs exacerbates resource misallocation and weakens the link between inflation and wage adjustments. Together, these studies highlight how cognitive biases and economic narratives shape decision-making at both the worker and firm levels.

Lastly, economic fluctuations further complicate worker behavior and well-being, particularly during business cycles. Di Tella et al. (2001) and Aghion et al. (2016) find that self-reported well-being deteriorates during periods of high unemployment, reflecting the psychological toll of macroeconomic downturns. Pezold et al. (2023) extend this discussion by showing that labor market tightness increases unionization efforts, particularly during periods of economic stress. These findings underscore the interplay between macroeconomic conditions, worker psychology, and collective labor behavior, highlighting the broader implications of economic cycles on workforce dynamics.

2 Experimental Design and Data

2.1 Setting

We partner with a chemical manufacturing firm in China that operates two production plants, one in Quzhou, a city in Zhejiang Province, and the other in Yingkou, a city in Liaoning Province. The firm employs more than 500 production workers who perform tasks on assembly and processing lines. Compensation depends on the workers position. In a minority of jobs (about 35 percent), workers are paid based on hours worked. In the remaining jobs (about 65 percent), workers are paid under an individual piece-rate system tied to their own output. In addition, workers may receive referral bonuses for recommending new hires and may incur deductions for quality-related issues in their individual output, lateness, or early departure. The firm maintains detailed monthly administrative records for each worker, including working hours, earnings, and the components of pay.

This setting has several features that make it well-suited for our study. First, individual productivity is measurable: the firm tracks worker-level monthly records on hours worked, earnings, and the components of pay, allowing us to construct consistent measures of labor supply, compensation, and an earnings-based measure of hourly performance. Second, the piece-rate component of compensation provides a direct link between effort and pay, so productivity changes are reflected in earnings. Third, the firm's penalty system records operational errors (e.g., equipment damage, quality defects) and attendance infractions (e.g., tardiness, early departure), providing behavioral measures beyond output.

2.2 Randomization and Treatment Arms

The study sample consists of 506 production workers. After completing a baseline survey, workers were assigned to one of four groups using a rerandomization procedure designed to ensure balance across all pre-intervention observables (demographics, job characteristics, baseline survey outcomes, and baseline measures of work performance).

(1) *Labor Market Information* ($n = 134$): Workers received two rounds of messages containing professional forecasts of national and local labor market conditions. The forecasts predict increasing unemployment and declining vacancies. The goal was to increase the salience of labor market slack and job competition—the "reserve army" mechanism.

(2) *Work Ethics* ($n = 134$): Workers received two rounds of messages highlighting the importance of work ethics. These messages focused on promoting values such as diligence, responsibility, and productivity in the workplace. The goal was to increase the salience of internalized work values—the Weberian mechanism.

(3) *Combined* ($n = 134$): Workers received both the labor market information and work ethics messages, delivered in the same format as the individual treatment arms.

(4) *Control* ($n = 104$): Workers received no intervention.

The unequal allocation across arms reflects a deliberate design choice to over-sample treatment groups relative to the control, maximizing statistical power for pairwise comparisons between each treatment and control.[1]

2.3 Intervention Protocol

We field a baseline survey, deliver an online information intervention to treated workers, and then administer a follow-up survey one week after the intervention.

Baseline Survey. Prior to the intervention, all 506 recruited workers complete a baseline survey measuring three dimensions: (i) job satisfaction, elicited on a 1–5 Likert scale; (ii) self-reported effort, also on a 1–5 scale; and (iii) perceived labor market tightness, measured through workers' beliefs about the number of job postings per job seeker, the national unemployment rate, and the probability of finding a new job within one month if unemployed. Participants received 15 CNY for completing the survey.

[1]The control group is smaller than each treatment arm. Power calculations conducted prior to the experiment indicated that this allocation is efficient given the primary comparisons of interest.

Treatment delivery. Interventions were delivered through a secure online platform accessible to all participants. Each treatment consisted of two rounds of messages. After each round, workers completed a brief feedback questionnaire assessing their understanding of and engagement with the content. These questionnaires serve both to promote attention and to measure the intervention's immediate effects on beliefs and attitudes. Workers received electronic payments upon completing each questionnaire.

Follow-Up Survey. One week after the final treatment round, all workers completed a follow-up survey. This survey repeated the baseline questions on job satisfaction, perceived effort, and labor market beliefs, allowing us to study changes in these outcomes. It also elicited behavioral outcomes, such as quit intentions, job-search intentions, and wage negotiation behavior, perceived stress (on a 0–10 scale), and self-reported happiness (on a 0–10 scale). Attendance patterns, including tardiness and absenteeism, were also measured to evaluate changes in workplace behavior. Workers received 20 CNY for completing the follow-up survey.

2.4 Administrative Data

Our primary outcome data come from the firm's administrative personnel records, which provide monthly observations at the worker level. The key variables are: hours worked (total monthly hours, including overtime), production wages (piece-rate earnings directly tied to individual output), total wages (production wages plus supplementary payments such as condition subsidies, referral bonuses, seniority bonuses, minus penalties), operational penalties (fines for quality defects, equipment damage, or procedural errors), attendance penalties (fines for tardiness, absenteeism, or early departure). We construct hourly wage as the ratio of production wages to hours worked, capturing output per unit of time.

2.5 Summary Statistics

Table **??** presents summary statistics. Panel A reports workers' demographic characteristics, such as age, gender, marital status, education, whether the worker is local, rural hukou status, ethnicity, and Party membership. The average worker is 43 years old, 50% are female, 84% are married, and 48% hold local hukou status. Panel B reports job characteristics, such as whether the worker is paid under piece rates (versus time rates), plant indicator, team-leader status, and tenure since year of hire. Panel C reports baseline survey responses, and Panel D reports pre-treatment administrative performance measures.

Table 1: Baseline Characteristics by Treatment Group

Variable	**Group1**	**Group2**	**Group3**	**Control**	***p*-value**
Age	42.53	42.68	43.10	44.00	0.66
	(7.56)	(7.39)	(7.19)	(8.46)	
Female	0.50	0.51	0.54	0.43	0.93
	(0.50)	(0.50)	(0.50)	(0.50)	
Married	0.85	0.88	0.81	0.79	1.30
	(0.36)	(0.33)	(0.39)	(0.41)	
Localcity	0.48	0.48	0.49	0.47	0.03
	(0.50)	(0.50)	(0.50)	(0.50)	
Rural	0.78	0.76	0.73	0.70	0.62
	(0.42)	(0.43)	(0.45)	(0.46)	
Han Chinese	0.94	0.96	0.92	0.94	0.68
	(0.24)	(0.20)	(0.28)	(0.23)	
Party member	0.06	0.02	0.06	0.06	1.06
	(0.24)	(0.15)	(0.24)	(0.23)	
Educ_PrimaryJunior	0.73	0.74	0.72	0.71	0.12
	(0.44)	(0.44)	(0.45)	(0.46)	
Educ_HighSchoolVoc	0.22	0.20	0.20	0.24	0.14
	(0.41)	(0.40)	(0.40)	(0.43)	
Educ_CollegePlus	0.05	0.06	0.08	0.06	0.24
	(0.22)	(0.23)	(0.27)	(0.23)	
Piecerate	0.66	0.60	0.64	0.66	0.34
	(0.48)	(0.49)	(0.48)	(0.48)	
Quzhou	0.46	0.45	0.37	0.45	0.79
	(0.50)	(0.50)	(0.49)	(0.50)	
Teamleader	0.09	0.11	0.08	0.12	0.55
	(0.29)	(0.32)	(0.27)	(0.33)	
Tenure	3.73	3.43	3.66	4.01	0.52
	(3.22)	(2.93)	(3.86)	(3.93)	
UERbelief	0.33	0.38	0.32	0.38	0.46
	(0.47)	(0.49)	(0.47)	(0.49)	
Ideal effort	9.20	9.04	9.19	9.15	0.29
	(1.52)	(1.47)	(1.54)	(1.26)	
Pressure	6.43	5.91	6.57	6.22	1.08

Table 1: Baseline Characteristics by Treatment Group (continued)

Variable	**Group1**	**Group2**	**Group3**	**Control**	F**-value**
	(3.03)	(3.03)	(2.98)	(2.99)	
Perceived effort	8.95	8.96	8.86	9.04	0.24
	(1.33)	(1.32)	(1.88)	(1.38)	
Vacation sacrifice	3.63	3.60	3.71	3.54	0.33
	(1.28)	(1.31)	(1.29)	(1.30)	
Happiness	7.78	8.08	7.69	7.82	0.60
	(2.45)	(2.28)	(2.53)	(2.21)	
Observations	120	124	118	89	

Notes: This table reports baseline characteristics by treatment status. Means are shown in the first row for each variable, with standard deviations in parentheses in the second row. The final column reports the F-value for equality across groups.

3 Main Results

3.1 Empirical Specification

We estimate the treatment effects using a difference-in-differences specification:

$$Y_{it} = \alpha + \sum_{g=1}^{3} \beta_g \left(\mathbb{1}[G_i = g] \times Post_t \right) + \sum_{g=1}^{3} \gamma_g \mathbb{1}[G_i = g] + \Gamma' X_i + \lambda_t + \delta_{s(i)} + \varepsilon_{it}, \tag{1}$$

where Y_{it} is the outcome variable for worker i at time t; $G_i \in \{1, 2, 3\}$ denotes treatment group membership (1 = Labor Market Info, 2 = Work Ethics, 3 = Combined, with the control group 0 = Control being the omitted category); $Post_t$ indicates the post-treatment period. The vector X_i includes control variables such as individual characteristics (e.g., age, education) and job characteristics (e.g., job type, experience). We include time fixed effects λ_t and production unit fixed effects $\delta_{s(i)}$.

The coefficients of interest are β_1, β_2, and β_3, which capture the treatment effects of each treatment, identified through the differential change in outcomes for each treatment group relative to the control group from the pre-treatment to the post-treatment period. Standard errors are clustered at the worker level to account for serial correlation within individuals.

3.2 Effects on Beliefs and Intended Effort

Table 2 reports treatment effects on subjective beliefs and intended effort (Columns 1–2) alongside administrative performance outcomes (Columns 3–5).

Beliefs about unemployment. Column (1) reports effects on unemployment expectations. The dependent variable, *urate belief*, is constructed from the question: "How do you think the national unemployment rate will change this year?" with response options of −10%, −5%, 0%, 5%, and 10%. We code *urate belief* = 1 if the respondent chooses 5% or 10%, and *urate belief* = 0 otherwise. The labor market information treatment increases the probability of expecting rising unemployment by 27.4 percentage points, confirming that the intervention successfully shifted beliefs. In contrast, the work ethics treatment has no significant effect on labor market beliefs, indicating that these workers hold similar labor marker perceptions to the control group. The combined treatment produces a shift similar in magnitude to the information-only treatment. This pattern validates the first stage of our design: the labor market information intervention indeed updated beliefs about unemployment risk, while the work ethics intervention did not contaminate the belief channel.

Intended effort. Column (2) examines self-reported ideal effort. Only the work ethics group exhibits a statistically significant increase, suggesting that the values-based intervention raised workers' aspirational effort level. The effect of the combined group is only about half and is not precisely estimated. The labor market information treatment shows no significant effects on intended effort. This is consistent with the design that the work ethics intervention operates through an intrinsic motivation channel.

3.3 Effects on Administrative Performance

Hours worked. Column (3) reports effects on log monthly hours. The labor market information treatment increases hours by 0.077 log points ($\approx$ 8%). This is consistent with the disciplinary prediction of the efficiency wage model: workers who perceive greater labor market slack work harder. The work ethics group shows no significant change in hours, and the combined group shows a modest increase.

Monthly and hourly production wages. Columns (4) and (5) reveal the central finding. Despite working longer hours, labor market information workers exhibit 14.3% lower hourly efficiency, and as a result, earn 6.6% lower production wages. This combination of more hours,

less output per hour, and lower total piece-rate earnings is consistent with the hypothesis that the stress-induced decline in effectiveness dominates the increase in labor supply.

By contrast, the work ethics group achieves 6.8% higher hourly efficiency with no increase in hours, and hence 7.4% higher production wages. These workers produce more value per unit of time, suggesting that the ethics training helps participants improve the quality or value of their work output rather than longer hours.

Table 2: Main Treatment Effects: Beliefs, Effort, and Administrative Performance

	(1) UER belief	(2) Ideal effort	(3) Log hours	(4) Log production wage	(5) Log hourly production efficiency
Group1 × After	0.274***	0.039	0.077**	-0.066**	-0.143***
	(0.094)	(0.311)	(0.032)	(0.030)	(0.034)
Group2 × After	0.047	0.673**	0.007	0.074**	0.068**
	(0.087)	(0.305)	(0.032)	(0.031)	(0.027)
Group3 × After	0.221**	0.353	0.032	-0.039	-0.071***
	(0.091)	(0.320)	(0.030)	(0.027)	(0.027)
Group1	-0.058	-0.061	0.008	0.032	0.024
	(0.070)	(0.205)	(0.030)	(0.031)	(0.028)
Group2	-0.009	-0.131	-0.008	0.005	0.013
	(0.070)	(0.196)	(0.032)	(0.031)	(0.029)
Group3	-0.050	-0.064	0.052*	0.039	-0.014
	(0.070)	(0.207)	(0.029)	(0.031)	(0.029)
Controls	Yes	Yes	Yes	Yes	Yes
Workshop FE	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes
Control group mean	0.351	8.877	5.544	8.699	3.155
Observations	844	844	844	844	844
Adjusted R-squared	0.016	0.047	0.298	0.408	0.562

Notes: The table reports estimates from Equation (1). Columns (1)–(2) use survey outcomes; Columns (3)–(5) use administrative data. All wage and efficiency variables are in logarithms. Standard errors clustered at the worker level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

3.4 Supplementary Administrative Outcomes

Table 3 extends the analysis to total wages (inclusive of bonuses and net of penalties), overall hourly efficiency, operational penalties, and attendance penalties.

Total wages and hourly efficiency. Column (1) shows that total wages fall by 6.8% for the labor market information group and rise by 8.4% for the work ethics group. Overall hourly efficiency (Column 2) declines by 14.5% for the market information group and improves by 7.7% for the work ethics group. The combined group shows a 6.0% decline in hourly efficiency. These patterns mirror the production-based results.

Operational penalties. Column (3) reports treatment effects on operational penalties, which capture fines for quality defects, equipment damage, or procedural errors. The work ethics group reduces operational penalties by approximately 91%, a large and economically significant reduction consistent with improved focus and fewer careless mistakes. The labor market information group increases operational penalties by 60%, consistent with the hypothesis that anxiety-driven effort is error-prone. The combined group shows no significant change.

Attendance penalties. Column (4) examines attendance-related fines. The work ethics group reduces attendance penalties by 54%, and the combined group achieves a 61% reduction. The labor market information group shows no significant effect. This suggests that the values-based intervention improves workplace discipline—timeliness, attendance, and adherence to schedule—independently of productivity effects.

These findings underscore the trade-offs between expanding work effort and improving productivity quality when implementing different informational interventions.

Table 3: Treatment Effects on Total Compensation, Efficiency, and Penalties

	(1)	(2)	(3)	(4)
	Log wage	Log hourly efficiency	Log operation penalty	Log attendance penalty
Group1 × After	-0.068**	-0.145***	0.604**	-0.088
	(0.031)	(0.034)	(0.286)	(0.258)
Group2 × After	0.084***	0.077***	-0.912***	-0.544**
	(0.031)	(0.026)	(0.239)	(0.247)
Group3 × After	-0.028	-0.060**	0.159	-0.613**
	(0.027)	(0.027)	(0.285)	(0.246)
Group1	0.029	0.021	-0.301*	0.005
	(0.031)	(0.027)	(0.165)	(0.208)
Group2	0.007	0.015	0.060	0.187
	(0.031)	(0.029)	(0.188)	(0.219)
Group3	0.034	-0.018	-0.096	0.187
	(0.031)	(0.028)	(0.180)	(0.226)
Controls	Yes	Yes	Yes	Yes
Workshop FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
Control group mean	8.734	3.189	0.626	0.602
Observations	844	844	844	844
Adjusted R-squared	0.374	0.551	0.169	0.080

Notes: The table reports estimates from Equation (1). All dependent variables are in logarithms. Operational penalties include fines for quality defects or procedural errors. Attendance penalties include fines for tardiness or absenteeism. Standard errors clustered at the worker level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

3.5 Potential Threats to identification

The identifying assumption is the standard parallel trends condition: absent the intervention, outcomes in each treatment group would have evolved in parallel with the control group. Several potential concerns warrant discussion.

First, spillovers: workers in different treatment groups work alongside one another in the same plants. If treated workers share information with control workers, treatment effects would be attenuated (biasing toward zero).

Second, Hawthorne effects: all groups, including controls, completed the baseline and follow-up surveys, reducing differential attention effects across arms. The treatment-specific content was delivered through individual online channels, minimizing visibility differences.

Third, attrition: we examine whether treatment assignment predicts survey completion or exit from the administrative data.

3.6 Mechanism

The main results establish that the two interventions produce opposite effects on productivity. We now use survey-based outcomes to examine the psychological channels underlying these effects. Table 4 reports treatment effects on perceived pressure, self-assessed effort, willingness to sacrifice vacation, and self-reported happiness.

Perceived pressure. Column (1) shows that the labor market information treatment significantly increases perceived pressure by 1.09 points on a 0–10 scale. Neither the work ethics treatment nor the combined treatment significantly affects perceived pressure. This result is consistent with the interpretation that the productivity decline in the market information group is mediated by stress. The null effect for the work ethics group confirms that the values-based intervention does not operate through anxiety.

Self-assessed effort. Column (2) examines self-reported effort on a 0–10 scale. The labor market information group reports a 0.66-point increase, and the combined group reports a 0.57-point increase. The work ethics group shows no significant change. Combined with the administrative results, this pattern reveals a notable disconnect: market information workers *perceive* themselves as working harder, and indeed supply more hours, yet their measured productivity falls. This is consistent with a model in which stress induces effortful but ineffective work, that is, workers substitute quantity for quality of effort.

Willingness to sacrifice vacation. Column (3) measures workers' willingness to forgo vacation time for work on a 1–5 scale. All three treatment groups show significant increases relative to controls: 0.53 points for the market information group, 0.69 points for the work ethics group, and 0.49 points for the combined group. This outcome captures a motivational margin activated by both channels—commitment to work, though through different mechanisms: fear of job loss versus internalized duty.

Happiness. Column (4) reports effects on self-reported happiness (0–10 scale). None of the treatments produces a statistically significant change. The absence of a happiness effect in the market information group, despite the large increase in stress, suggests that pressure and happiness may operate on different dimensions of well-being, or that the one-week post-treatment survey does not capture longer-run effects.

Interpretation. Taken together, the survey evidence identifies two distinct psychological pathways. The labor market information intervention operates through a *pressure channel*: it raises economic pressure and perceived effort but reduces the effectiveness with which effort translates into output. The work ethics intervention operates through an *value channel*: it raises intrinsic motivation and commitment without inducing stress, producing more efficient work. The combined treatment reflects a blend of both: it activates the effort and commitment margins of both channels, but the opposing effects on productivity (negative from pressure, positive from values) partially offset each other, consistent with approximate additivity of the two mechanisms.

Table 4: Mechanisms: Psychological and Attitudinal Responses

	(1) Pressure	(2) Perceived effort	(3) Vacation sacrifice	(4) Happiness
Group1 × After	1.087***	0.660**	0.534**	-0.292
	(0.417)	(0.274)	(0.217)	(0.442)
Group2 × After	-0.098	0.438	0.691***	0.277
	(0.464)	(0.277)	(0.207)	(0.374)
Group3 × After	0.081	0.569*	0.487**	-0.023
	(0.449)	(0.317)	(0.211)	(0.452)
Group1	0.130	-0.149	0.132	-0.192
	(0.431)	(0.193)	(0.182)	(0.328)
Group2	-0.363	-0.113	0.056	0.067
	(0.438)	(0.190)	(0.183)	(0.310)
Group3	0.262	-0.291	0.175	-0.248
	(0.433)	(0.229)	(0.187)	(0.330)
Controls	Yes	Yes	Yes	Yes
Workshop FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
Control group mean	6.637	8.895	3.556	7.398
Observations	844	844	844	844
Adjusted R-squared	0.094	0.051	0.095	0.068

Notes: The table reports estimates of from equation (1) using survey-based outcomes. Pressure and Perceived Effort are measured on 0–10 scales. Vacation Sacrifice is measured on a 1–5 scale. Happiness is measured on a 0–10 scale. Standard errors clustered at the worker level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

4 Heterogeneity

We now examine heterogeneous treatment effects along several: gender, age, pay structure, and initial beliefs about unemployment.

4.1 Gender

Table 5 reports treatment effects separately for female and male workers. The labor market information treatment induces a large increase in hours among female workers (0.164 log points) compared to a small and insignificant increase among males. However, this increased effort among women is accompanied by a 17.1% decline in hourly efficiency, while the decline for men is smaller (10.5%). The pattern suggests that female workers are more responsive to the pressure channel by working longer at a disproportionate cost to productivity.

For the work ethics treatment, there seems to be no significant heterogeneity between male and female workers.

Table 5: Heterogeneous Effects by Gender

	(1) Log production wage	(2) Log hours	(3) Log hourly production efficiency
Group1 × After × female	0.027	0.093*	-0.067
	(0.053)	(0.057)	(0.058)
Group2 × After × female	-0.006	0.002	-0.008
	(0.053)	(0.054)	(0.047)
Group3 × After × female	-0.028	-0.007	-0.021
	(0.046)	(0.054)	(0.050)
TE of Group1 on female	-0.008	0.164***	-0.171***
	(0.035)	(0.041)	(0.039)
TE of Group1 on male	-0.034	0.070*	-0.105**
	(0.041)	(0.040)	(0.043)
TE of Group2 on female	0.100***	0.037	0.064*
	(0.038)	(0.039)	(0.035)
TE of Group2 on male	0.106***	0.034	0.072**
	(0.037)	(0.037)	(0.032)
TE of Group3 on female	-0.002	0.087**	0.089**
	(0.036)	(0.038)	(0.037)
TE of Group3 on male	0.026	0.094**	-0.068*
	(0.029)	(0.039)	(0.035)
Controls	Yes	Yes	Yes
Workshop FE	Yes	Yes	Yes
Month FE	Yes	Yes	Yes
Observations	1832	1832	1832
Adjusted R-squared	0.404	0.237	0.559

Notes: The table reports treatment effects estimated separately for female and male workers. Standard errors clustered at the worker level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

4.2 Age

Table 6 splits the sample at the median age (42 years). Older workers respond more strongly to the labor market information treatment on the hours margin (14.7%) and suffer a larger decline

in hourly efficiency (−13.9%). Younger workers, by contrast, respond more strongly to the work ethics treatment, with a 15.9% improvement in hourly efficiency ($p < 0.05$). These patterns are consistent with a model in which older workers, who may face worse outside options due to age-related labor market frictions, are more susceptible to the pressure channel.

Table 6: Heterogeneous Effects by Age

	(1) Log production wage	(2) Log hours	(3) Log hourly production efficiency
Group1 × After × senior	0.125*	0.147**	-0.022
	(0.067)	(0.067)	(0.073)
Group2 × After × senior	0.044	0.126**	-0.082
	(0.056)	(0.061)	(0.065)
Group3 × After × senior	0.118**	0.159**	-0.041
	(0.055)	(0.071)	(0.062)
TE of Group1 on young	-0.117*	-0.001	-0.117*
	(0.063)	(0.060)	(0.068)
TE of Group1 on senior	0.008	0.147***	-0.139***
	(0.028)	(0.033)	(0.033)
TE of Group2 on young	0.068	-0.067	0.134**
	(0.048)	(0.054)	(0.062)
TE of Group2 on senior	0.112***	0.059*	0.052**
	(0.031)	(0.031)	(0.025)
TE of Group3 on young	-0.082	-0.041	-0.041
	(0.051)	(0.068)	(0.057)
TE of Group3 on senior	0.036	0.118***	-0.083***
	(0.026)	(0.030)	(0.028)
Controls	Yes	Yes	Yes
Workshop FE	Yes	Yes	Yes
Month FE	Yes	Yes	Yes
Observations	1832	1832	1832
Adjusted R-squared	0.410	0.238	0.562

Notes: Young workers are aged 42 or below (at or below the sample median). Old workers are above 42. Standard errors clustered at the worker level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

4.3 Pay Structure

Table 7 separates workers by compensation scheme: piece-rate versus time-rate. Piece-rate workers respond to the labor market information treatment with a large increase in hours (14.4%) and a 15.6% decline in efficiency. Time-rate workers show no significant hours response but benefit more from the work ethics treatment.

This heterogeneity is theoretically informative. Piece-rate workers can immediately translate effort into observable output (and thus income), making the quantity margin particularly salient when they feel pressure. Time-rate workers, whose compensation is less responsive to short-run effort, may benefit more from interventions that improve the *quality* of effort rather than its *quantity*, precisely what the work ethics channel appears to provide.

Table 7: Heterogeneous Effects by Pay Structure

	(1) Log production wage	(2) Log hours	(3) Log hourly production efficiency
Group1 × After × piece-rate	0.022	0.082	-0.060
	(0.056)	(0.061)	(0.054)
Group2 × After × piece-rate	-0.013	0.024	-0.037
	(0.054)	(0.057)	(0.047)
Group3 × After × piece-rate	0.057	0.087	-0.030
	(0.050)	(0.060)	(0.047)
TE of Group1 on piece-rate	-0.012	0.144***	-0.156***
	(0.033)	(0.034)	(0.039)
TE of Group1 on time-rate	-0.035	0.062	-0.096**
	(0.046)	(0.051)	(0.039)
TE of Group2 on piece-rate	0.099***	0.044	0.055*
	(0.035)	(0.035)	(0.030)
TE of Group2 on time-rate	0.112***	0.020	0.092**
	(0.042)	(0.046)	(0.037)
TE of Group3 on piece-rate	0.033	0.119***	-0.086**
	(0.029)	(0.032)	(0.034)
TE of Group3 on time-rate	-0.024	0.032	-0.056*
	(0.042)	(0.051)	(0.034)
Controls	Yes	Yes	Yes
Workshop FE	Yes	Yes	Yes
Month FE	Yes	Yes	Yes
Observations	1832	1832	1832
Adjusted R-squared	0.407	0.242	0.570

Notes: Piece-rate workers (piecerate = 1) have output-based compensation. Time-rate workers (piecerate = 0) have fixed hourly compensation. Standard errors clustered at the worker level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

4.4 Initial Beliefs about Unemployment

Table 8 examines whether treatment effects vary with workers' prior beliefs about unemployment. Workers who entered the experiment with more pessimistic views about the labor market may respond differently to additional negative information than those who were initially optimistic.

Table 8: Heterogeneity: Initial beliefs on unemployment rate

	(1) Log production wage	(2) Log hours	(3) Log hourly production efficiency
Group1 × After × pessimistic	0.122**	0.116*	-0.007
	(0.057)	(0.064)	(0.063)
Group2 × After × pessimistic	0.036	0.043	-0.008
	(0.056)	(0.059)	(0.052)
Group3 × After × pessimistic	0.046	-0.032	0.078
	(0.048)	(0.061)	(0.063)
TE of Group1 on optimistic	-0.010	0.097***	-0.107***
	(0.032)	(0.037)	(0.036)
TE of Group1 on pessimistic	0.117***	0.140***	-0.179***
	(0.051)	(0.033)	(0.053)
TE of Group2 on optimistic	-0.039	-0.000	0.117***
	(0.035)	(0.047)	(0.032)
TE of Group2 on pessimistic	0.084*	0.080	0.004
	(0.044)	(0.050)	(0.034)
TE of Group3 on optimistic	0.030	0.108***	-0.078**
	(0.029)	(0.034)	(0.035)
TE of Group3 on pessimistic	-0.021	0.033	-0.054*
	(0.043)	(0.049)	(0.032)
Controls	Yes	Yes	Yes
Workshop FE	Yes	Yes	Yes
Month FE	Yes	Yes	Yes
Control group mean	8.738	5.564	3.174
Observations	1832	1832	1832
Adjusted R-squared	0.410	0.237	0.561

Notes: The sample is split by workers' baseline beliefs about the national unemployment rate, measured prior to treatment assignment. Standard errors clustered at the worker level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

5 Conclusion

Two classic traditions offer competing explanations for why workers exert effort. This paper uses a field experiment to test two foundational theories of worker motivation: Marx's hypothesis that labor market pressure disciplines workers, and Weber's hypothesis that internalized work values drive productive effort. The results provide causal evidence that both channels are operative, but with sharply different consequences for productivity and worker well-being.

The labor market information treatment successfully shifts beliefs about unemployment and induces workers to supply more hours. However, contrary to the simple efficiency wage prediction, this pressure reduces output per hour, increases operational errors, and elevates stress. Workers under perceived labor market slack work harder in observable ways but less effectively—suggesting that anxiety-driven effort is a poor substitute for focused, quality-oriented work.

The work ethics treatment, by contrast, improves hourly productivity and reduces errors without increasing hours or stress. This intervention operates through an intrinsic motivation channel: it raises the quality of effort rather than its quantity, generating benefits for both workers (higher wages, lower penalties) and the firm (more output per hour).

When both interventions are combined, the positive and negative effects on productivity approximately offset each other, yielding attenuated net impacts. Rather than complementing each other, the two channels operate through distinct psychological pathways whose effects partially cancel. This additivity result has practical implications for organizational design. Firms that pair fear-based messaging with values-based appeals should not expect synergies; the hidden productivity costs of anxiety-driven effort erode the gains from intrinsic motivation. Where the two approaches are used in isolation, the values-based intervention dominates on efficiency grounds.

Several avenues for future research emerge from this study. First, the persistence of these effects beyond the initial observation window deserves investigation: do the productivity benefits of work ethics training decay once the intervention fades, or do they establish lasting changes in work habits? Second, the interaction between intrinsic and extrinsic motivation warrants further study in different institutional settings, particularly in economies with varying levels of labor market regulation and social insurance. Third, the heterogeneous effects by pay structure suggest that the optimal design of motivational interventions depends on the compensation environment, a connection that merits both theoretical and empirical development.

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APPENDICES FOR ONLINE PUBLICATION

I Appendix: Supplementary Tables

I.1 Balance Check

Table A-1: Baseline Characteristics by Treatment Group

Variable	**Group1**	**Group2**	**Group3**	**Control**	***p*-value**
Age	42.53	42.68	43.10	44.00	0.66
	(7.56)	(7.39)	(7.19)	(8.46)	
Female	0.50	0.51	0.54	0.43	0.93
	(0.50)	(0.50)	(0.50)	(0.50)	
Married	0.85	0.88	0.81	0.79	1.30
	(0.36)	(0.33)	(0.39)	(0.41)	
Localcity	0.48	0.48	0.49	0.47	0.03
	(0.50)	(0.50)	(0.50)	(0.50)	
Rural	0.78	0.76	0.73	0.70	0.62
	(0.42)	(0.43)	(0.45)	(0.46)	
Han Chinese	0.94	0.96	0.92	0.94	0.68
	(0.24)	(0.20)	(0.28)	(0.23)	
Party member	0.06	0.02	0.06	0.06	1.06
	(0.24)	(0.15)	(0.24)	(0.23)	
Educ_PrimaryJunior	0.73	0.74	0.72	0.71	0.12
	(0.44)	(0.44)	(0.45)	(0.46)	
Educ_HighSchoolVoc	0.22	0.20	0.20	0.24	0.14
	(0.41)	(0.40)	(0.40)	(0.43)	
Educ_CollegePlus	0.05	0.06	0.08	0.06	0.24
	(0.22)	(0.23)	(0.27)	(0.23)	
Piecerate	0.66	0.60	0.64	0.66	0.34
	(0.48)	(0.49)	(0.48)	(0.48)	
Quzhou	0.46	0.45	0.37	0.45	0.79
	(0.50)	(0.50)	(0.49)	(0.50)	
Teamleader	0.09	0.11	0.08	0.12	0.55
	(0.29)	(0.32)	(0.27)	(0.33)	

Table A-1: Baseline Characteristics by Treatment Group (continued)

Variable	**Group1**	**Group2**	**Group3**	**Control**	F**-value**
Tenure	3.73	3.43	3.66	4.01	0.52
	(3.22)	(2.93)	(3.86)	(3.93)	
UERbelief	0.33	0.38	0.32	0.38	0.46
	(0.47)	(0.49)	(0.47)	(0.49)	
Ideal effort	9.20	9.04	9.19	9.15	0.29
	(1.52)	(1.47)	(1.54)	(1.26)	
Pressure	6.43	5.91	6.57	6.22	1.08
	(3.03)	(3.03)	(2.98)	(2.99)	
Perceived effort	8.95	8.96	8.86	9.04	0.24
	(1.33)	(1.32)	(1.88)	(1.38)	
Vacation sacrifice	3.63	3.60	3.71	3.54	0.33
	(1.28)	(1.31)	(1.29)	(1.30)	
Happiness	7.78	8.08	7.69	7.82	0.60
	(2.45)	(2.28)	(2.53)	(2.21)	
Observations	120	124	118	89	

Notes: This table reports baseline characteristics by treatment status. Means are shown in the first row for each variable, with standard deviations in parentheses in the second row. The final column reports the F-value for equality across groups.

I.2 Sample: Month 3-6

Table A-2: Effects on the Logarithmic Value of Monthly Working Hours

	(1) UER belief	(2) Ideal effort	(3) Log hours	(4) Log production wage	(5) Log hourly production efficiency
Group1 × After	0.274***	0.039	0.116***	-0.020	-0.136***
	(0.094)	(0.311)	(0.028)	(0.026)	(0.029)
Group2 × After	0.047	0.673**	0.034	0.105***	0.070***
	(0.087)	(0.305)	(0.027)	(0.026)	(0.023)
Group3 × After	0.221**	0.353	0.088***	0.013	-0.075***
	(0.091)	(0.320)	(0.027)	(0.023)	(0.025)
Controls	Yes	Yes	Yes	Yes	Yes
Workshop FE	Yes	Yes			
Worker FE			Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes
Control group mean	0.351	8.877	5.564	8.738	3.174
Observations	844	844	1832	1832	1832
Adjusted R-squared	0.016	0.047	0.599	0.736	0.796

Standard errors (clustered at the individual level) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A-3: Effects on the Logarithmic Value of Monthly Working Hours

	(1)	(2)	(3)	(4)
	Log wage	Log hourly efficiency	Log operation penalty	Log attendance penalty
Group1 × After	-0.012	-0.128***	0.581**	-0.302*
	(0.027)	(0.029)	(0.250)	(0.176)
Group2 × After	0.121***	0.087***	-0.831***	-0.564***
	(0.026)	(0.022)	(0.177)	(0.169)
Group3 × After	0.023	-0.065***	0.177	-0.704***
	(0.023)	(0.025)	(0.228)	(0.174)
Controls	Yes	Yes	Yes	Yes
Worker FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
Control group mean	8.771	3.207	0.532	0.526
Observations	1832	1832	1832	1832
Adjusted R-squared	0.710	0.811	0.254	0.210

Standard errors (clustered at the individual level) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

I.3 Log effects of hours

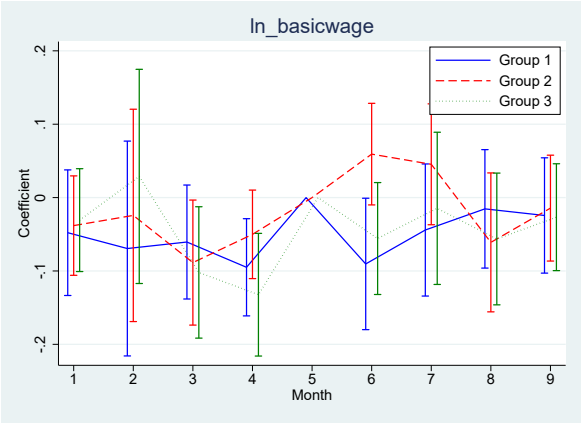
Table A-4: Effects on the Logarithmic Value of Monthly Working Hours

	(1)	(2)	(3)	(4)
	ln_hours_worked	ln_hours_worked	ln_hours_worked	ln_hours_worked
group_1 × after	0.0673	0.0643	0.0632	0.0617
	(0.0458)	(0.0462)	(0.0459)	(0.0463)
group_2 × after	0.0097	0.0074	0.0097	0.0087
	(0.0341)	(0.0345)	(0.0343)	(0.0349)
group_3 × after	0.0360	0.0346	0.0337	0.0334
	(0.0490)	(0.0490)	(0.0492)	(0.0493)
group_1	0.0165	0.0223	-0.0057	-0.0017
	(0.0331)	(0.0300)	(0.0311)	(0.0291)
group_2	0.0019	0.0027	-0.0235	-0.0242
	(0.0312)	(0.0302)	(0.0296)	(0.0293)
group_3	0.0392	0.0375	0.0089	0.0132
	(0.0336)	(0.0314)	(0.0314)	(0.0295)
Control group mean	5.54	5.54	5.54	5.54
N	1977	1977	1977	1977
Month FE	Yes	Yes	Yes	Yes
Workshop FE			Yes	Yes
Controls		Yes		Yes
Adjusted R-squared	0.00	0.09	0.12	0.15

Standard errors (clustered at the individual level) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

I.4 Dynamics

(a)



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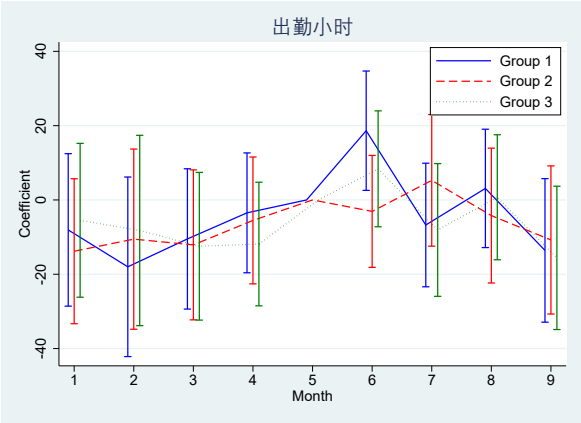

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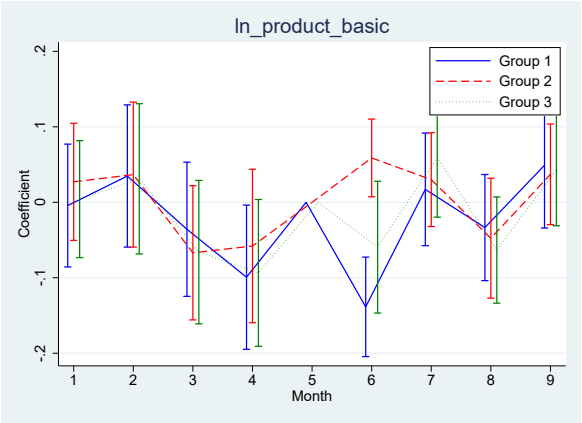

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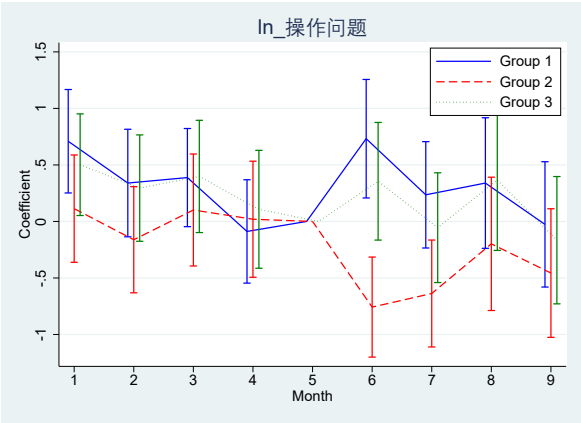

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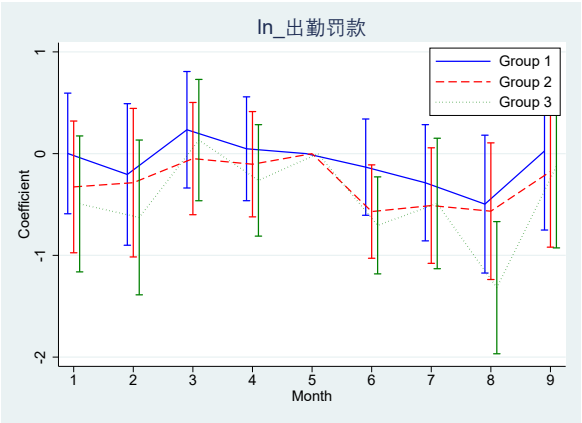

(f)

Figure A-1: Event Study Graph

I.5 Heterogeneity (tables not needed)

Table A-5: Heterogeneity: Married Workers vs. Unmarried Workers

	ln_wage_prod		hours		ln_ProdEff	
	(1)	(2)	(3)	(4)	(5)	(6)
	married	unmarried	married	unmarried	married	unmarried
group_1 × after	-0.0163	-0.1909	23.7348***	19.4410	-0.0987***	-0.1709
	(0.0379)	(0.1644)	(8.2031)	(23.7138)	(0.0294)	(0.1378)
group_2 × after	0.0862**	0.2205**	4.8792	-3.3678	0.0582**	0.2515**
	(0.0351)	(0.0900)	(7.5053)	(20.0786)	(0.0271)	(0.1112)
group_3 × after	-0.0212	0.1780**	12.4590	26.7597	-0.0558	0.1526
	(0.0443)	(0.0836)	(8.1297)	(22.7929)	(0.0371)	(0.1583)
group_1	0.0013	-0.1083	4.4793	-22.3061	-0.0159	-0.0813
	(0.0310)	(0.0963)	(7.8049)	(17.4707)	(0.0275)	(0.0893)
group_2	-0.0407	-0.0083	-9.6015	8.8213	0.0006	-0.1334
	(0.0304)	(0.0883)	(7.3635)	(15.4866)	(0.0297)	(0.0805)
group_3	-0.0250	-0.1358*	8.2598	-21.5093	-0.0501*	-0.0924
	(0.0336)	(0.0801)	(7.9731)	(14.8779)	(0.0299)	(0.0749)
Control group mean	8.73	8.72	267.45	268.19	3.17	3.22
N	1605	372	1605	372	1605	372
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Workshop FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.29	0.20	0.24	0.24	0.51	0.26

Standard errors (clustered at the individual level) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A-6: Heterogeneity: Rural Workers vs. Urban Workers

	ln_wage_prod		hours		ln_ProdEff	
	(1)	(2)	(3)	(4)	(5)	(6)
	rural	urban	rural	urban	rural	urban
group_1 × after	0.0005	-0.2140	34.1152***	-8.5669	-0.1382***	-0.0479
	(0.0392)	(0.1365)	(9.4012)	(15.6083)	(0.0381)	(0.0884)
group_2 × after	0.0948**	0.1108*	3.3485	3.8689	0.0704**	0.1246*
	(0.0388)	(0.0652)	(8.6913)	(13.2257)	(0.0327)	(0.0707)
group_3 × after	0.0140	0.0206	19.4349**	7.7643	-0.0518	0.0660
	(0.0519)	(0.0457)	(9.5744)	(14.7542)	(0.0419)	(0.1172)
group_1	-0.0495	0.0917*	-7.1398	6.4941	-0.0251	0.0111
	(0.0349)	(0.0519)	(8.8924)	(10.6791)	(0.0349)	(0.0624)
group_2	-0.0574*	-0.0692	-15.4068*	9.9766	-0.0070	-0.1306*
	(0.0347)	(0.0578)	(8.0481)	(14.9776)	(0.0346)	(0.0706)
group_3	-0.0596	-0.0455	1.8885	8.9908	-0.0646*	-0.0958
	(0.0382)	(0.0532)	(8.3884)	(13.5284)	(0.0357)	(0.0584)
Control group mean	8.78	8.62	270.63	261.43	3.22	3.10
N	1460	517	1460	517	1460	517
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Workshop FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.22	0.32	0.27	0.19	0.46	0.31

Standard errors (clustered at the individual level) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A-7: Heterogeneity: High-Wage Workers vs. Low-Wage Workers

	ln_wage_prod		hours		ln_ProdEff	
	(1)	(2)	(3)	(4)	(5)	(6)
	high-wage	low-wage	high-wage	low-wage	high-wage	low-wage
group_1 × after	-0.1116*	0.0368	20.7347**	28.6899**	-0.1534***	-0.0662
	(0.0612)	(0.0552)	(9.9767)	(12.2324)	(0.0424)	(0.0585)
group_2 × after	0.0385	0.1650***	-4.1125	7.8496	0.0444	0.1423***
	(0.0327)	(0.0541)	(8.6763)	(11.0359)	(0.0328)	(0.0506)
group_3 × after	-0.0427	0.0794	18.7084*	14.2799	-0.1114***	0.0768
	(0.0578)	(0.0526)	(9.6511)	(12.5743)	(0.0406)	(0.0788)
group_1	-0.0061	-0.0654*	-4.9057	-10.3041	0.0114	-0.0565
	(0.0264)	(0.0353)	(9.3300)	(10.1344)	(0.0360)	(0.0422)
group_2	-0.0167	-0.0589*	-8.6374	-8.5088	0.0225	-0.0546
	(0.0292)	(0.0339)	(8.9605)	(9.7705)	(0.0383)	(0.0427)
group_3	-0.0272	-0.1080***	13.1159	-15.9209	-0.0635*	-0.0718*
	(0.0281)	(0.0361)	(9.4060)	(9.6952)	(0.0367)	(0.0417)
Control group mean	8.95	8.52	270.70	264.73	3.38	3.00
N	1000	977	1000	977	1000	977
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Workshop FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.14	0.13	0.42	0.21	0.42	0.27

Standard errors (clustered at the individual level) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Note: Workers in the top 50% of wages (monthly salary above the average of 6577) are classified as High-Wage Workers, while the rest are classified as Low-Wage Workers.

Table A-8: Heterogeneity: Workers with Higher Attendance vs. Workers with Lower Attendance

	ln_wage_prod		hours		ln_ProdEff	
	(1)	(2)	(3)	(4)	(5)	(6)
	high-hours	low-hours	high-hours	low-hours	high-hours	low-hours
group_1 × after	-0.0556	-0.0289	10.3687	35.2681***	-0.0558*	-0.1530**
	(0.0553)	(0.0651)	(11.0424)	(11.1458)	(0.0334)	(0.0622)
group_2 × after	0.1506***	0.0625	-2.7230	8.0003	0.1480***	0.0408
	(0.0429)	(0.0486)	(10.2021)	(10.0067)	(0.0357)	(0.0487)
group_3 × after	-0.0325	0.0865*	5.3179	31.5386***	-0.0419	0.0114
	(0.0571)	(0.0515)	(10.1605)	(12.0894)	(0.0383)	(0.0869)
group_1	0.0395	-0.0210	11.0506	1.8596	0.0000	-0.0622
	(0.0290)	(0.0462)	(8.6774)	(4.7268)	(0.0289)	(0.0458)
group_2	-0.0331	-0.0599	-0.9473	-0.1745	-0.0196	-0.0778*
	(0.0355)	(0.0426)	(8.6675)	(4.8741)	(0.0350)	(0.0451)
group_3	0.0013	-0.1193**	14.6744*	-3.1443	-0.0381	-0.1219**
	(0.0326)	(0.0521)	(8.8499)	(4.6661)	(0.0320)	(0.0480)
Control group mean	8.79	8.66	309.95	225.27	3.08	3.28
N	995	982	995	982	995	982
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Workshop FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.36	0.23	0.23	0.09	0.55	0.35

Standard errors (clustered at the individual level) in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.01.

Note: Workers in the top 50% of attendance (monthly attendance hours above the average of 274) are classified as Workers with Higher Attendance, while the rest are classified as Workers with Lower Attendance.