Tufts UNIVERSITY | Labor Lab

WOMEN IN FACTORIES ADVANCED TRAINING CENTRAL AMERICA ENDLINE REPORT

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Advanced Training

- Women in Factories (WIF) is an initiative of the Walmart Foundation's Women's Economic Empowerment (WEE) Program.
- The Advanced Training curriculum was developed by CARE International.
- The AT course requires 100 hours of training.
- There are 5 main training units.
- Topics include health and nutrition; functional literacy and personal finance; communication; gender, social status and relationships; and leadership.
- The WIF Advanced Training was introduced in Honduras and El Salvador in 2013.
- The Walmart Foundation's delivery partner in Central America was World Vision.

Research Design

- The impact evaluation was conducted in 11 factories in Honduras and 19 factories in El Salvador.
- Workers participating in training were assigned to one of two training batches.
- The study began with a baseline survey of both batches of workers, supervisors and managers.
- After the baseline, batch 1 was trained.
- Following batch 1 training, workers, supervisors and managers were resurveyed.
- Following the midline, batch 2 was trained.
- The study concluded with an endline survey of workers, supervisors and managers.
- 730 participants completed the first wave survey, 55 completed the second wave survey, 17 completed the third wave survey and 513 completed the fourth wave survey.
- 96 supervisors completed the baseline survey, 50 completed the midline survey and 40 completed the endline survey.
- Six key performance indicators were assessed by workers and their supervisors: late-coming, absenteeism, efficiency, product defects, accidents and separations.
- Data collection was conducted by Funde.
- The research was conducted under Tufts SBER IRB protocol 1407012 and funded by a grant from the Walmart Foundation.

Measuring WiF Treatment

WiF training was assessed using three measures.

1. Training participants were asked whether they had had WiF training and to rate the amount of training as *none*, *a little*, *some* or *a lot*. The scale was converted to a set of binary variables and *none* was the excluded group.

2. Training participants were also asked whether their supervisor had had WiF training and to rate the amount of training as *none*, *a little*, *some* or *a lot*. The amount of training a supervisor had received was similarly converted to a set of binary variables and *none* was the excluded group. In many cases, workers reported that they did not know whether their supervisor had had WiF training. The category *none* for supervisor was coded using three separate rules. (1) *Do not know* was coded as a missing record. (2) *Do not know* in the baseline was coded as *none.* (3) *Do not know* at baseline, midline and endline was coded as *none.* Results for all three variants will be presented in the analysis below.

3. Supervisors were asked how many workers they supervise, and how many of their workers had had WiF training. These responses were converted to a percent receiving training, which was taken as an indicator of treatment.

Understanding the graphs and tables presented below.

Analysis of treatment was performed using the statistical procedure, regression. The dosages of WiF treatment were included in the regression as independent variables. The equations were estimated using a panel estimator with random effects and clustered standard errors by factory. Demographic and time variables were included as controls.

A sample of analysis is presented to the left. The bottom axis indicates the amount of training a participant has received. The vertical axis measures the treatment effect.

A dashed line indicates that the regression estimated a treatment effect but that the effect is not significant at conventional levels.

A solid line indicates that the regression estimated a treatment effect and that it is significant at the 90% level of significance or higher.

Workers were asked how much WiF treatment they had received. Workers also responded to questions such as whether they agreed with the statement, “I am proud of the work that I do in this factory.” Agreement was gauged on a five-point scale from *strongly disagree* to *strongly agree*.

The image above indicates that after a little or some WiF training, workers increased their reported pride at work. After a worker reported receiving a lot of WiF training, their sense of pride at work increased further. The total treatment effect was about 0.3 on a five-point scale and the treatment effect was statistically significant at all levels of positive treatment.

Understanding the graphs and tables presented below.

As noted above, training was measured both by the amount of training the respondent had received and the amount of training a respondent's supervisor had received.

A sample of analysis is presented to the left. Participants were asked whether they agree or disagree with the statement, "I am confident that I can effectively resolve conflicts at work." As above, the blue line graphs the treatment effect of training workers. The red line graphs the treatment effect of training received by the supervisor of the respondent.

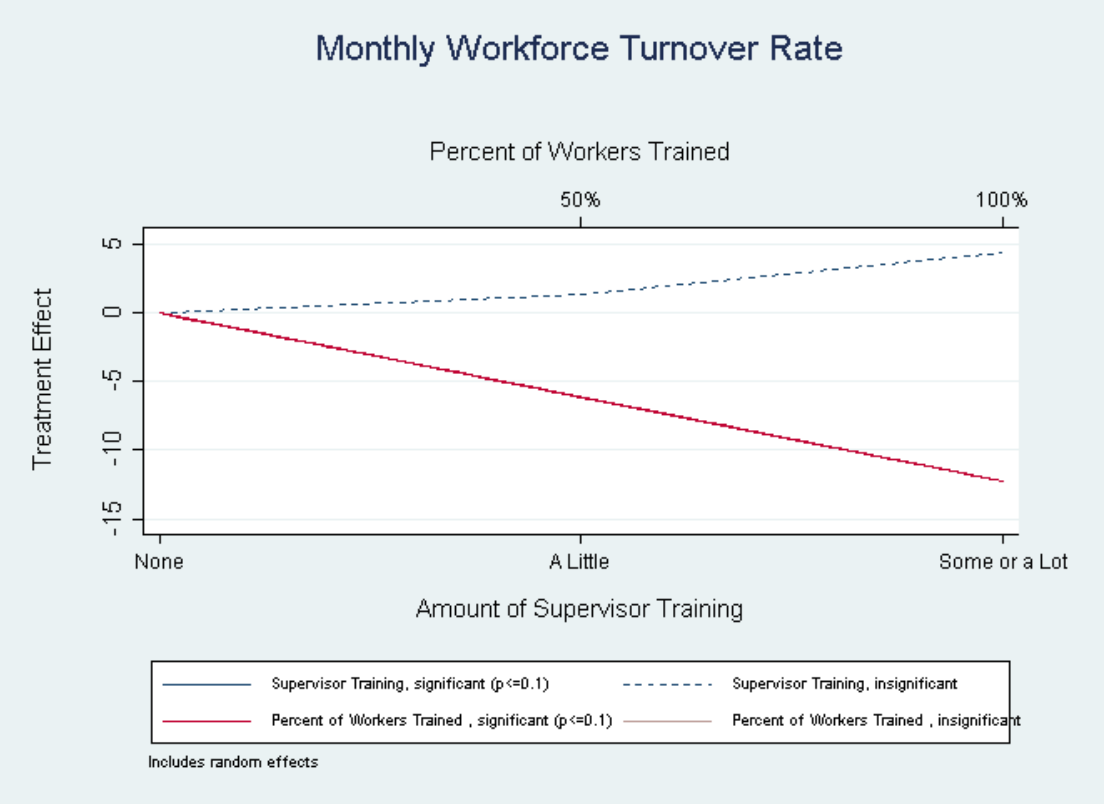
Note that the more WiF training a worker receives, the more likely she is to agree with the statement concerning her ability to resolve conflicts at work. However the treatment effect is not statistically significant, as indicated by the dashed blue line.

By contrast, after only a little supervisor training, workers were significantly more likely to feel confident, as indicated by the bold red line.

Findings such as those above will be common throughout the report. Often training a worker's supervisor had a stronger treatment effect than training the worker herself. However, this was not always the case. Once we turn to reports of supervisors, we will find that supervisors were often more strongly affected by the training received by their subordinates than the training they received themselves.

WiF training had a powerful effect on the factory, with workers benefiting from the training received by their supervisors and supervisors, in turn, benefiting from the training received by their subordinates.

Understanding the graphs and tables presented below.



The impact of worker training on the reports of supervisors is depicted in the graph to the left.

One indicator of firm performance is workforce turnover.

The impact of supervisor training on workforce turnover is indicated by the blue line. Notice that when the supervisor has a little, some or a lot of WiF training, workforce turnover appears to rise. However, the effect is not statistically significant.

The impact of worker training on turnover is indicated by the red line. Providing about half of workers with WiF training reduced workforce turnover by about six percentage points. When 100 percent of workers received WiF training, workforce turnover declined by about 12 percentage points.

In order to keep track of which treatment effect is being reported in a figure, use two rules: The treatment effect of a respondent's own training is indicated by the blue line. The treatment effect of a respondent's supervisor or subordinate is indicated by a red line. Dashed or pale lines indicate that the effect is not statistically significant. Bold solid lines indicate that the treatment effect is statistically significant.

Understanding the graphs and tables presented below.

Simultaneous Equation Modeling (SEM)

In the initial analysis, we look at the impact of treatment on just one variable.

- For example, we might wonder, “How does training impact how often a worker is sick?”

In Simultaneous Equation Modeling, we are able to measure the impact of multiple variables on one another as a system.

- For example, we might wonder, “How does training impact a worker’s knowledge of clean water? How does that in turn affect how often they boil their water? As a final outcome, how does that knowledge and behavior impact how often they are sick?”

In this way, we are able to measure the full impact of training through mediating variables.

SEM analysis also enables us to take a holistic look at what factors make training most effective. For example, we have found that when training impacts a worker’s confidence, it makes other aspects of training more effective.

A schematic diagram is provided below.

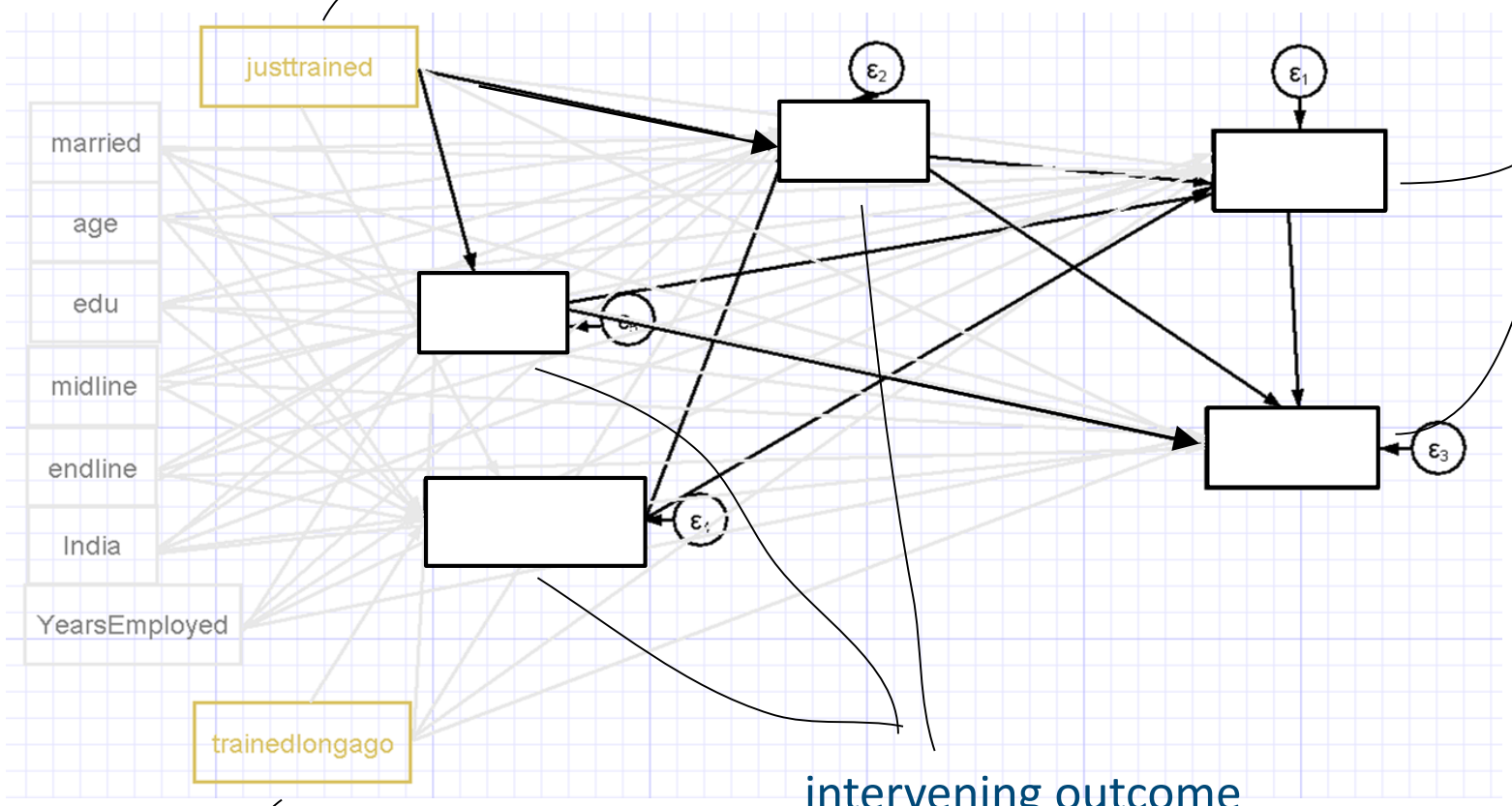
- On the leftmost part of the diagram are the basic demographic control variables. Gender, age, education, etc., may affect how a participant responds to training.
- Next are the treatment variables. These variables measure how much training a participant has received.
- Demographic and treatment variables feed into the first stage of the analysis.
- In the middle of the picture are the variables through which training has its effect. These are called mediating variables.
- The last variables on the far right of the diagram are those in which we are ultimately interested: the impact variables.
- We will consider whether treatment directly affects these impact variables or whether training must be mediated through other variables.
- The arrows indicate the direction of causality.

Sample of a simultaneous equation model

A measure of training immediately after training

ultimate impact variables

demographic variables



Black arrows represent a good, statistically significant relationship.

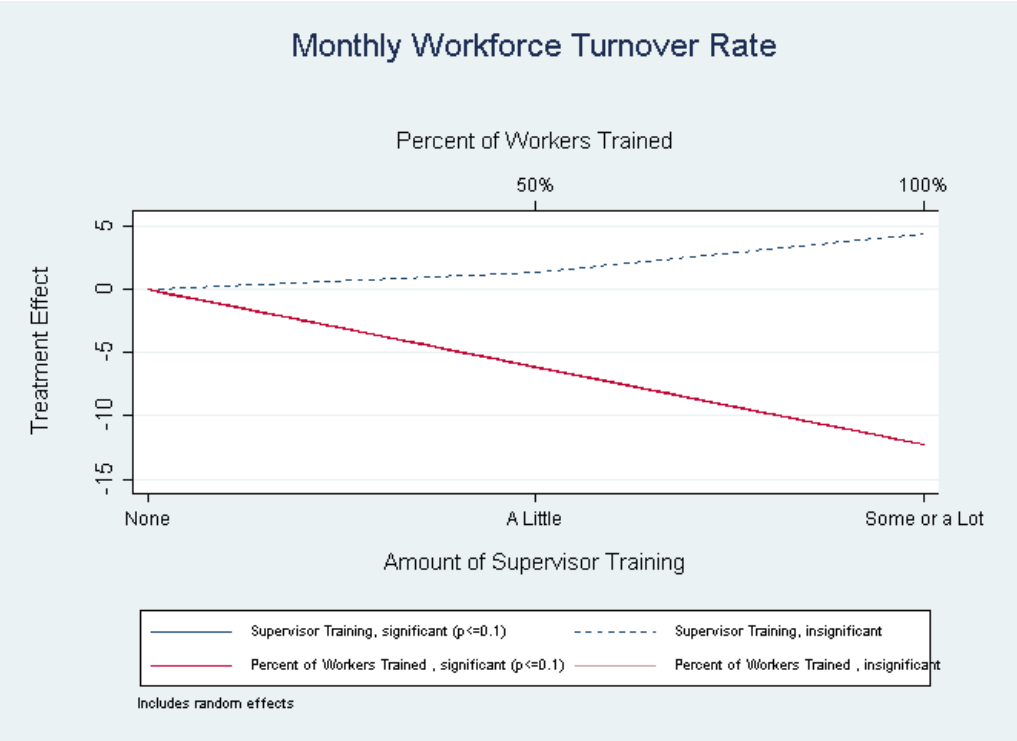
Red arrows represent a bad, statistically significant relationship

intervening outcome variables

A measure of training after a few months

Return on Investment

Monthly Workforce Turnover



Workers in apparel factories think a lot about quitting. The adverse effects of workforce turnover are severe as the factory loses all of the human capital acquired during skills training and on-the-job experience.

An important question concerns whether a light touch training of all workers, in-depth training of supervisors, or both is the most effective in reducing turnover.

As can be seen in the figure above, WiF training of supervisors does not appear to have affected workforce turnover. However, the larger the fraction of a supervisor's subordinates who have received training, the lower the workforce turnover. Once 100 percent of workers have received WiF training, turnover declines by 12.3 percentage points.

To put this number in perspective, before training about 14.6 percent of the workforce quit each month. After training only about 2.3 percent quit each month.

	(1)
VARIABLES	Monthly_Turnover
WIF_Sup_little	1.343
	(2.311)
WIF_Sup_some_lot	4.390
	(3.143)
Workers_Supervised	-0.0134
	(0.0110)
workerstrainedpercent	-12.26***
	(2.205)
Constant	14.64**
	(6.287)
Observations	145
Number of uniqueID	115

Efficiency Rate

The most common measure of productivity in the apparel sector is the efficiency rate. The industrial engineer sets a production target for each individual, line or section. The question then becomes how close actual production is to targeted production. If the individual, line or section produces the target within the allotted time, then the efficiency rate is 100%. However, an efficiency rate below 100% is more common.

For workers who report a small amount of advanced training, there is initially a decline of the efficiency rate by 15 percentage points on a base of 97 percent. By contrast, WiF training of supervisors has a strong positive effect on the efficiency rate.

Once supervisors have had a lot of training, the reported efficiency rate rises by 29 percentage points.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-15.40	-10.14*	-19.06**	-14.89*
	(9.717)	(5.245)	(9.293)	(8.770)
WIF_some	-9.120	3.181	-5.807	-6.065
	(11.94)	(6.296)	(10.64)	(10.90)
WIF_lot	-17.16	-16.37	-29.23*	-20.83
	(14.30)	(12.81)	(16.93)	(15.73)
WIF_Sup_little		7.681	-2.081	2.625
		(9.630)	(11.28)	(8.664)
WIF_Sup_some		-7.377	-14.54*	-9.623
		(6.890)	(8.688)	(8.446)
WIF_Sup_lot		36.56***	30.66**	29.25**
		(12.71)	(13.53)	(12.91)
Constant	104.0***	56.62***	100.5***	97.29***
	(24.31)	(21.31)	(31.02)	(26.44)
Observations	109	80	100	109
Number of uniqueID	98	73	92	98

Hourly Production Target

The efficiency rate can underestimate the impact of training on productivity if the industrial engineer is simultaneously increasing the production target. There is some evidence that firms altered the production target. For workers whose supervisors had received a little training, the hourly target was increased by 41 units on a base of 836, or about five percent. When supervisor training rose to some, the hourly production target rose by 123.6 units, or nearly 15 percent.

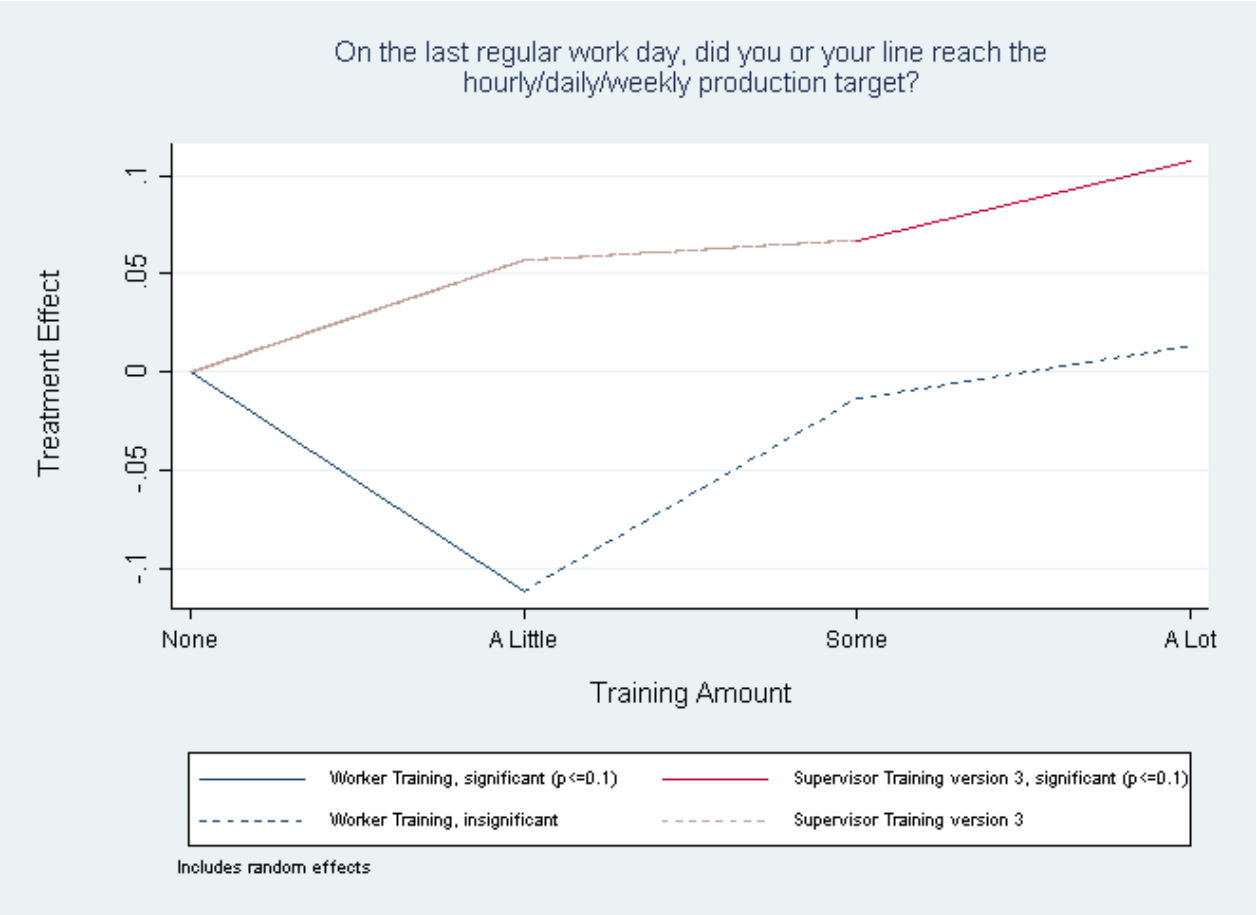
The average treatment effect remains elevated when supervisors have had a lot of training but the effect is not statistically significant.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-54.15	-69.84	-61.77	-62.83
	(80.58)	(106.0)	(84.21)	(84.41)
WIF_some	-33.09	-68.31	-62.60	-67.11
	(85.56)	(112.4)	(94.70)	(95.18)
WIF_lot	17.83	-40.10	-28.36	-32.89
	(79.47)	(86.12)	(71.57)	(71.34)
WIF_Sup_little		25.55	41.10**	45.08**
		(28.33)	(19.61)	(18.19)
WIF_Sup_some		107.4	123.6**	130.1**
		(72.20)	(62.46)	(64.85)
WIF_Sup_lot		119.5	133.0	140.0
		(98.31)	(101.1)	(96.57)
Constant	902.8	852.5	835.8	826.8
	(741.0)	(732.8)	(726.7)	(728.9)
Observations	446	386	423	445
Number of uniqueID	345	297	329	344

Probability of reaching the production target

In order to determine whether an increased production target also indicates an increase in productivity, workers were asked whether they reached their production target in the preceding day.

The probability of a line reaching its production target was significantly increased when workers reported that their supervisor had received a lot of WiF training. WiF training increased the probability of reaching the target by nearly 11 percentage points.



	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.0946*	-0.0876	-0.114**	-0.111*
	(0.0551)	(0.0570)	(0.0551)	(0.0586)
WIF_some	0.0136	-0.00608	-0.0198	-0.0135
	(0.0611)	(0.0630)	(0.0607)	(0.0633)
WIF_lot	0.0454	0.0188	0.00409	0.0133
	(0.0583)	(0.0666)	(0.0647)	(0.0610)
WIF_Sup_little		-0.00949	0.0576	0.0569
		(0.0470)	(0.0526)	(0.0455)
WIF_Sup_some		0.00170	0.0660	0.0672
		(0.0576)	(0.0512)	(0.0477)
WIF_Sup_lot		0.0637	0.122***	0.107**
		(0.0524)	(0.0456)	(0.0456)
Constant	0.967***	1.048***	0.961***	0.921***
	(0.250)	(0.117)	(0.236)	(0.253)
Observations	675	560	619	673
Number of uniqueID	493	417	466	491

Production Bonus Amount

A second indicator of increased productivity is the production bonus amount. Workers who more commonly reach the production target are more likely to earn a production bonus.

The figure below indicates that when workers reported that their supervisor had received some or a lot of WiF training, there was a statistically significant increase in the amount of the production bonus received by the worker.

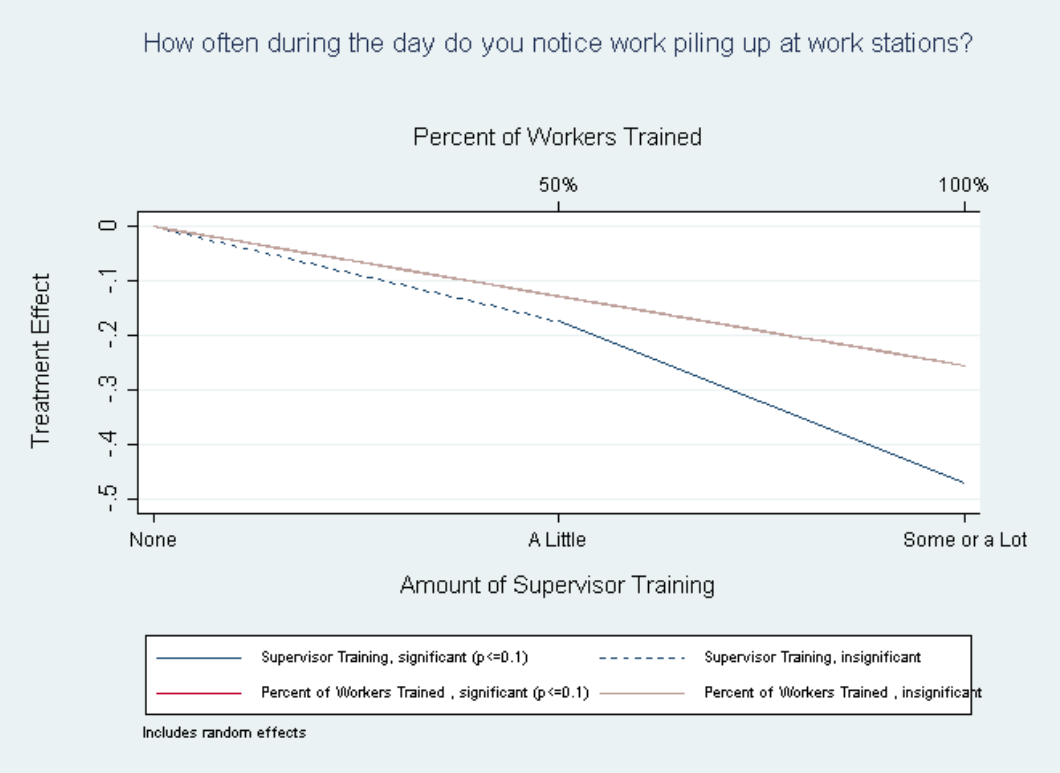
	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.610*	-0.487	-0.579*	-0.615*
	(0.330)	(0.355)	(0.337)	(0.322)
WIF_some	-0.286	-0.245	-0.367	-0.336
	(0.332)	(0.293)	(0.310)	(0.338)
WIF_lot	-0.194	-0.362	-0.407	-0.239
	(0.385)	(0.345)	(0.344)	(0.397)
WIF_Sup_little		0.0388	0.231	0.0555
		(0.174)	(0.170)	(0.165)
WIF_Sup_some		0.158	0.377*	0.170
		(0.228)	(0.206)	(0.174)
WIF_Sup_lot		0.125	0.326*	0.00321
		(0.165)	(0.188)	(0.258)
Constant	-1.522	0.0274	-0.638	-1.086
	(1.234)	(1.420)	(1.326)	(1.211)
Observations	1,060	858	964	1,057
Number of uniqueID	723	608	686	722

Line balancing

Line balancing is an important contributor to productivity. Production situations in which work is piling up at the station of one worker or a worker is sitting idle are both indicators of poor line balancing.

Supervisors were asked how often they notice work piling up at the work station of some workers. The scale ranges from *1 = never* to *5 = all of the time*. In the absence of any advanced training, participants reported an average of 3.5, or just between sometimes and often.

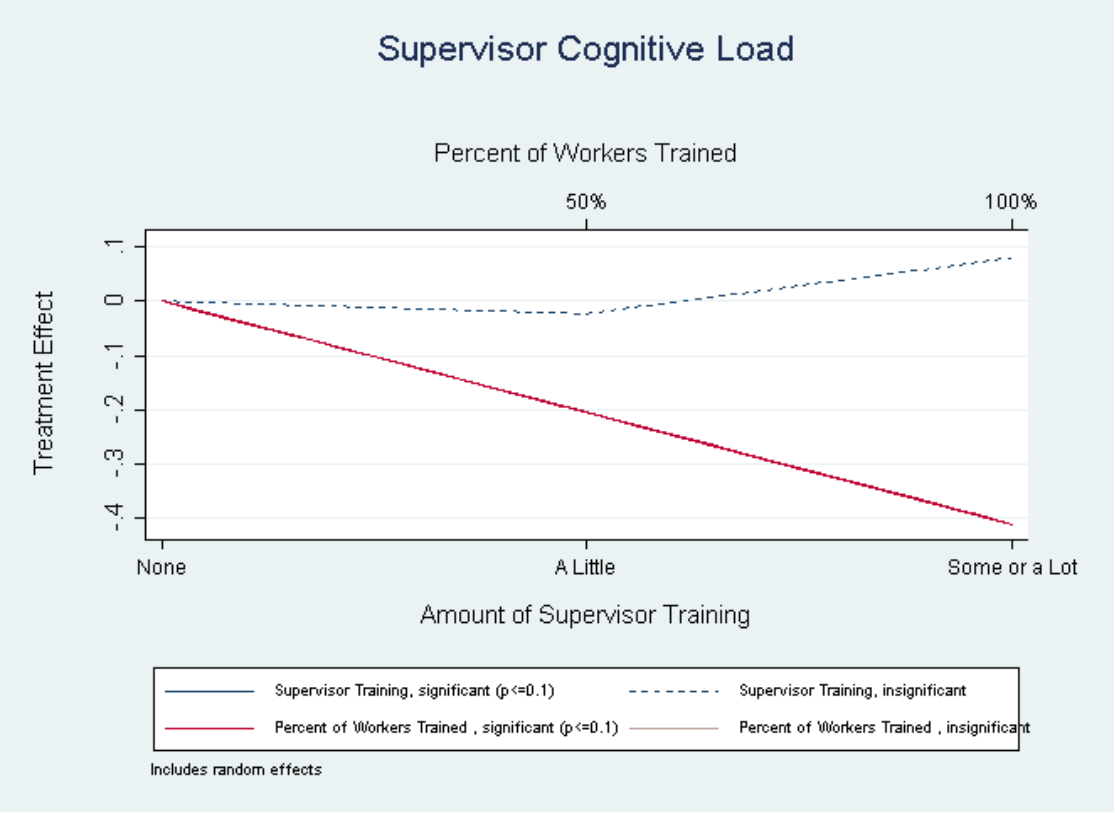
After receiving some or a lot of WiF advanced training, the frequency declines by about 0.5. That is, after training, participants reported problems with line balancing sometimes.



	(1)
VARIABLES	Work_Piling_Up
WIF_Sup_little	-0.174
	(0.151)
WIF_Sup_some_lot	-0.470***
	(0.172)
Workers_Supervised	0.000197
	(0.00123)
workerstrainedpercent	-0.255
	(0.349)
Constant	3.506***
	(0.725)
Observations	165
Number of uniqueID	129

Supervisor cognitive load

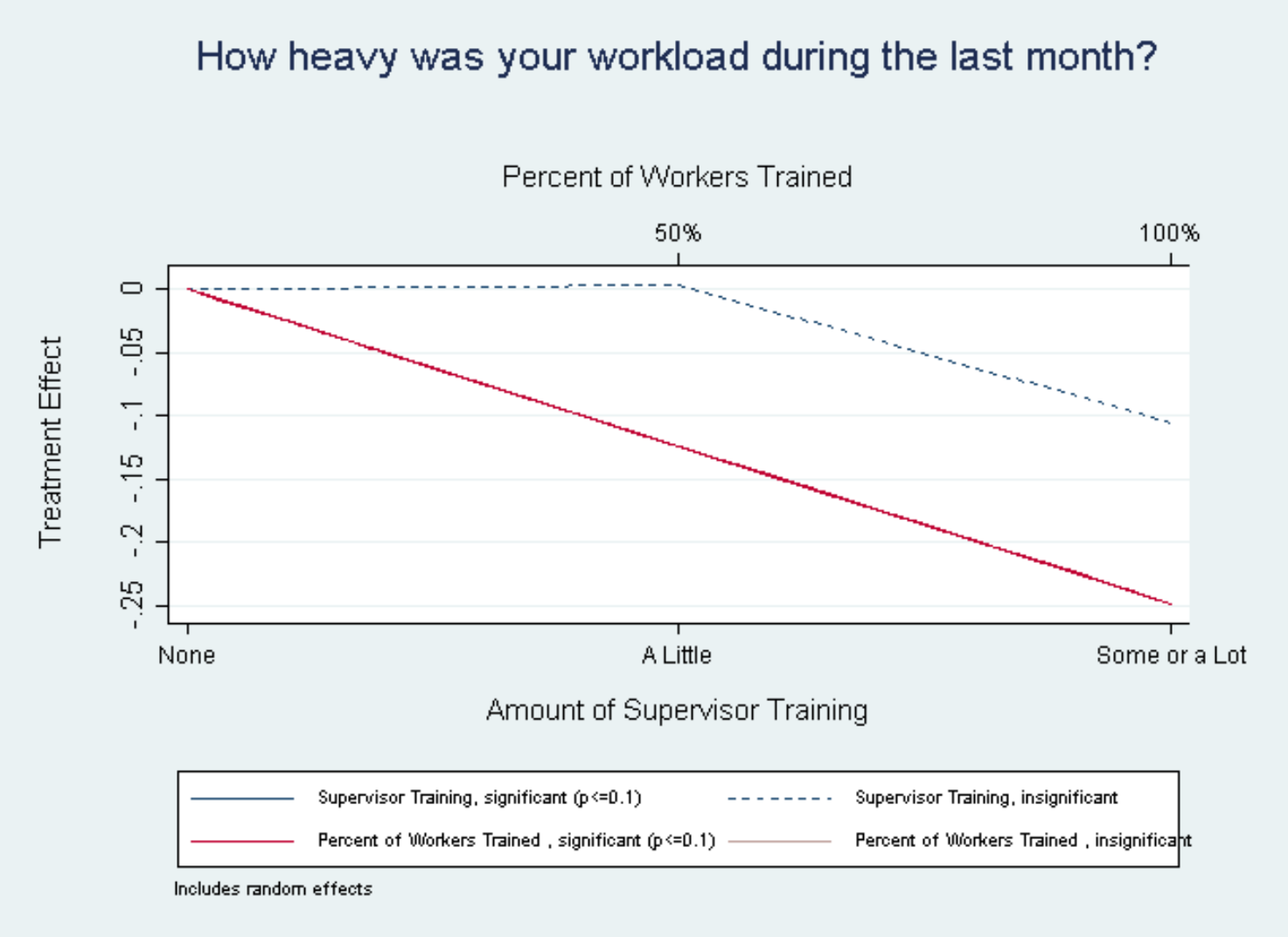
Cognitive load is the extent to which supervisors are at the limits of their mental capacity.
Factories are stressful places, with frustrations often spilling out into yelling or other forms of abuse. Fortunately, cognitive load goes down as the percentage of trained workers increases.



	(1)
VARIABLES	cogload
WIF_Sup_little	-0.0231
	(0.121)
WIF_Sup_some_lot	0.0797
	(0.0843)
Workers_Supervised	0.00133
	(0.000845)
workerstrainedpercent	-0.410**
	(0.181)
Constant	1.595***
	(0.402)
Observations	155
Number of uniqueID	120

This is a composite of two items measuring cognitive load:
In the last month, how often did difficult problems arise in your work for which there were no immediate solutions?
During a normal workweek, how frequently do unexpected issues arise in your work?

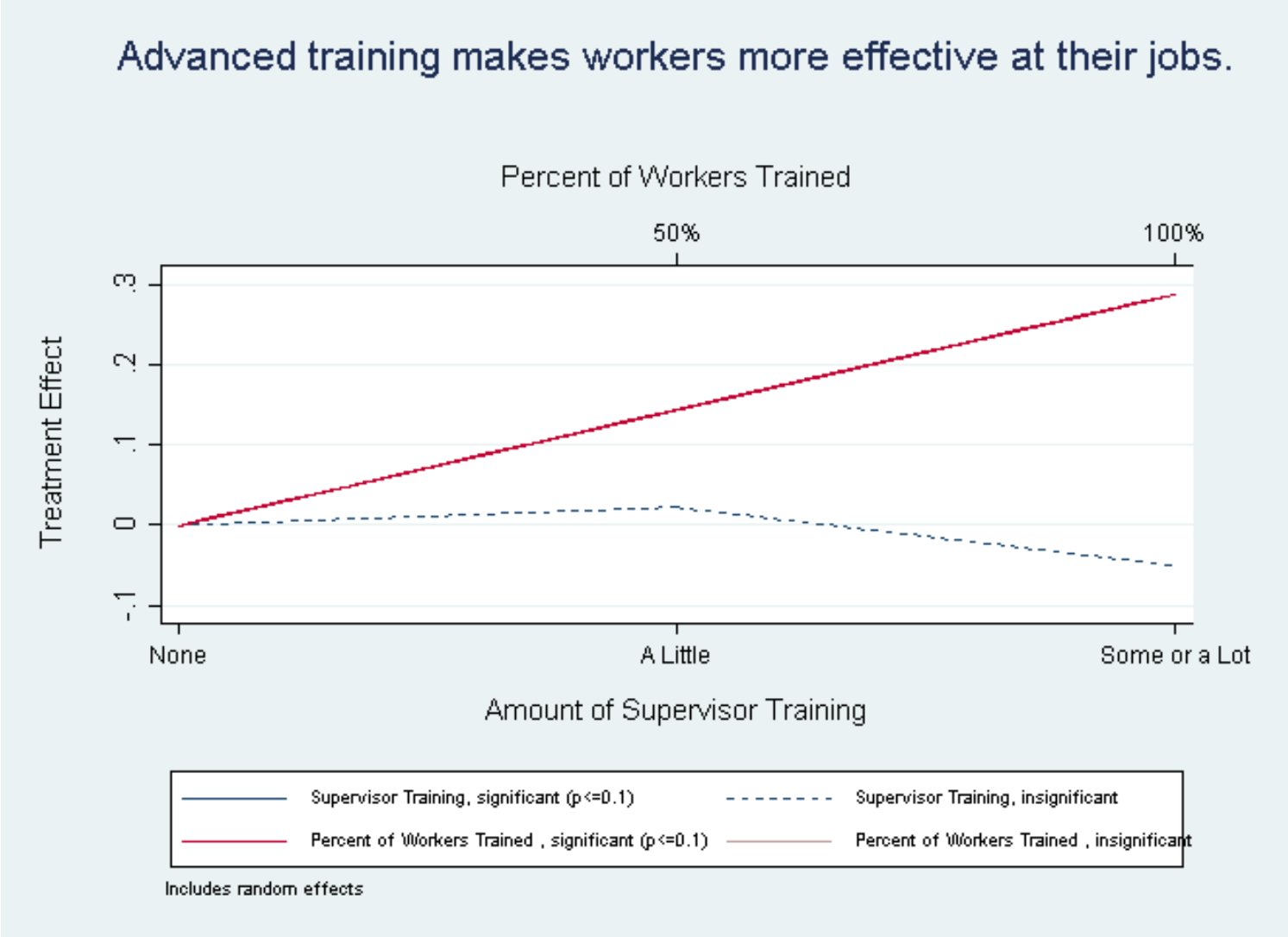
This item is another way of measuring cognitive load. We see the same pattern: As the percentage of trained workers increases, supervisors report that their workloads decrease. Again, the effect comes not from supervisors' own training, but from the training of their workers.



	(1)
VARIABLES	L1
WIF_Sup_little	0.00355
	(0.138)
WIF_Sup_some_lot	-0.105
	(0.120)
Workers_Supervised	0.00199***
	(0.000458)
workerstrainedpercent	-0.248*
	(0.148)
Constant	4.387***
	(0.669)
Observations	159
Number of uniqueID	125

Supervisor buy-in

We see that as a greater percentage of their workers are trained, supervisors become more supportive of the program.



	(1)
VARIABLES	moreeffective
WIF_Sup_little	0.0225
	(0.160)
WIF_Sup_some_lot	-0.0503
	(0.189)
Workers_Supervised	-5.09e-06
	(0.000791)
workerstrainedpercent	0.289**
	(0.129)
Constant	3.829***
	(0.511)
Observations	166
Number of uniqueID	129

Communication and Problem Solving

Positive motivational techniques

As workers develop their communication skills, they learn that there are ways to express their goals to others and have them comply, without having to resort to verbal abuse or intimidation. When workers reported having a lot of training through the WiF program, they were more likely to demonstrate their awareness of other modes of communication by agreeing with the statement, “I can get others to do what I want them to do without yelling at them or threatening them.” Before training, workers on average neither agreed nor disagreed with this statement. After training, workers on average were more likely to somewhat agree.

Likewise, workers who reported that their supervisors had had a lot of WiF training also were more likely to agree with this statement, suggesting that supervisors could set an example of conveying instructions without verbal abuse.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.0289	-0.161	-0.0611	-0.0374
	(0.124)	(0.146)	(0.127)	(0.126)
WIF_some	0.0872	0.0201	0.0715	0.0956
	(0.119)	(0.125)	(0.126)	(0.116)
WIF_lot	0.271***	0.294***	0.336***	0.237***
	(0.0896)	(0.110)	(0.106)	(0.0869)
WIF_Sup_little		0.169**	0.125*	0.0509
		(0.0790)	(0.0650)	(0.0613)
WIF_Sup_some		-0.00883	-0.0506	-0.117
		(0.0766)	(0.0763)	(0.0774)
WIF_Sup_lot		0.256**	0.234**	0.187
		(0.116)	(0.113)	(0.122)
Constant	3.010***	2.733***	2.790***	2.874***
	(0.920)	(0.930)	(0.927)	(0.920)
Observations	1,197	975	1,090	1,191
Number of uniqueID	783	663	744	779

Perspective-taking

Workers who reported receiving a lot of training, and especially those who reported their supervisors had a little or a lot of training, were more likely to affirm their ability to see another's perspective when in a conflict. This conflict resolution skill is an important aspect of effective communication.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	0.0196	-0.0818	-0.0592	-0.0249
	(0.0589)	(0.0803)	(0.0680)	(0.0611)
WIF_some	0.0449	-0.0496	-0.00404	0.0288
	(0.0787)	(0.112)	(0.0873)	(0.0779)
WIF_lot	0.208**	0.125	0.146	0.145
	(0.0960)	(0.124)	(0.116)	(0.107)
WIF_Sup_little		0.251**	0.216**	0.159**
		(0.105)	(0.0894)	(0.0724)
WIF_Sup_some		0.127	0.0850	0.0275
		(0.0983)	(0.0754)	(0.0672)
WIF_Sup_lot		0.375***	0.351***	0.287***
		(0.112)	(0.1000)	(0.0922)
Constant	3.954***	3.799***	3.697***	3.769***
	(0.504)	(0.612)	(0.554)	(0.517)
Observations	1,166	959	1,063	1,161
Number of uniqueID	757	650	719	754

Confidence resolving conflicts at work

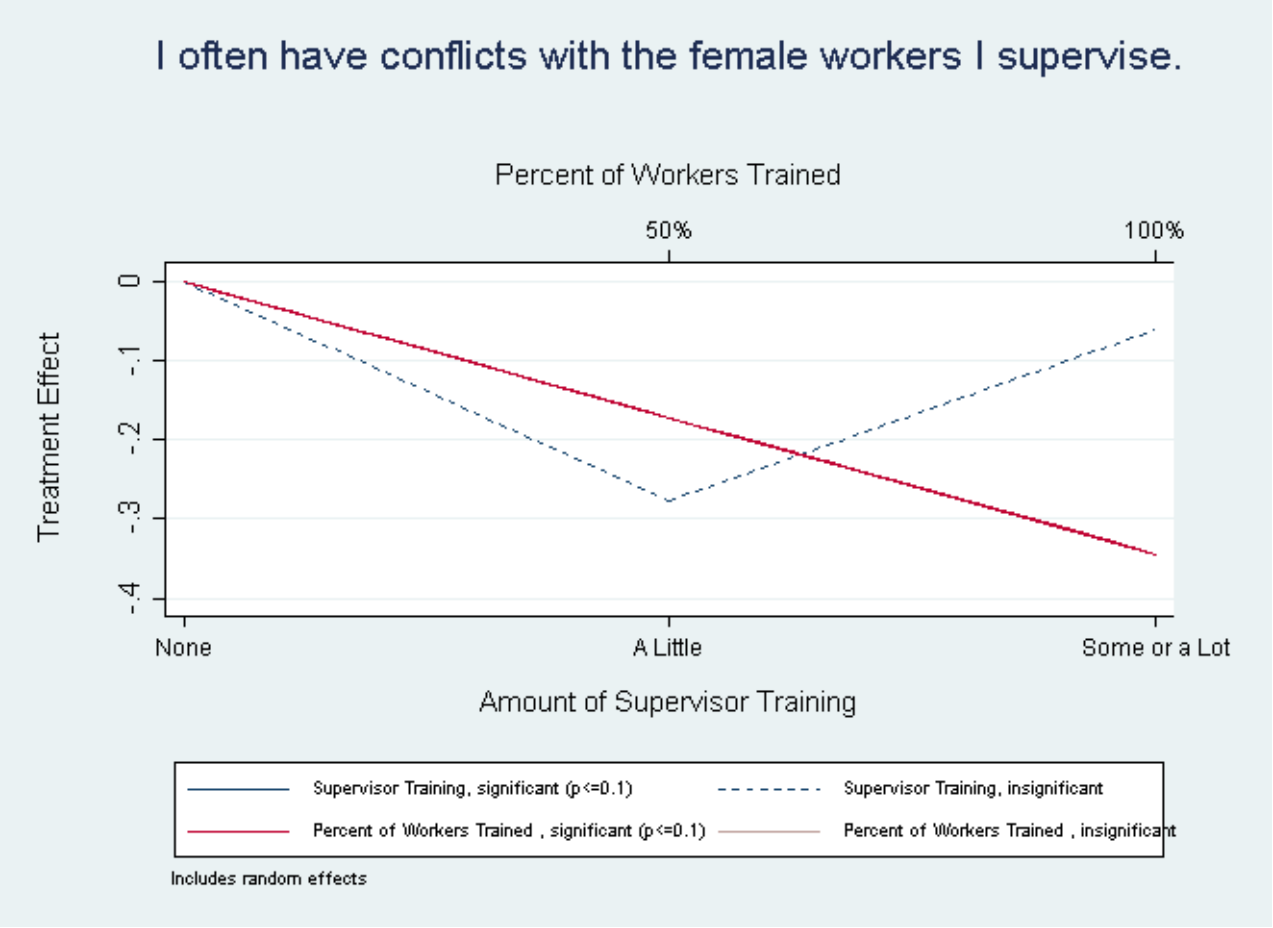
Workers who reported receiving a lot of training, and especially those who reported that their supervisors had had any training, were more confident that they could effectively resolve conflicts at work.

This is similar to the patterns found in the question about perspective-taking to resolve conflicts, and is another sign that training supervisors and workers increases their sense of mastery of communication skills.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.00810	-0.0371	-0.0917	-0.0625
	(0.0942)	(0.0946)	(0.0975)	(0.0975)
WIF_some	0.0170	-0.0148	-0.0533	-0.0385
	(0.0726)	(0.0766)	(0.0721)	(0.0673)
WIF_lot	0.187*	0.0931	0.0541	0.0629
	(0.109)	(0.112)	(0.118)	(0.111)
WIF_Sup_little		0.237**	0.258***	0.229***
		(0.102)	(0.0942)	(0.0845)
WIF_Sup_some		0.142*	0.158**	0.133**
		(0.0815)	(0.0689)	(0.0644)
WIF_Sup_lot		0.475***	0.492***	0.462***
		(0.0977)	(0.0860)	(0.0814)
Constant	3.721***	3.538***	3.541***	3.538***
	(0.498)	(0.555)	(0.520)	(0.510)
Observations	1,195	978	1,088	1,190
Number of uniqueID	782	665	741	779

Supervisor perspective on conflict

These improvements in worker communication skills are reflected in supervisor reports: Supervisors' conflict with workers decreased as the percentage of their workers who had been trained increased.



	(1)
VARIABLES	femaleworkersconflict
WIF_Sup_little	-0.277
	(0.189)
WIF_Sup_some_lot	-0.0609
	(0.166)
Workers_Supervised	0.000239
	(0.000837)
workerstrainedpercent	-0.344**
	(0.150)
Constant	3.257***
	(0.447)
Observations	162
Number of uniqueID	125

Voicing opinions at work

As workers reported that their supervisors had received even just a little WiF training, they felt more confident that they could voice their opinion at work. Workers' confidence in their own power of expression in the workplace also increased as they reported having had a lot of training.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.0276	-0.0290	-0.113	-0.0714
	(0.102)	(0.0976)	(0.0996)	(0.103)
WIF_some	0.0838	0.0620	0.00368	0.0274
	(0.0923)	(0.0878)	(0.0878)	(0.0889)
WIF_lot	0.270**	0.242*	0.196	0.172
	(0.116)	(0.134)	(0.132)	(0.124)
WIF_Sup_little		0.156*	0.182**	0.117*
		(0.0901)	(0.0754)	(0.0677)
WIF_Sup_some		0.165**	0.187***	0.141**
		(0.0747)	(0.0675)	(0.0566)
WIF_Sup_lot		0.408***	0.416***	0.385***
		(0.113)	(0.100)	(0.0996)
Constant	3.873***	3.885***	3.664***	3.732***
	(0.683)	(0.649)	(0.675)	(0.684)
Observations	1,215	995	1,108	1,209
Number of uniqueID	789	674	753	785

Speaking up about mistakes

Being able to tell someone about a work-related mistake is a sign of a positive relationship with a supervisor: Communication is not linked with negative consequences, and this can improve the chances that small errors are dealt with right away and do not become larger problems. The more WiF training a worker received, the more likely she was to feel comfortable reporting a mistake. No significant effect of supervisor training was found on this item.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	0.0632	0.0572	0.0715	0.0550
	(0.0999)	(0.105)	(0.101)	(0.0915)
WIF_some	0.0987	0.110	0.133	0.109
	(0.0870)	(0.110)	(0.0934)	(0.0806)
WIF_lot	0.154	0.178*	0.186*	0.140
	(0.122)	(0.106)	(0.104)	(0.109)
WIF_Sup_little		0.0956	0.0173	0.0375
		(0.117)	(0.106)	(0.0997)
WIF_Sup_some		-0.00525	-0.0722	-0.0492
		(0.118)	(0.112)	(0.0965)
WIF_Sup_lot		0.0895	0.0242	0.0758
		(0.156)	(0.147)	(0.124)
Constant	3.370***	3.066***	3.041***	3.273***
	(1.005)	(1.063)	(1.026)	(1.028)
Observations	1,199	975	1,090	1,192
Number of uniqueID	782	663	743	777

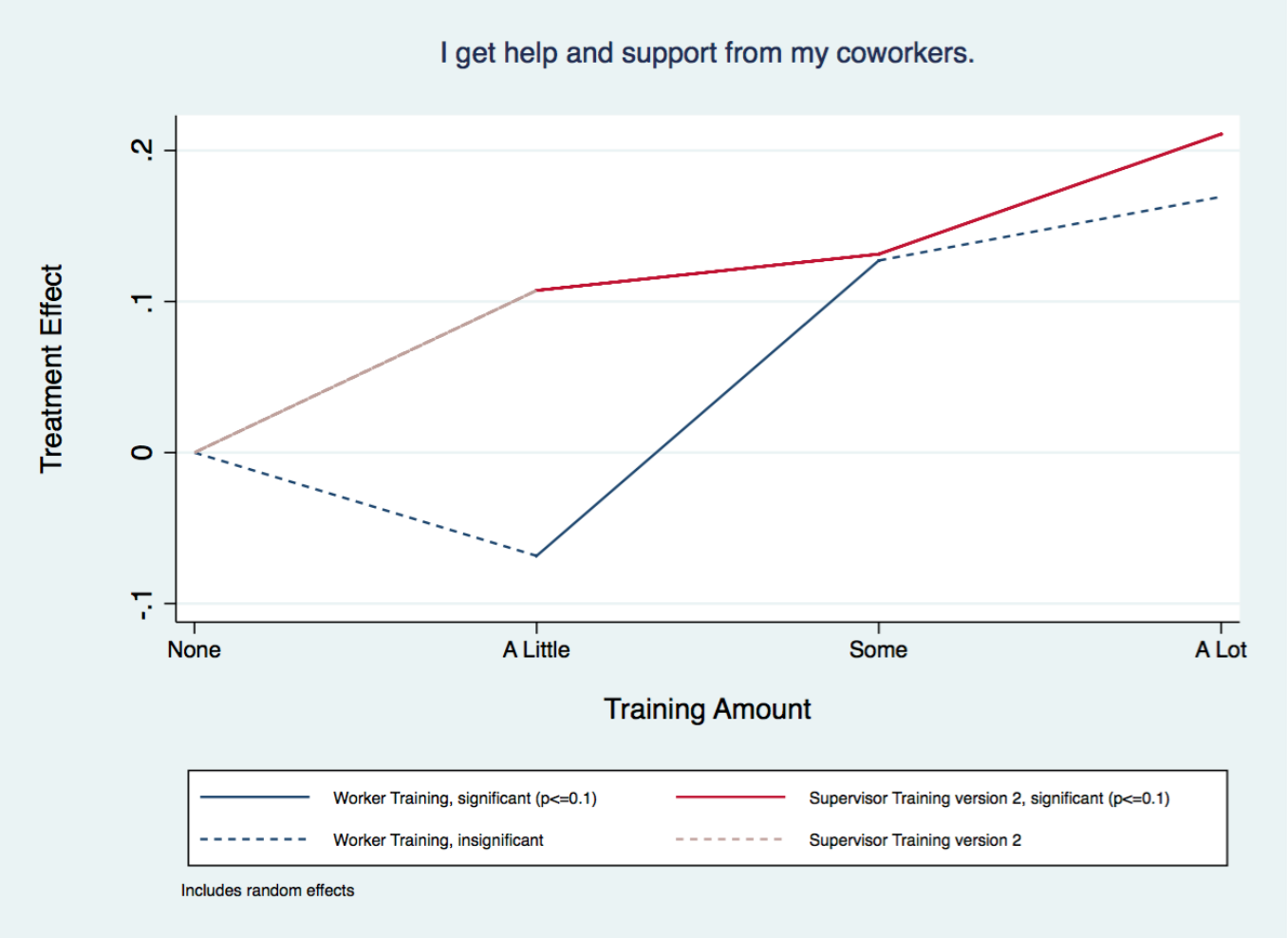
Conflicts with coworkers

Workers whose supervisors had more training reported more satisfaction with how their conflicts with coworkers were resolved; however, workers who reported having more training were less satisfied.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.200	-0.242	-0.190	-0.189
	(0.171)	(0.196)	(0.174)	(0.169)
WIF_some	-0.146	-0.250	-0.149	-0.177
	(0.168)	(0.188)	(0.174)	(0.172)
WIF_lot	-0.274*	-0.336*	-0.297*	-0.290**
	(0.147)	(0.180)	(0.163)	(0.143)
WIF_Sup_little		0.120	-0.0101	0.0171
		(0.0916)	(0.0926)	(0.0868)
WIF_Sup_some		0.266***	0.110	0.148*
		(0.0866)	(0.0777)	(0.0759)
WIF_Sup_lot		0.174	0.0341	0.0642
		(0.155)	(0.149)	(0.152)
Constant	3.852***	3.433***	3.759***	3.812***
	(0.620)	(0.421)	(0.656)	(0.608)
Observations	828	668	745	822
Number of uniqueID	589	493	552	584

Getting help from coworkers

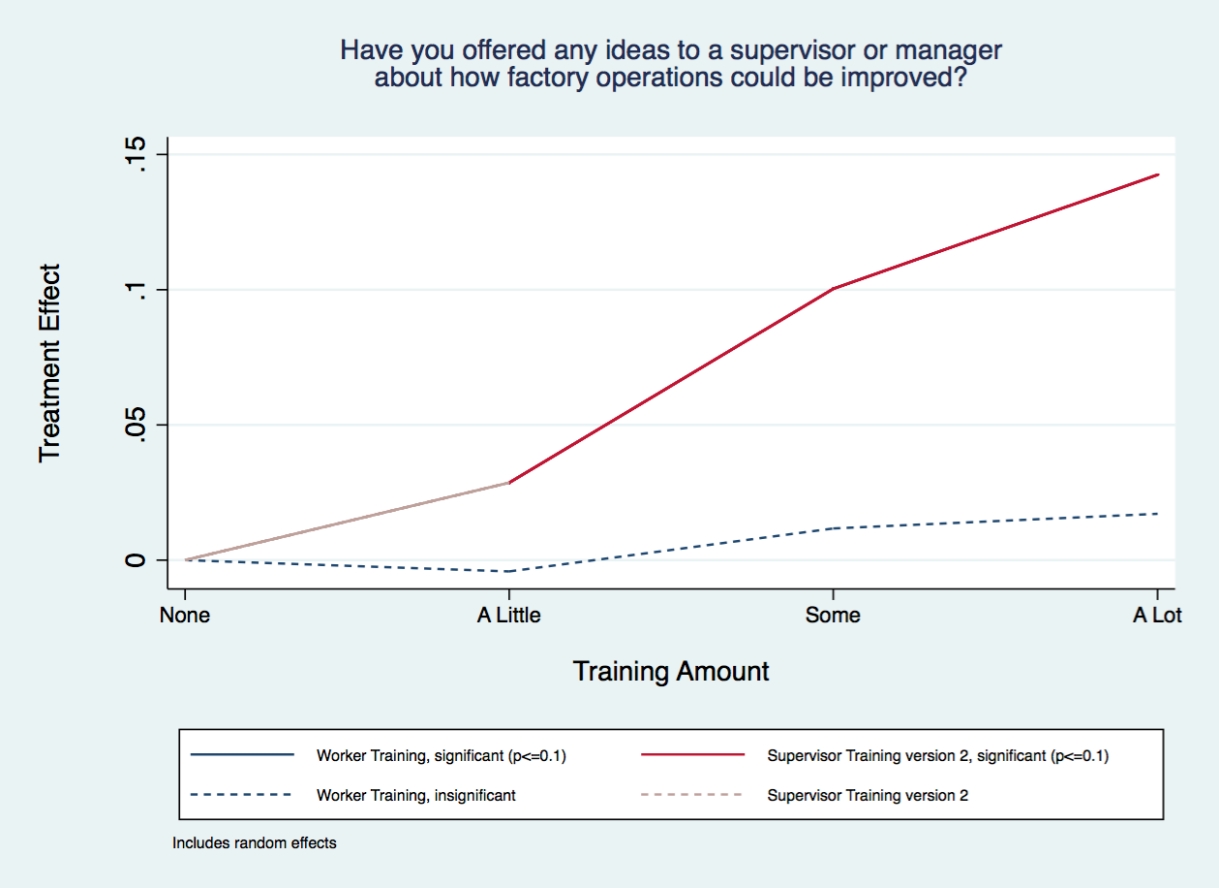
As both workers' self-reported levels of training and level of supervisor training increased, they reported getting more help and support from their coworkers. This suggests that the WiF training increased the levels of mutual support within the factory.



	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.0493	-0.0760	-0.0684	-0.0537
	(0.0873)	(0.0936)	(0.0974)	(0.0897)
WIF_some	0.152**	0.0760	0.127*	0.120*
	(0.0737)	(0.0757)	(0.0730)	(0.0682)
WIF_lot	0.181	0.152	0.169	0.137
	(0.129)	(0.128)	(0.134)	(0.125)
WIF_Sup_little		0.0706	0.107	0.0913
		(0.0932)	(0.0978)	(0.0994)
WIF_Sup_some		0.111	0.131**	0.117*
		(0.0688)	(0.0630)	(0.0674)
WIF_Sup_lot		0.188**	0.211***	0.198***
		(0.0888)	(0.0769)	(0.0710)
Constant	4.687***	4.779***	4.555***	4.580***
	(0.470)	(0.589)	(0.514)	(0.479)
Observations	1,238	999	1,122	1,231
Number of uniqueID	803	677	762	798

Making suggestions at work

Do workers feel empowered to share their ideas for improving factory operations with their supervisors or managers? If so, it signals the confidence of the worker in their power of expression and their commitment to the advancement of the factory. In this case, levels of worker training did not influence this outcome. However, as workers believed their supervisors had more training, they were more likely to approach supervisors or managers with their ideas to improve factory operations.



	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	0.00407	-0.0190	-0.00418	0.00491
	(0.0426)	(0.0441)	(0.0453)	(0.0427)
WIF_some	0.0396	-0.00993	0.0117	0.0103
	(0.0428)	(0.0568)	(0.0539)	(0.0466)
WIF_lot	0.0659	0.00656	0.0171	0.0250
	(0.0449)	(0.0655)	(0.0638)	(0.0528)
WIF_Sup_little		-0.0281	0.0286	0.0181
		(0.0390)	(0.0355)	(0.0358)
WIF_Sup_some		0.0452	0.100***	0.0958***
		(0.0334)	(0.0265)	(0.0288)
WIF_Sup_lot		0.0916	0.143**	0.138**
		(0.0598)	(0.0557)	(0.0566)
Constant	0.192	0.448**	0.262	0.271
	(0.247)	(0.216)	(0.237)	(0.238)
Observations	1,211	986	1,100	1,204
Number of uniqueID	788	671	750	784

When workers share their ideas for improving factory operations with their supervisors or managers, are those ideas put into practice?

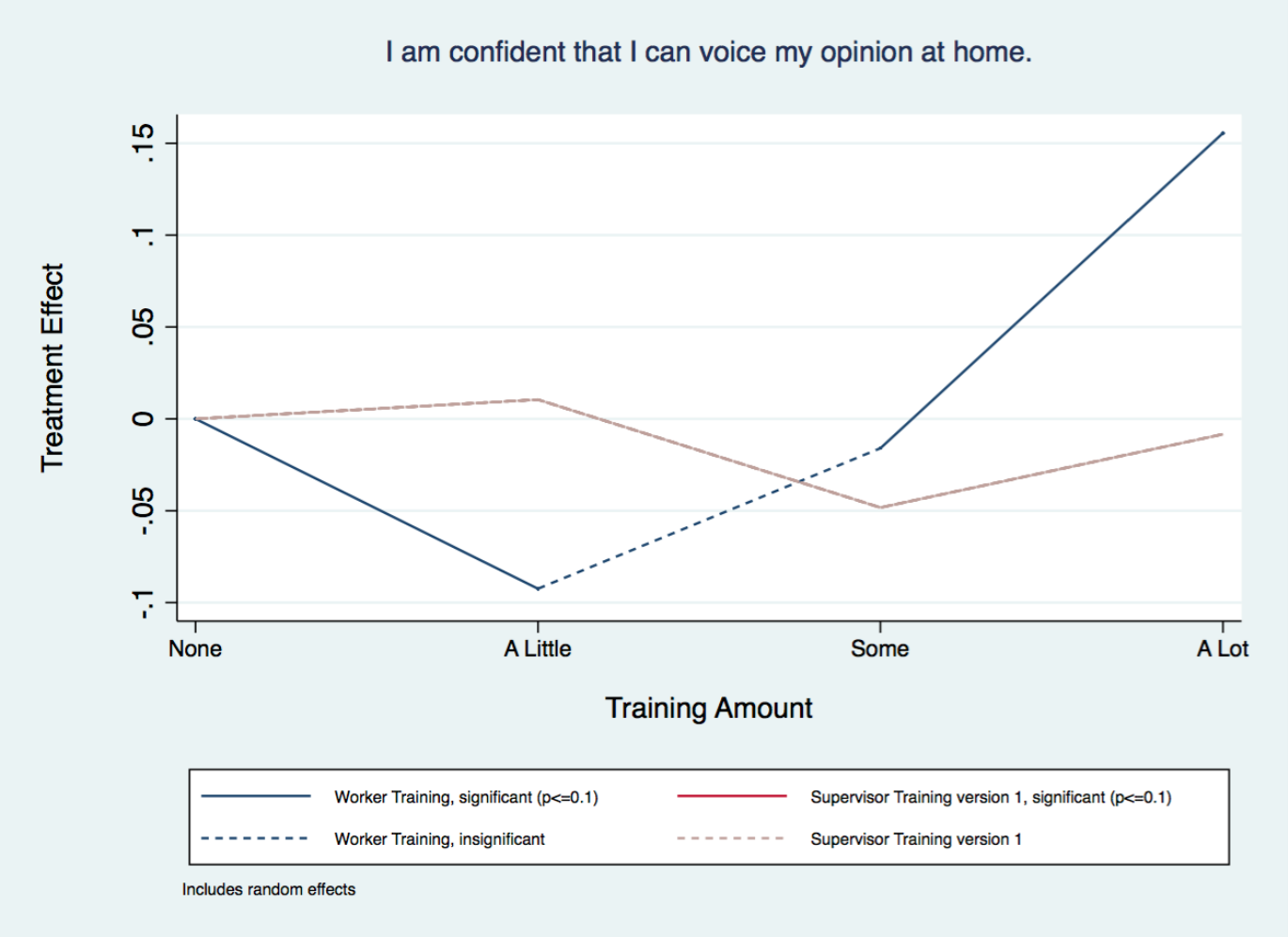
Workers who reported receiving a lot of training, and especially those who reported that their supervisors had a lot of training, were more likely to see their ideas to improve factory operations come to fruition.

Therefore, in both the offering and implementation of suggestions, the role of supervisor training should be emphasized.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.0140	-0.0542	-0.0247	-0.0237
	(0.0787)	(0.0881)	(0.0877)	(0.0780)
WIF_some	0.0626	0.0276	0.0390	0.0455
	(0.0700)	(0.0777)	(0.0766)	(0.0756)
WIF_lot	0.133*	0.0479	0.0556	0.0982
	(0.0736)	(0.0876)	(0.0869)	(0.0739)
WIF_Sup_little		0.155**	0.114	0.0732
		(0.0782)	(0.0777)	(0.0691)
WIF_Sup_some		0.148	0.109	0.0729
		(0.0974)	(0.0927)	(0.0872)
WIF_Sup_lot		0.247**	0.199	0.132
		(0.118)	(0.121)	(0.104)
Constant	1.761***	1.589***	1.632***	1.696***
	(0.330)	(0.375)	(0.352)	(0.321)
Observations	763	657	701	760
Number of uniqueID	539	478	512	537

Voicing opinions at home

Initially, after a small amount of WiF training, workers became less confident in their ability to voice their opinion at home. But confidence grew with training.



	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.108**	-0.0924*	-0.0957*	-0.107**
	(0.0538)	(0.0551)	(0.0507)	(0.0530)
WIF_some	-0.0743	-0.0160	-0.0360	-0.0625
	(0.0699)	(0.0791)	(0.0689)	(0.0712)
WIF_lot	0.0513	0.156*	0.134*	0.0515
	(0.0689)	(0.0886)	(0.0811)	(0.0746)
WIF_Sup_little		0.0105	0.00648	0.0270
		(0.0509)	(0.0460)	(0.0520)
WIF_Sup_some		-0.0483	-0.0523	-0.0317
		(0.0942)	(0.0855)	(0.0943)
WIF_Sup_lot		-0.00835	-0.0105	0.0308
		(0.112)	(0.104)	(0.109)
Constant	4.146***	4.214***	4.103***	4.115***
	(0.299)	(0.397)	(0.322)	(0.312)
Observations	1,240	999	1,122	1,232
Number of uniqueID	805	676	761	800

Conflicts within the family

The amount of training that workers who were heads of households reported receiving did not affect their levels of conflicts with their families, but those workers who reported that their supervisors had a lot of training reported less frequent conflicts with their families.

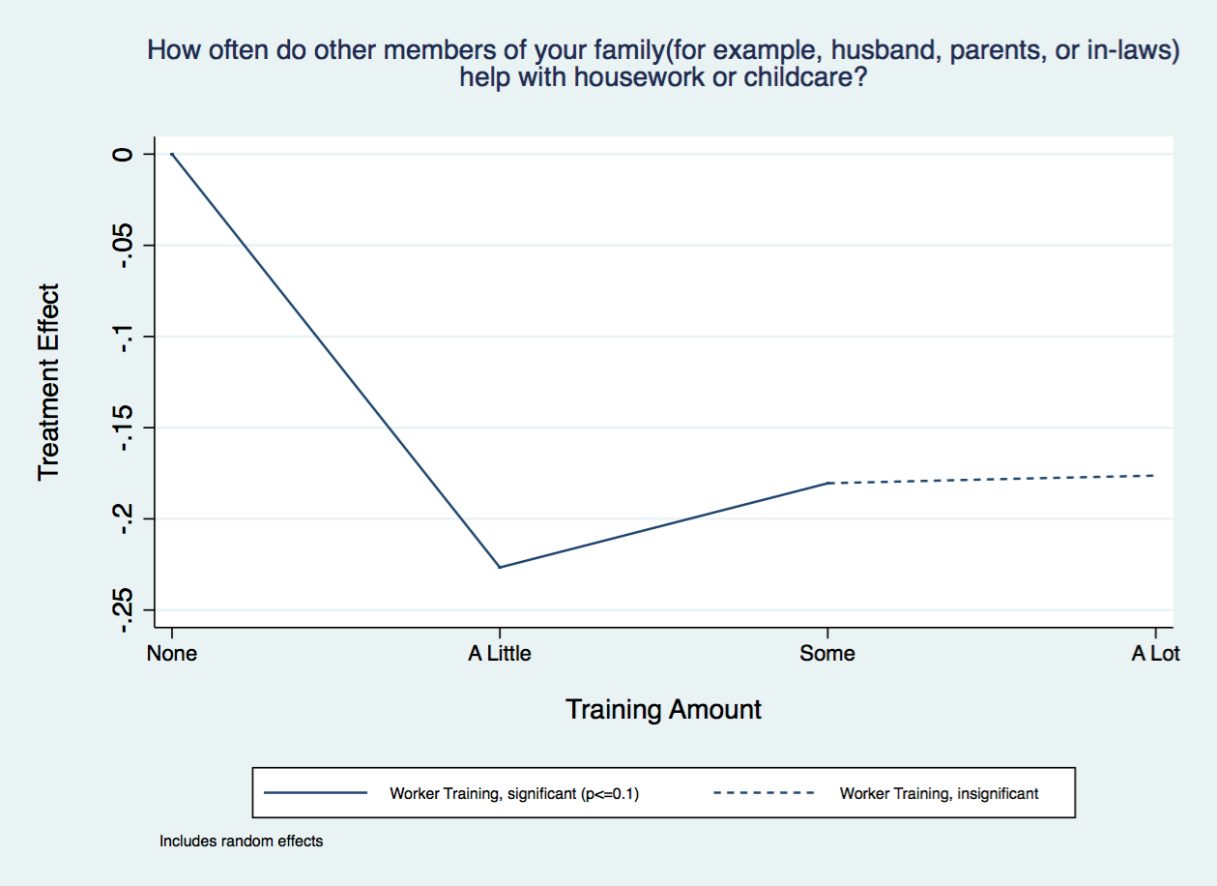
	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	0.151	0.169	0.172	0.168
	(0.159)	(0.160)	(0.180)	(0.162)
WIF_some	0.123	0.0290	0.0624	0.128
	(0.149)	(0.139)	(0.156)	(0.142)
WIF_lot	-0.0413	0.00455	0.0170	0.00908
	(0.156)	(0.156)	(0.182)	(0.165)
WIF_Sup_little		0.0565	0.00594	-0.0584
		(0.142)	(0.124)	(0.105)
WIF_Sup_some		0.197	0.147	0.0690
		(0.120)	(0.102)	(0.109)
WIF_Sup_lot		-0.140	-0.189**	-0.257***
		(0.131)	(0.0957)	(0.0915)
Constant	2.812***	2.466***	2.578***	2.916***
	(0.649)	(0.636)	(0.596)	(0.671)
Observations	385	314	347	382
Number of uniqueID	286	235	264	283

Workers who were heads of households reported yelling less often at their families when their supervisors had received a lot of training.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	0.158	0.142	0.139	0.213*
	(0.136)	(0.129)	(0.107)	(0.125)
WIF_some	0.0736	0.00519	0.0214	0.118
	(0.108)	(0.104)	(0.0884)	(0.104)
WIF_lot	-0.0943	-0.134	-0.114	-0.0203
	(0.155)	(0.160)	(0.141)	(0.143)
WIF_Sup_little		-0.185	-0.165	-0.180*
		(0.137)	(0.113)	(0.0972)
WIF_Sup_some		-0.0641	-0.0490	-0.0592
		(0.0994)	(0.0718)	(0.0585)
WIF_Sup_lot		-0.223*	-0.243**	-0.272**
		(0.129)	(0.112)	(0.117)
Constant	1.270**	1.324***	1.076**	1.526**
	(0.632)	(0.456)	(0.484)	(0.636)
Observations	386	313	347	383
Number of uniqueID	285	234	263	282

Sharing family responsibilities

Workers' self-reported levels of training seemed to decrease help received from family members for housework and childcare, particularly as workers went from no training to some or a little. (One possible explanation is that the WiF training caused them to reassess the possibility of others in the family taking on more housework, and shifted their expectations.)



	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.227**	-0.283*	-0.293**	-0.212*
	(0.115)	(0.160)	(0.122)	(0.127)
WIF_some	-0.180**	-0.174	-0.225***	-0.192**
	(0.0918)	(0.114)	(0.0824)	(0.0883)
WIF_lot	-0.176	-0.151	-0.173	-0.193
	(0.169)	(0.213)	(0.189)	(0.174)
WIF_Sup_little		0.0973	0.0594	0.0422
		(0.122)	(0.135)	(0.121)
WIF_Sup_some		0.0990	0.0616	0.0536
		(0.139)	(0.119)	(0.106)
WIF_Sup_lot		0.126	0.0692	0.0778
		(0.110)	(0.123)	(0.107)
Constant	4.192***	4.058***	4.319***	4.149***
	(0.480)	(0.579)	(0.564)	(0.495)
Observations	1,199	976	1,091	1,193
Number of uniqueID	788	668	749	783

Life Outcomes

Mental health

Workers who received some training reported feeling sad more frequently than those who received a little or a lot of training. However, as the level of supervisor training increased, this seemed to have a beneficial effect on workers' feelings of sadness and depression.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	0.0491	0.0420	0.0884	0.0816
	(0.0616)	(0.0719)	(0.0608)	(0.0578)
WIF_some	0.0632	0.114	0.122*	0.106*
	(0.0635)	(0.0740)	(0.0734)	(0.0611)
WIF_lot	-0.0634	-0.0102	0.0272	0.00132
	(0.0896)	(0.106)	(0.0992)	(0.0868)
WIF_Sup_little		-0.156**	-0.191**	-0.175***
		(0.0703)	(0.0745)	(0.0641)
WIF_Sup_some		-0.0657	-0.0978	-0.0786
		(0.0793)	(0.0795)	(0.0762)
WIF_Sup_lot		-0.222***	-0.264***	-0.238***
		(0.0660)	(0.0657)	(0.0567)
Constant	2.478***	2.285***	2.075***	2.278***
	(0.679)	(0.589)	(0.581)	(0.571)
Observations	1,246	1,005	1,129	1,238
Number of uniqueID	808	681	767	803

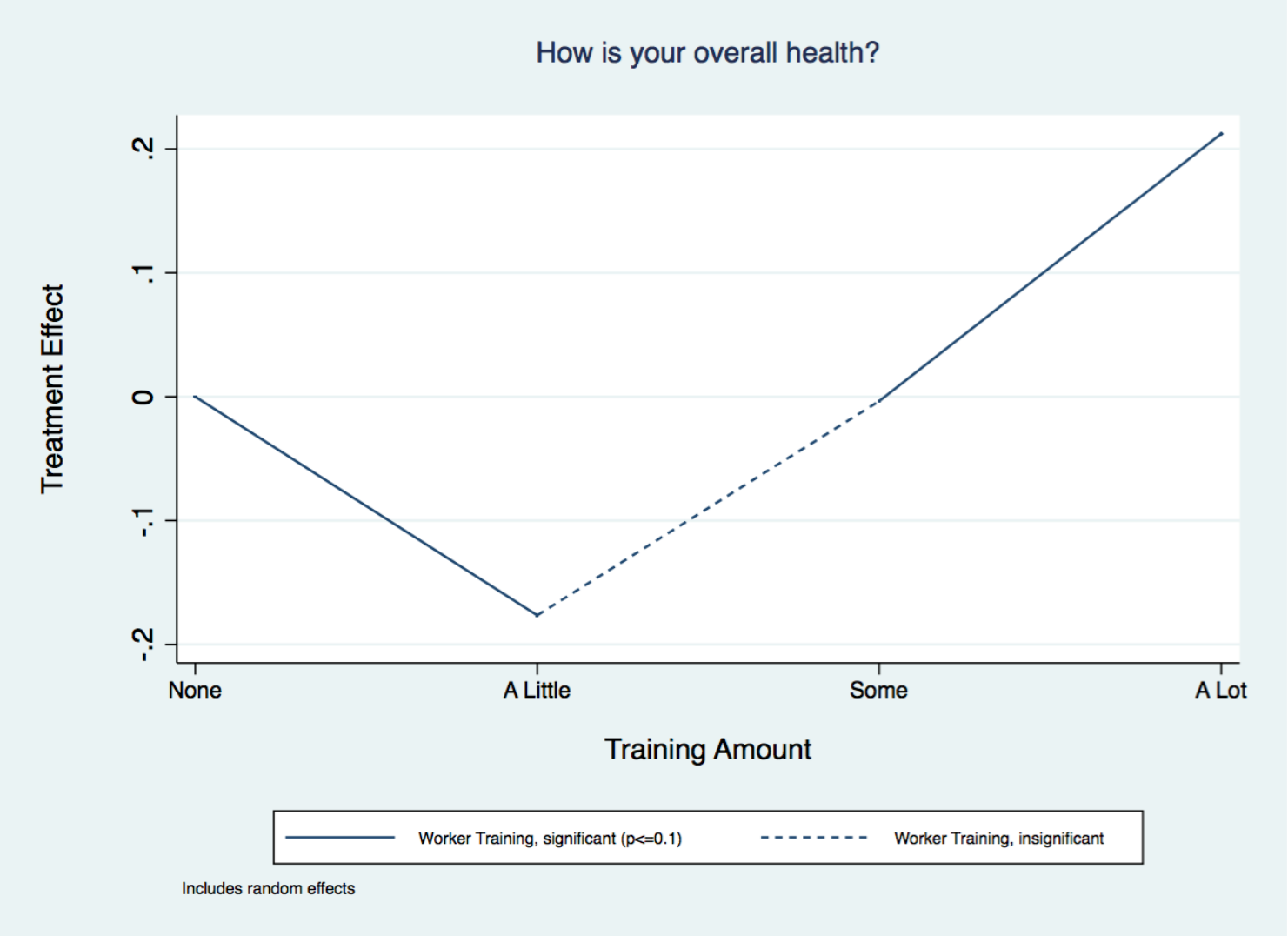
Life Satisfaction

Workers' satisfaction with their lives was higher when their supervisors had had some training; their own levels of training did not predict their responses to this statement.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	0.191	0.0909	0.130	0.172
	(0.135)	(0.173)	(0.153)	(0.148)
WIF_some	0.177	0.00284	0.0454	0.102
	(0.114)	(0.155)	(0.146)	(0.149)
WIF_lot	0.179	0.0564	0.0737	0.131
	(0.149)	(0.199)	(0.183)	(0.191)
WIF_Sup_little		0.204*	0.115	0.0488
		(0.107)	(0.110)	(0.106)
WIF_Sup_some		0.404***	0.318*	0.278
		(0.151)	(0.167)	(0.179)
WIF_Sup_lot		0.243	0.168	0.111
		(0.208)	(0.189)	(0.186)
Constant	2.216***	1.357***	2.221**	2.075**
	(0.824)	(0.344)	(0.866)	(0.844)
Observations	1,236	998	1,120	1,228
Number of uniqueID	802	675	760	797

Physical health

Ratings of overall health decreased slightly for workers who had had a little bit of training but increased for those who reported having had a lot of training.



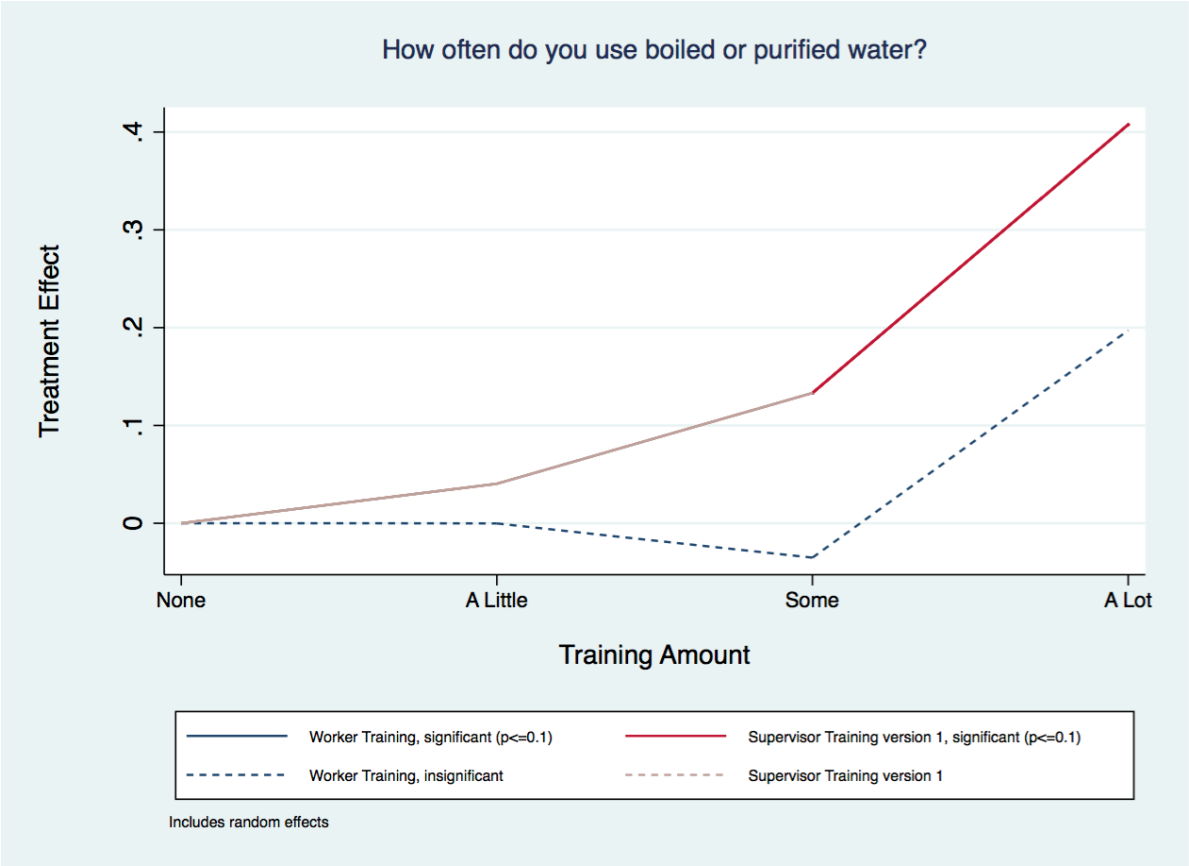
	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.176**	-0.157*	-0.194***	-0.195**
	(0.0857)	(0.0840)	(0.0699)	(0.0760)
WIF_some	-0.00354	0.00561	-0.0482	-0.0223
	(0.0819)	(0.0951)	(0.0829)	(0.0783)
WIF_lot	0.212*	0.190	0.123	0.184
	(0.116)	(0.131)	(0.137)	(0.136)
WIF_Sup_little		0.0136	0.123	0.0870
		(0.117)	(0.100)	(0.0937)
WIF_Sup_some		-0.0259	0.0905	0.0443
		(0.111)	(0.0864)	(0.0810)
WIF_Sup_lot		0.0571	0.167	0.122
		(0.166)	(0.160)	(0.155)
Constant	4.802***	4.529***	4.571***	4.581***
	(0.381)	(0.402)	(0.410)	(0.360)
Observations	1,247	1,006	1,130	1,239
Number of uniqueID	809	682	768	804

Boiled or purified water

Use of boiled or purified water is especially important in countries where tap water is not safe for drinking. Workers who reported receiving more training did not significantly increase their use of safe practices for water, but those who reported that their supervisors had a lot of training did show a significant increase in the use of boiled or purified water.

Prior to WiF training, workers reported using boiled or purified water only rarely, on average.

After supervisors had received a lot of WiF training, the average report rose to sometimes.



	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.0598	-0.000191	-0.0462	-0.0533
	(0.167)	(0.164)	(0.177)	(0.167)
WIF_some	-0.0561	-0.0351	-0.107	-0.0865
	(0.153)	(0.155)	(0.162)	(0.146)
WIF_lot	0.250	0.197	0.128	0.158
	(0.153)	(0.150)	(0.166)	(0.153)
WIF_Sup_little		0.0404	0.00301	-0.0142
		(0.132)	(0.0974)	(0.0864)
WIF_Sup_some		0.133	0.0990	0.0832
		(0.133)	(0.112)	(0.101)
WIF_Sup_lot		0.408***	0.365***	0.365***
		(0.118)	(0.108)	(0.0900)
Constant	2.671***	2.001**	2.425***	2.627***
	(0.672)	(0.808)	(0.765)	(0.733)
Observations	1,241	1,003	1,125	1,233
Number of uniqueID	808	681	766	803

Confidence in childbearing choices

Control over one's own body and reproductive capacities can mean the difference between life and death in some cases. Workers who reported receiving a lot of training through the WiF program expressed more confidence that they could decide how many children they would have (as opposed to having a spouse decide for them, or leaving it to chance).

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.0457	-0.0906	-0.0628	-0.0492
	(0.0667)	(0.0885)	(0.0713)	(0.0666)
WIF_some	-0.0198	-0.0307	-0.00714	-0.00452
	(0.0619)	(0.0772)	(0.0701)	(0.0648)
WIF_lot	0.125*	0.143	0.158*	0.127
	(0.0686)	(0.107)	(0.0936)	(0.0898)
WIF_Sup_little		0.0303	0.0298	0.0140
		(0.0395)	(0.0363)	(0.0432)
WIF_Sup_some		-0.0568	-0.0510	-0.0643
		(0.0712)	(0.0676)	(0.0601)
WIF_Sup_lot		0.0199	0.0283	0.0154
		(0.115)	(0.105)	(0.0932)
Constant	4.947***	4.911***	4.877***	4.918***
	(0.311)	(0.431)	(0.324)	(0.330)
Observations	1,212	982	1,101	1,204
Number of uniqueID	785	664	746	779

Pride at work

Workers expressed more pride in the work they do in the factory when they had supervisors who had undergone any amount of training, and when they themselves had received some or a lot of training.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	0.0735	0.107	0.0588	0.0474
	(0.0888)	(0.0925)	(0.0894)	(0.0873)
WIF_some	0.160**	0.171**	0.0809	0.108
	(0.0773)	(0.0738)	(0.0920)	(0.0755)
WIF_lot	0.269**	0.317***	0.226*	0.200*
	(0.117)	(0.106)	(0.117)	(0.105)
WIF_Sup_little		0.183**	0.183***	0.147**
		(0.0921)	(0.0702)	(0.0718)
WIF_Sup_some		0.174	0.190**	0.143*
		(0.106)	(0.0900)	(0.0825)
WIF_Sup_lot		0.309**	0.330**	0.295**
		(0.152)	(0.140)	(0.133)
Constant	3.098***	2.786***	2.841***	2.972***
	(0.777)	(0.916)	(0.796)	(0.773)
Observations	1,240	999	1,122	1,232
Number of uniqueID	808	680	766	803

Empowerment

Locus of control

One aspect of empowerment is the belief that a person can change their life by changing their own behavior (also known as an internal locus of control). Workers who reported having received a lot of WiF training were more likely to agree with this statement, showing an increased sense of control over their lives, although those who had received just a little or some did not show significant increases in this belief. No effects of reported supervisor training were found.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.0343	-0.0455	-0.0324	-0.0400
	(0.0805)	(0.0837)	(0.0786)	(0.0768)
WIF_some	0.0593	0.0326	0.0605	0.0425
	(0.0790)	(0.0823)	(0.0750)	(0.0702)
WIF_lot	0.240***	0.288***	0.293***	0.208**
	(0.0872)	(0.0838)	(0.0882)	(0.0846)
WIF_Sup_little		0.0580	0.0539	0.0200
		(0.0810)	(0.0824)	(0.0772)
WIF_Sup_some		0.0845	0.0686	0.0404
		(0.0878)	(0.0848)	(0.0771)
WIF_Sup_lot		0.142	0.137	0.117
		(0.0974)	(0.0919)	(0.0954)
Constant	4.767***	4.690***	4.673***	4.748***
	(0.443)	(0.546)	(0.513)	(0.454)
Observations	1,242	1,005	1,126	1,234
Number of uniqueID	807	682	766	802

Self-efficacy

Workers who reported having some training conveyed a sense that they were unable to control the important things in their lives (i.e., low self-efficacy). This sense was weaker for workers who had a lot of training.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	0.103	0.0900	0.0697	0.1000
	(0.0691)	(0.0908)	(0.0793)	(0.0715)
WIF_some	0.177***	0.243***	0.210***	0.161**
	(0.0599)	(0.0667)	(0.0576)	(0.0659)
WIF_lot	0.126*	0.146	0.119	0.0910
	(0.0715)	(0.0890)	(0.0853)	(0.0791)
WIF_Sup_little		-0.0168	-0.0487	-0.0359
		(0.102)	(0.0820)	(0.0913)
WIF_Sup_some		-0.00623	-0.0313	0.00732
		(0.0809)	(0.0785)	(0.0674)
WIF_Sup_lot		0.0690	0.0501	0.0913
		(0.134)	(0.121)	(0.132)
Constant	3.542***	3.356***	3.599***	3.510***
	(0.603)	(0.681)	(0.634)	(0.610)
Observations	1,234	998	1,120	1,226
Number of uniqueID	802	677	762	797

Plan for life goals

Workers who have set a plan for how they will reach their life goals are demonstrating confidence, motivation, and empowerment. Workers with high self-reported levels of training and those whose supervisors had received training were more likely to agree with this statement.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.0117	0.0325	-0.000346	-0.0141
	(0.0657)	(0.0819)	(0.0770)	(0.0658)
WIF_some	0.0491	0.0512	0.0239	0.0243
	(0.0793)	(0.0897)	(0.0799)	(0.0721)
WIF_lot	0.199***	0.231***	0.222***	0.150**
	(0.0751)	(0.0808)	(0.0787)	(0.0751)
WIF_Sup_little		0.0223	0.0451	0.0215
		(0.0720)	(0.0717)	(0.0724)
WIF_Sup_some		0.0900*	0.113*	0.0839
		(0.0546)	(0.0611)	(0.0646)
WIF_Sup_lot		0.161*	0.179**	0.174**
		(0.0854)	(0.0863)	(0.0784)
Constant	4.493***	4.533***	4.513***	4.498***
	(0.261)	(0.303)	(0.310)	(0.279)
Observations	1,236	998	1,118	1,228
Number of uniqueID	803	676	760	798

Earning a promotion

Workers who reported that their supervisors had received any training were more likely to report that they understood how to earn a promotion in the factory; workers' own level of training did not affect their responses on this measure.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.0104	0.0298	-0.0323	-0.0351
	(0.108)	(0.134)	(0.124)	(0.115)
WIF_some	0.0900	0.0452	0.00680	-0.00593
	(0.142)	(0.171)	(0.157)	(0.148)
WIF_lot	0.0395	0.00329	-0.0553	-0.0906
	(0.152)	(0.153)	(0.157)	(0.143)
WIF_Sup_little		0.0620	0.0855	0.0910
		(0.129)	(0.116)	(0.103)
WIF_Sup_some		0.308**	0.329***	0.336***
		(0.140)	(0.125)	(0.123)
WIF_Sup_lot		0.447***	0.458***	0.436***
		(0.125)	(0.134)	(0.136)
Constant	4.562***	4.184***	4.188***	4.262***
	(0.534)	(0.429)	(0.443)	(0.440)
Observations	1,049	893	969	1,045
Number of uniqueID	694	610	664	692

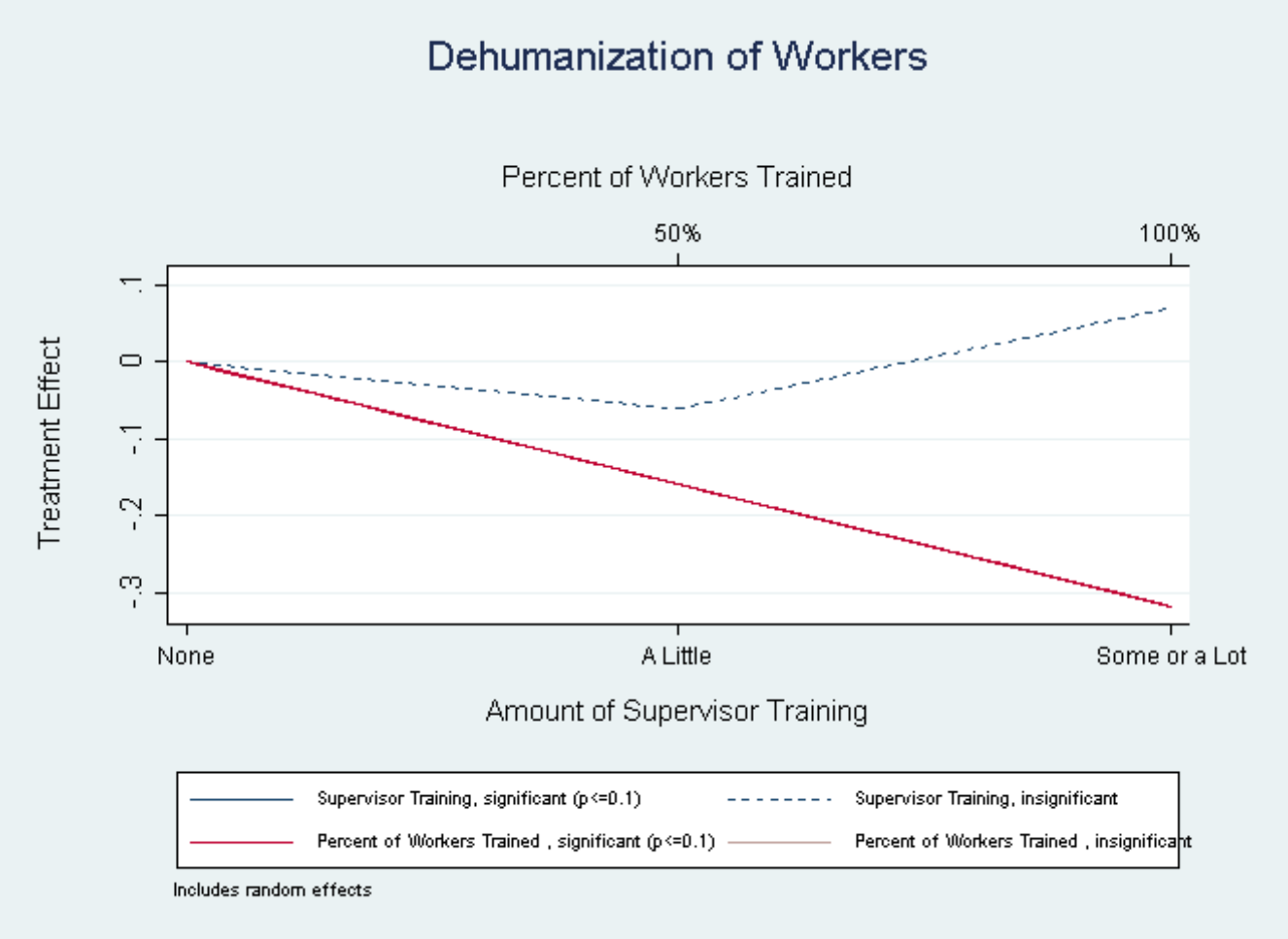
Rehumanization, Objectification, Zero-Sum Beliefs and Norms Related to Abuse at Work

Abuse at work can have many causes. Chief among them is the extent to which workers are objectified and dehumanized in the minds of supervisors and managers. Seeing workers as not fully human leads to thinking that abusing workers is acceptable or even necessary for an effective workplace.

Dehumanization

Workers who have been dehumanized in the minds of supervisors are seen as not fully human. It is common in factories for supervisors to fail to attribute the quality of competence to their subordinates.

This is a composite variable measuring dehumanization. It's an average of the following two items:
The workers in this factory do not think at a very high level.
The workers in this factory do not understand complicated ideas.
Dehumanization makes harsh treatment of workers more likely; however, it decreases as the percentage of trained workers increases.



	(1)
VARIABLES	dehumanization
WIF_Sup_little	-0.0606
	(0.250)
WIF_Sup_some_lot	0.0699
	(0.276)
Workers_Supervised	0.00110
	(0.000702)
workerstrainedpercent	-0.317*
	(0.168)
Constant	2.799***
	(0.756)
Observations	159
Number of uniqueID	123

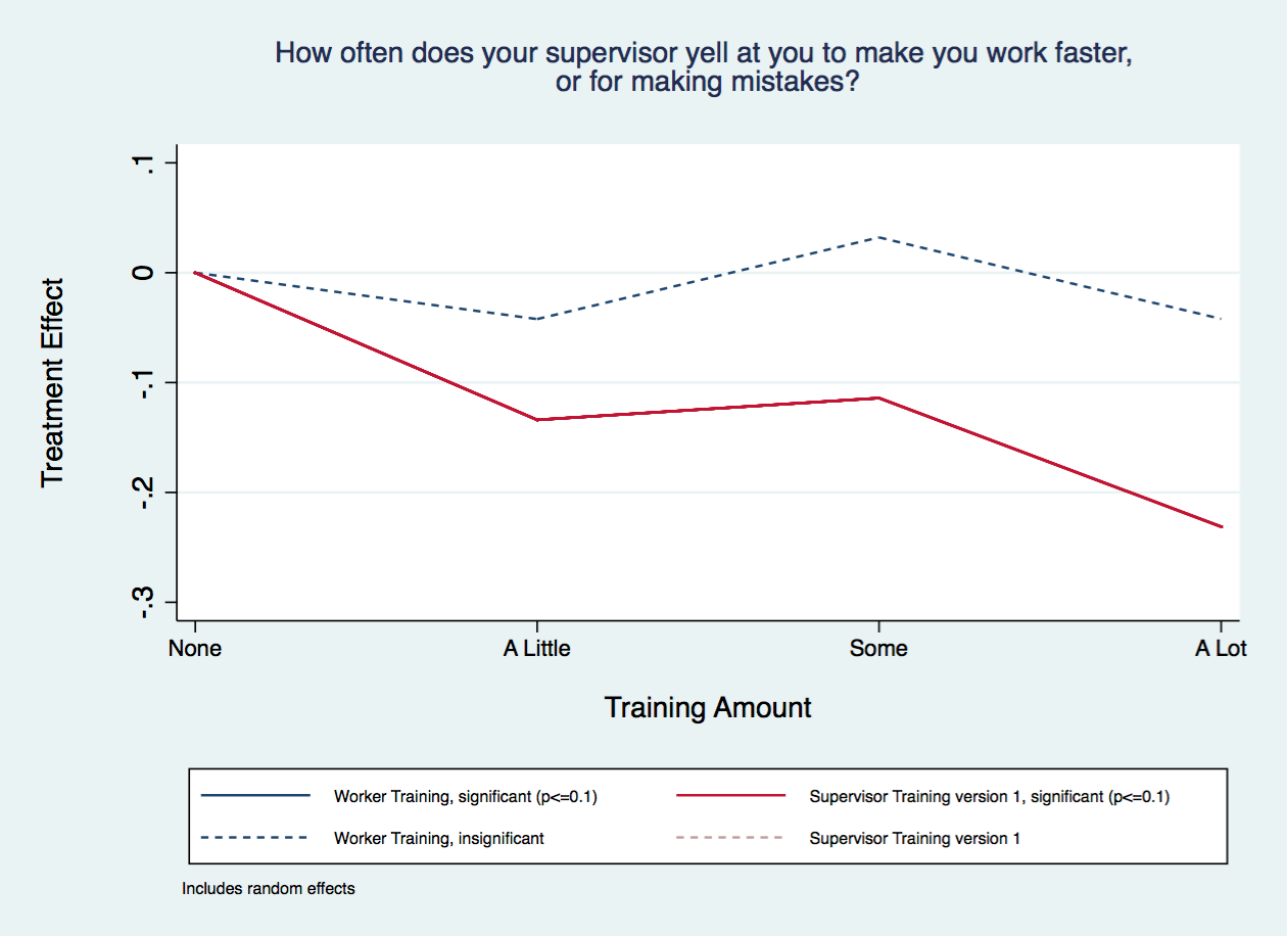
Rehumanization

When asked whether supervisors treated workers with respect, workers who reported that their supervisors had received any training were more inclined to agree; workers' own level of training did not affect their responses on this measure.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	0.0475	0.0129	0.0208	-0.00827
	(0.0856)	(0.117)	(0.107)	(0.0900)
WIF_some	0.121	0.0588	0.0523	0.0509
	(0.110)	(0.124)	(0.126)	(0.115)
WIF_lot	0.258*	0.200	0.161	0.134
	(0.149)	(0.172)	(0.177)	(0.163)
WIF_Sup_little		0.201*	0.202**	0.192*
		(0.112)	(0.0969)	(0.0984)
WIF_Sup_some		0.216*	0.213**	0.192*
		(0.119)	(0.0975)	(0.103)
WIF_Sup_lot		0.452***	0.450***	0.434***
		(0.158)	(0.141)	(0.126)
Constant	2.493***	2.246***	2.222***	2.294***
	(0.673)	(0.732)	(0.658)	(0.661)
Observations	1,197	973	1,088	1,190
Number of uniqueID	783	663	742	779

Rehumanization and abuse at work

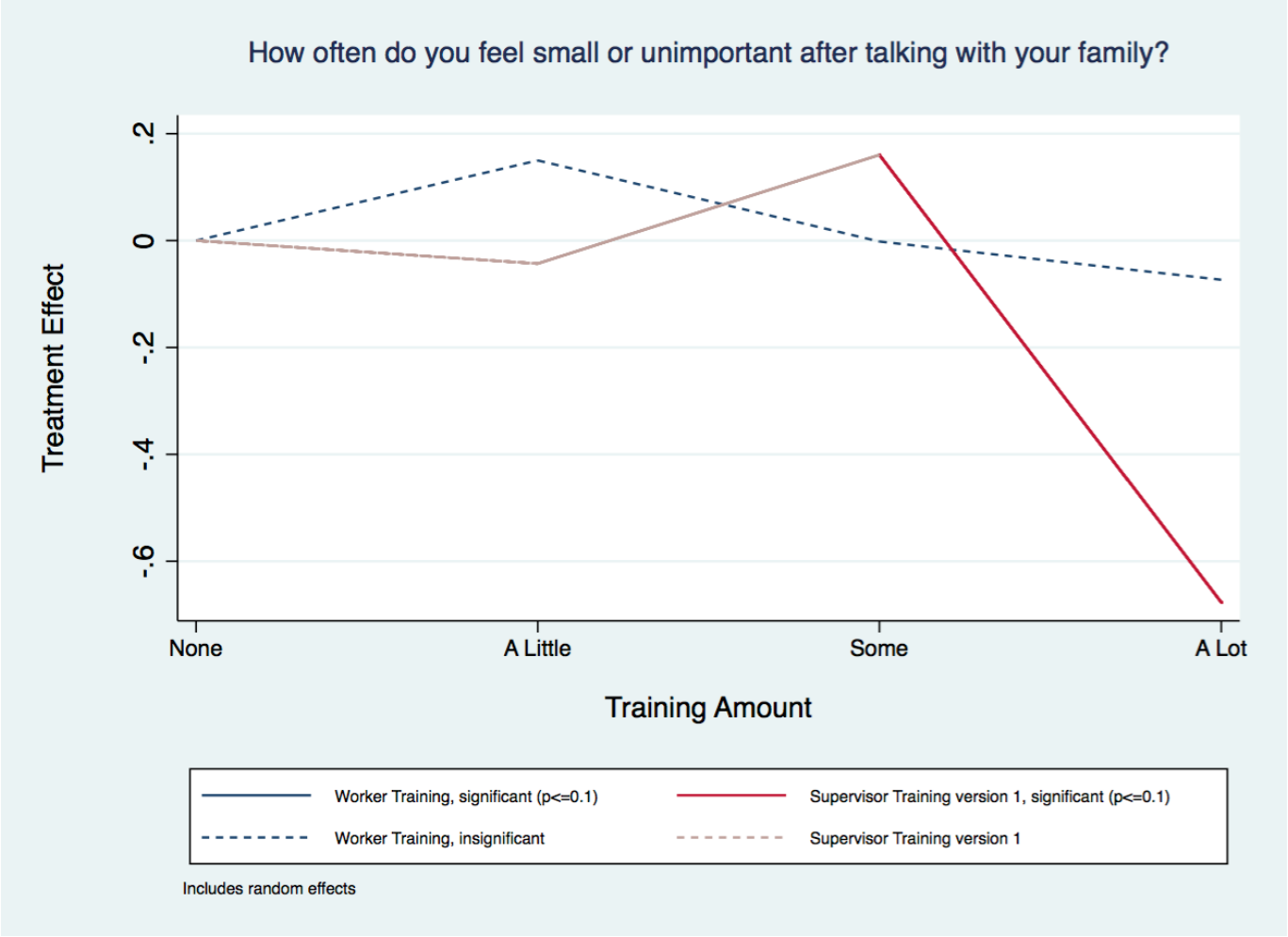
Workers whose supervisors had received any training reported that their supervisors did not yell or verbally abuse them as often; workers' own level of training did not affect this. It is possible that reduced verbal abuse at work led to reduced verbal abuse by workers at home, given that workers also reported yelling at their families less often when their supervisors had received a lot of training. Indeed, verbal abuse by supervisors is a significant predictor of verbal abuse of workers' families.



	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	0.0211	-0.0422	0.00273	0.0490
	(0.0720)	(0.108)	(0.0908)	(0.0750)
WIF_some	0.0188	0.0322	0.0303	0.0435
	(0.0630)	(0.0758)	(0.0638)	(0.0642)
WIF_lot	-0.0627	-0.0420	-0.0216	-0.0140
	(0.107)	(0.114)	(0.114)	(0.102)
WIF_Sup_little		-0.134**	-0.113*	-0.113**
		(0.0645)	(0.0601)	(0.0515)
WIF_Sup_some		-0.114**	-0.0882*	-0.0755*
		(0.0554)	(0.0525)	(0.0454)
WIF_Sup_lot		-0.231**	-0.204**	-0.183**
		(0.0976)	(0.0954)	(0.0920)
Constant	1.560***	1.340***	1.642***	1.642***
	(0.414)	(0.188)	(0.378)	(0.389)
Observations	1,235	1,001	1,124	1,229
Number of uniqueID	804	680	766	800

Rehumanization also affects families

Workers who were heads of households and who reported that their supervisors had received a lot of training expressed that they were less likely to feel small or unimportant after talking with their families; their own level of training did not affect this outcome.



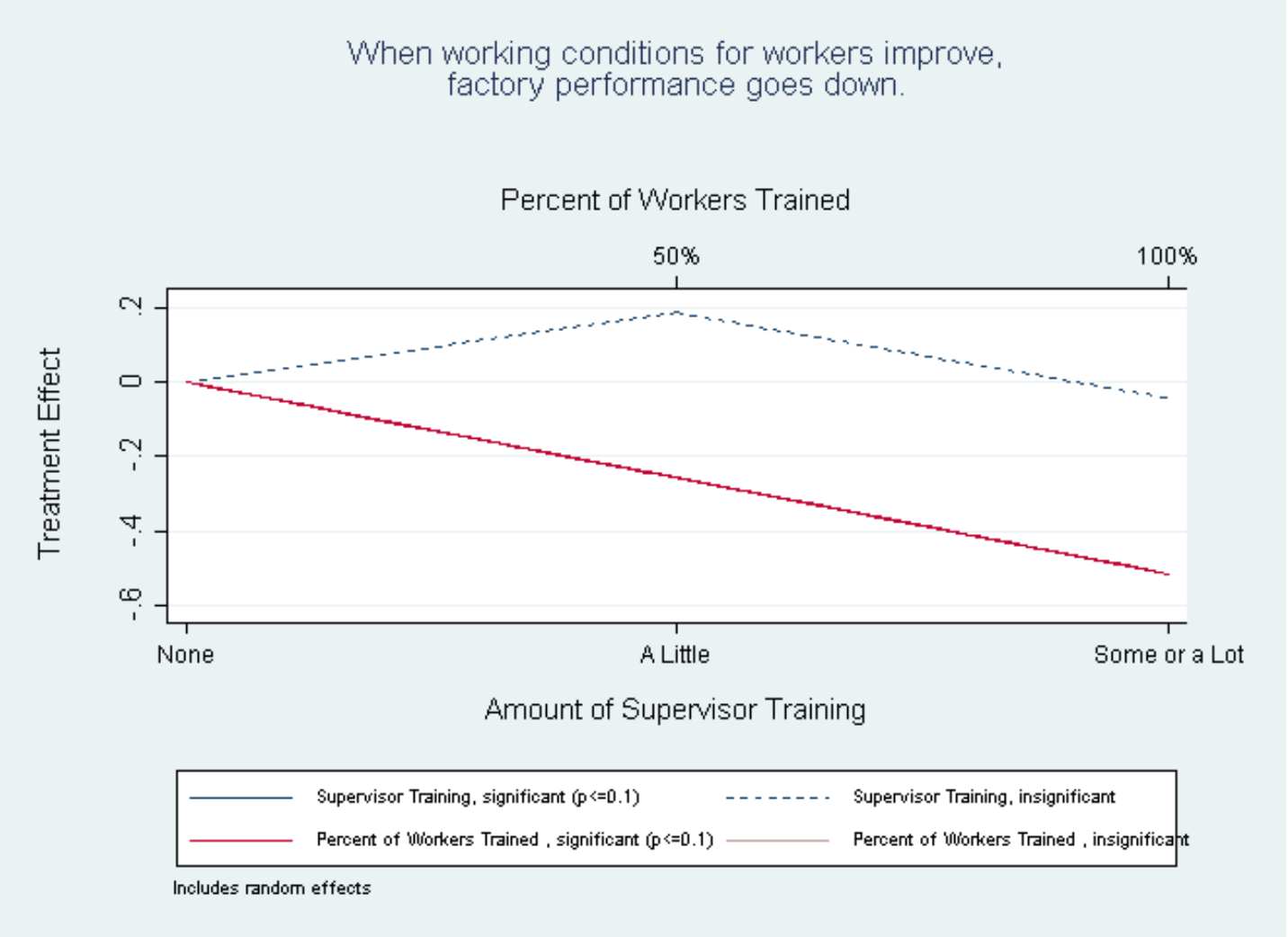
	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	0.0447	0.150	0.0231	0.0562
	(0.184)	(0.212)	(0.200)	(0.178)
WIF_some	0.0346	-0.00171	-0.0568	0.0234
	(0.237)	(0.231)	(0.213)	(0.208)
WIF_lot	-0.167	-0.0733	-0.137	-0.0708
	(0.221)	(0.229)	(0.222)	(0.182)
WIF_Sup_little		-0.0431	0.0297	-0.0370
		(0.139)	(0.141)	(0.118)
WIF_Sup_some		0.160	0.265	0.209
		(0.154)	(0.169)	(0.139)
WIF_Sup_lot		-0.677***	-0.535***	-0.618***
		(0.205)	(0.152)	(0.184)
Constant	3.399***	2.827***	3.293***	3.567***
	(0.395)	(0.381)	(0.264)	(0.341)
Observations	382	311	345	379
Number of uniqueID	282	233	262	279

Zero sum beliefs

Supervisors who see workers in dehumanized terms are more likely to also think that abusing workers is necessary for high productivity.

This item measures zero-sum beliefs: the idea that improved working conditions necessarily means reduced performance.

Prior to training, supervisors, on average, reported a neutral view.



	(1)
VARIABLES	ZSB
WIF_Sup_little	0.187
	(0.166)
WIF_Sup_some_lot	-0.0428
	(0.123)
Workers_Supervised	0.00122
	(0.00127)
workerstrainedpercent	-0.516**
	(0.217)
Constant	3.176***
	(0.611)
Observations	165
Number of uniqueID	130

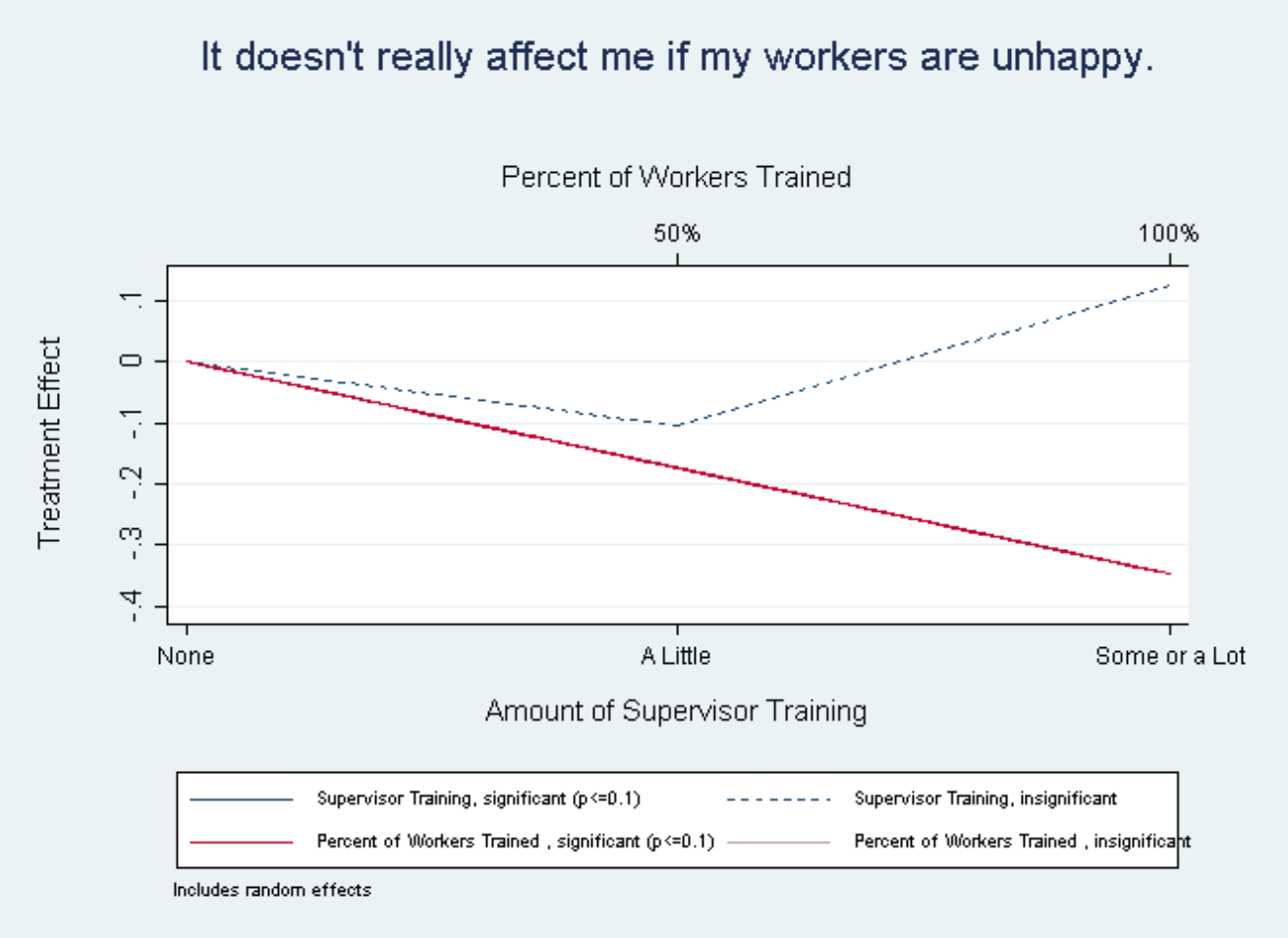
This is a potential obstacle to support for training. Fortunately, we see that as the percentage of workers who have been trained goes up, supervisors' endorsement of zero-sum beliefs goes down. That is, they are more likely to see that treating workers humanely is consistent with strong firm performance.

Outcome dependency

Effective organizations have an understanding of outcome dependency: the realization of the pursuit of a common goal.

Supervisors who do not appreciate outcome dependency are more likely to be indifferent to the consequence of abusing workers.

Supervisors are more likely to treat workers fairly if they feel that their own success depends on it.



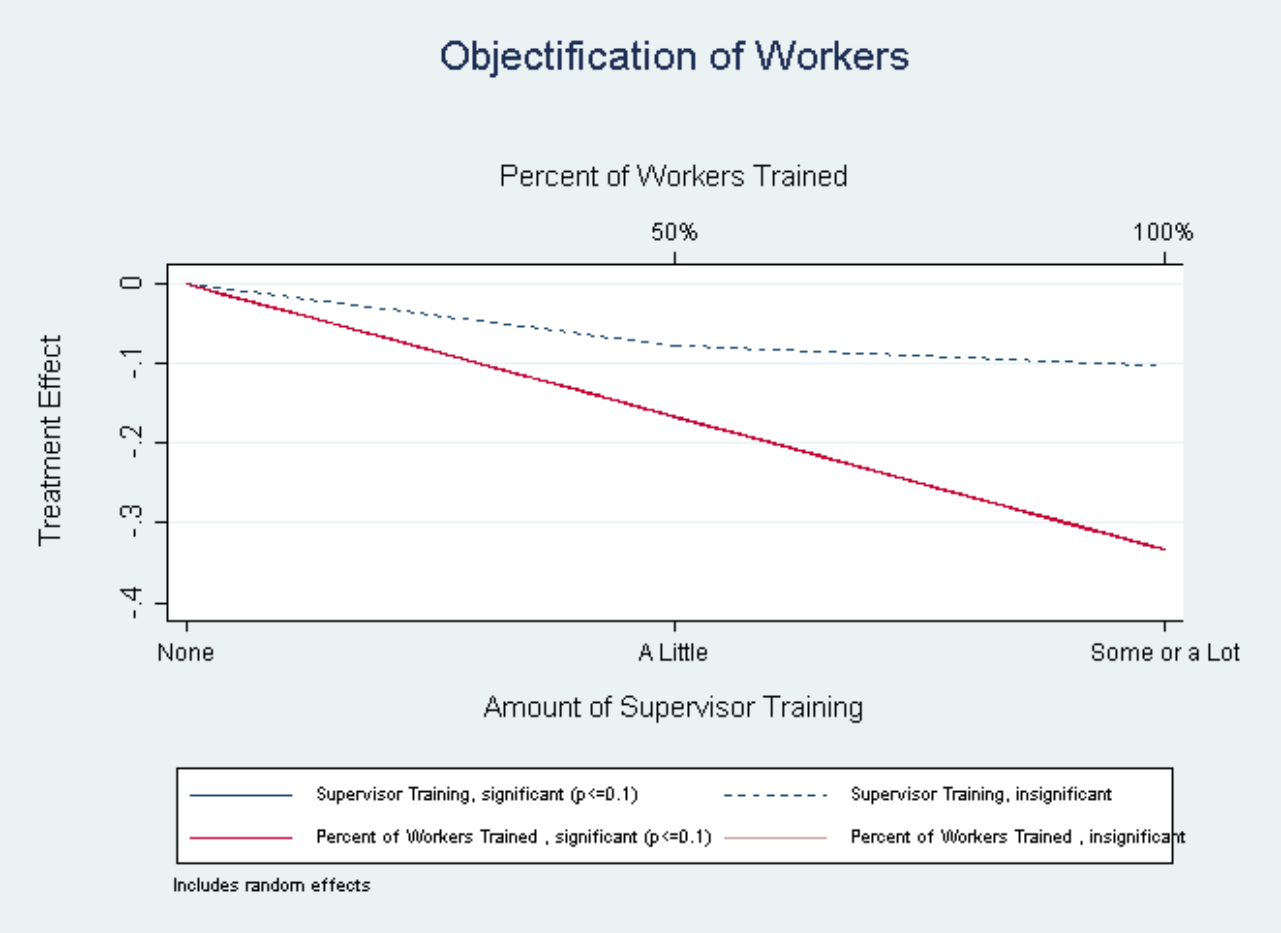
	(1)
VARIABLES	G3
WIF_Sup_little	-0.105
	(0.190)
WIF_Sup_some_lot	0.125
	(0.162)
Workers_Supervised	0.000876
	(0.00111)
workerstrainedpercent	-0.348*
	(0.190)
Constant	0.856*
	(0.461)
Observations	166
Number of uniqueID	130

This item measures outcome dependency. We found that as the percentage of trained workers increased, supervisors were more likely to feel a sense of outcome dependence with their workers (i.e., more likely to disagree with this item – a positive result).

Objectification

Objectification, the idea that supervisors see workers only as a means to an end, is another mechanism that contributes to abuse at work.

This is a composite variable measuring objectification. It's an average of the following two items:
I think more about what my workers can do for me than what I can do for them.
I tend to communicate with my workers only when I need something from them.

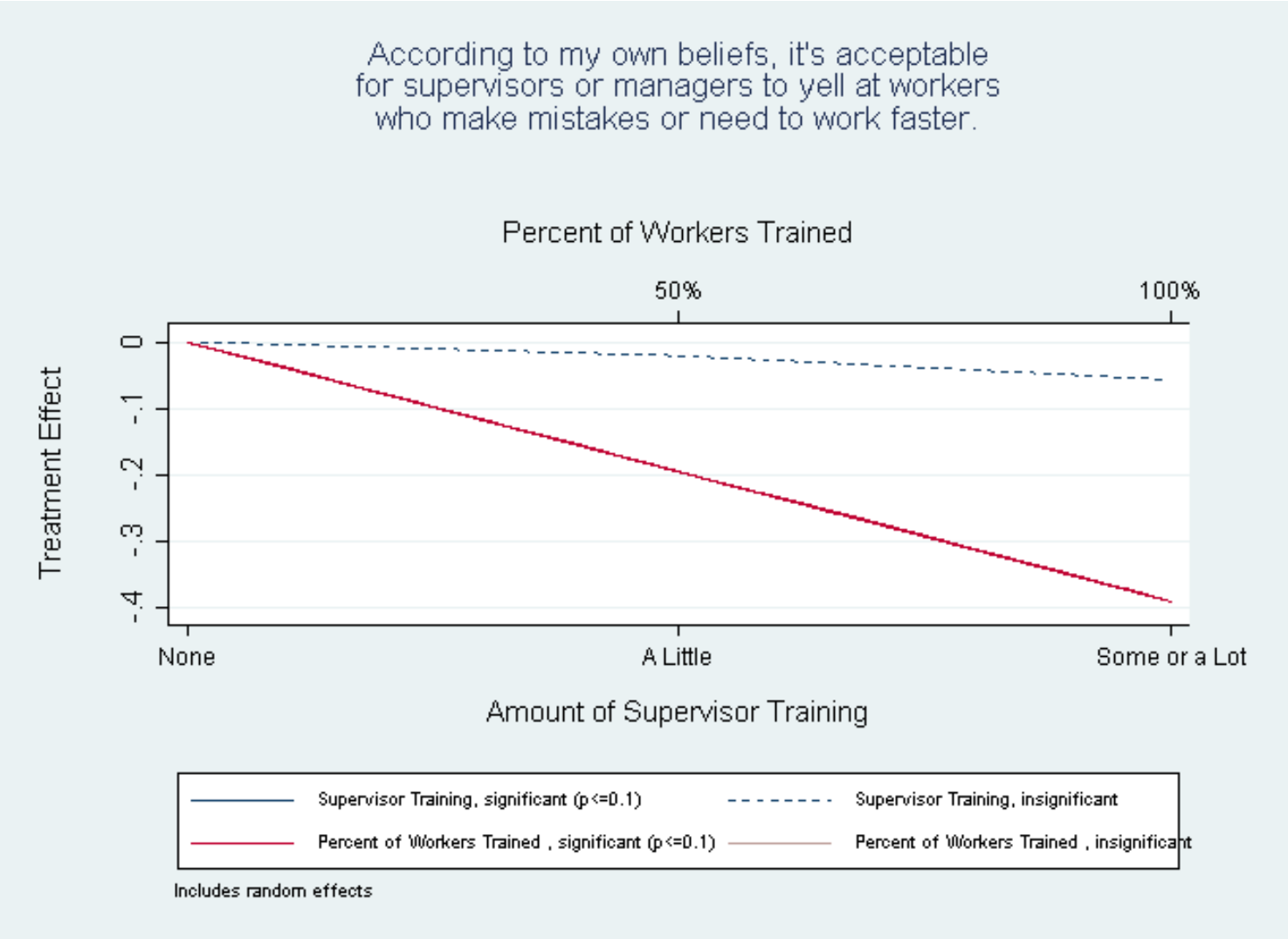


	(1)
VARIABLES	objectification
WIF_Sup_little	-0.0774
	(0.137)
WIF_Sup_some_lot	-0.103
	(0.161)
Workers_Supervised	-0.000658
	(0.000803)
workerstrainedpercent	-0.334*
	(0.196)
Constant	2.916***
	(0.511)
Observations	158
Number of uniqueID	124

Again, supervisor training shows no effect, but as the percentage of workers trained increases, objectification significantly decreases.

Verbal Abuse

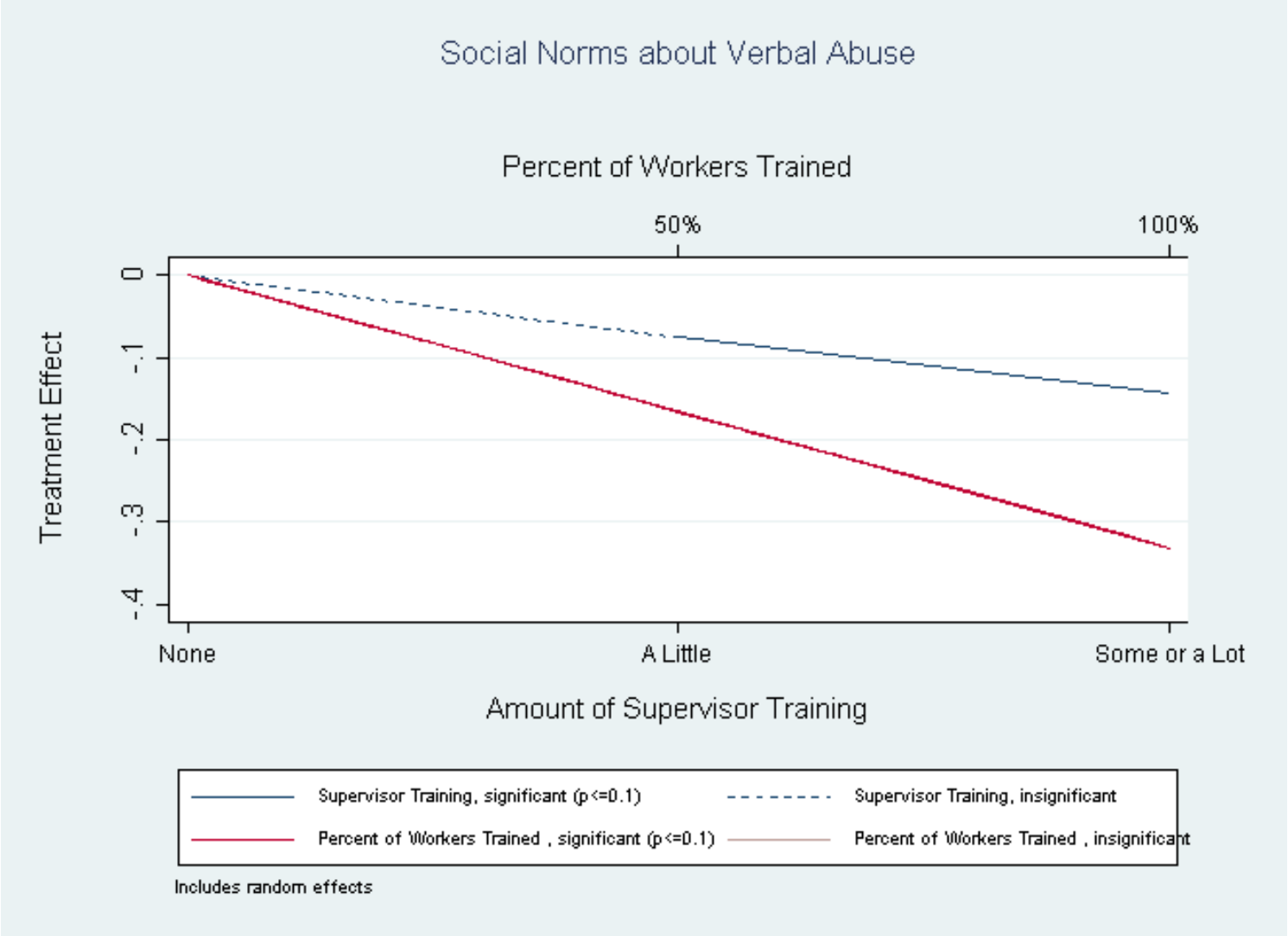
This item measures personal beliefs about verbal abuse. Supervisor training did not affect beliefs, but percentage of workers trained did: as the percentage increased, supervisors were more likely to report that verbal abuse is unacceptable.



	(1)
VARIABLES	personalbeliefsVA
WIF_Sup_little	-0.0210
	(0.107)
WIF_Sup_some_lot	-0.0571
	(0.0775)
Workers_Supervised	8.47e-05
	(0.000505)
workerstrainedpercent	-0.391***
	(0.150)
Constant	1.903***
	(0.320)
Observations	167
Number of uniqueID	130

Verbal Abuse

We measured social norms around verbal abuse and found that as the percentage of trained workers increased, supervisors were more likely to report negative social norms around verbal abuse (i.e., that verbal abuse is uncommon and unacceptable in their factory).



	(1)
VARIABLES	socialnormsVA
WIF_Sup_little	-0.0755
	(0.0800)
WIF_Sup_some_lot	-0.144*
	(0.0868)
Workers_Supervised	0.000323
	(0.000495)
workerstrainedpercent	-0.331**
	(0.149)
Constant	2.104***
	(0.336)
Observations	167
Number of uniqueID	130

Gender Attitudes

Gender attitudes

The belief that girls should get the same opportunities as boys is related to the belief that women and men are capable of similar accomplishments. Workers who reported receiving a lot of training through the WiF program showed increased agreement with this statement endorsing gender equality.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.120	-0.147*	-0.146*	-0.120
	(0.0763)	(0.0882)	(0.0828)	(0.0788)
WIF_some	0.0669	0.0719	0.0466	0.0723
	(0.0586)	(0.0788)	(0.0762)	(0.0712)
WIF_lot	0.139**	0.247***	0.207**	0.148*
	(0.0641)	(0.0838)	(0.0815)	(0.0839)
WIF_Sup_little		0.0829	0.0699	0.0311
		(0.0557)	(0.0525)	(0.0512)
WIF_Sup_some		0.0274	0.0209	-0.0147
		(0.0798)	(0.0773)	(0.0854)
WIF_Sup_lot		-0.000337	-0.00128	-0.00337
		(0.106)	(0.0972)	(0.104)
Constant	4.527***	4.351***	4.357***	4.493***
	(0.439)	(0.540)	(0.489)	(0.464)
Observations	1,237	999	1,122	1,229
Number of uniqueID	801	677	762	796

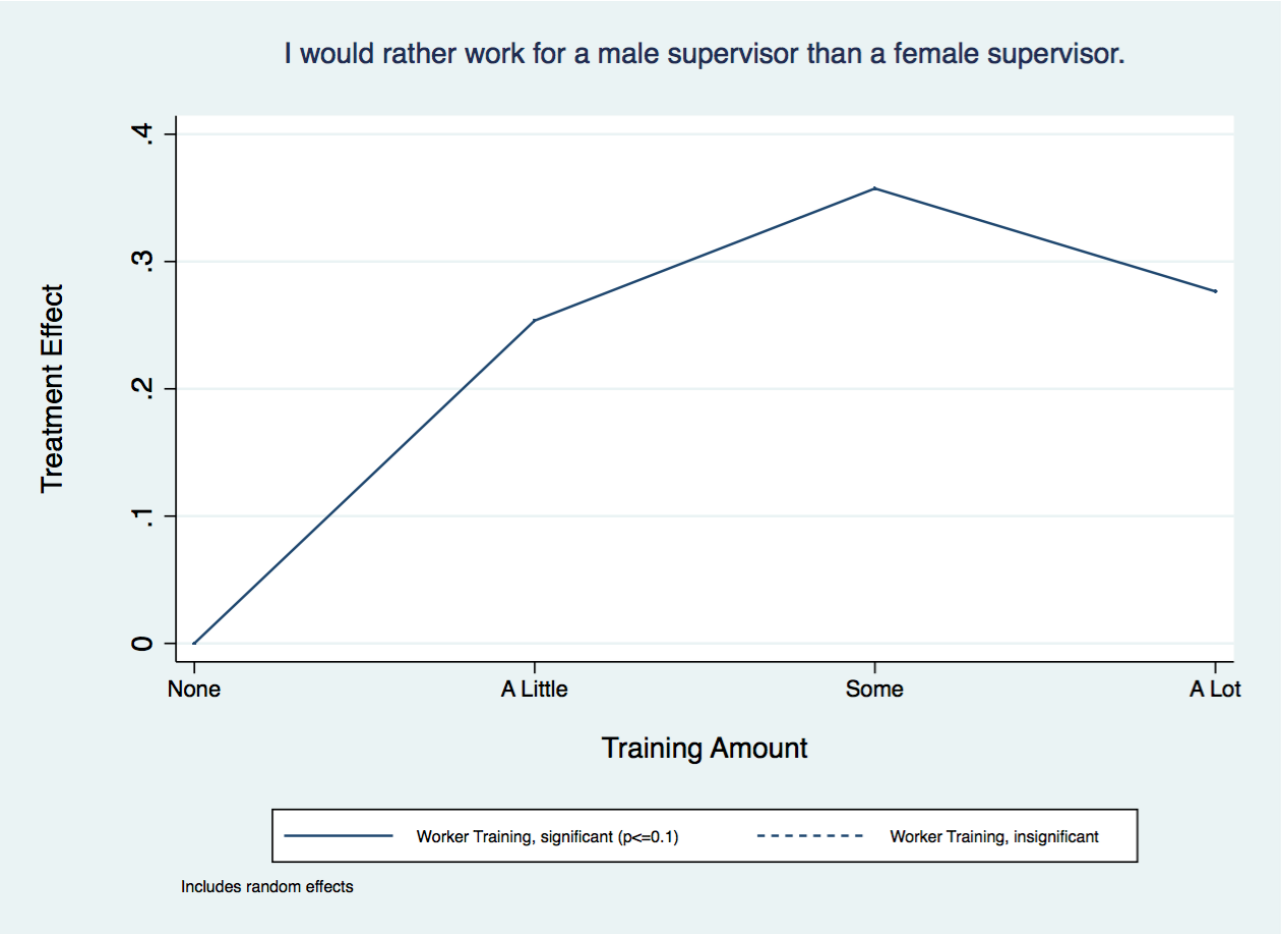
Gender attitudes

Workers' self-reported levels of training did not seem to influence their agreement with the statement that men and women's differences are due to socialization (rather than innate biological differences), but those with supervisors with a lot of training expressed more agreement with this gender-egalitarian statement.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	-0.0740	-0.124	-0.102	-0.0752
	(0.0885)	(0.108)	(0.0932)	(0.0892)
WIF_some	-0.0137	-0.0509	-0.0454	-0.0291
	(0.0686)	(0.0764)	(0.0704)	(0.0670)
WIF_lot	0.0854	0.105	0.0989	0.0516
	(0.0875)	(0.0935)	(0.0913)	(0.0963)
WIF_Sup_little		0.0467	0.0216	-0.0230
		(0.0903)	(0.0651)	(0.0547)
WIF_Sup_some		0.0855	0.0592	0.0199
		(0.0892)	(0.0667)	(0.0695)
WIF_Sup_lot		0.158*	0.130*	0.113
		(0.0871)	(0.0765)	(0.0724)
Constant	4.450***	4.550***	4.457***	4.510***
	(0.570)	(0.757)	(0.636)	(0.605)
Observations	1,209	981	1,100	1,203
Number of uniqueID	786	665	749	782

Receptivity to female leadership

Workers who had received any training expressed more agreement with the gender-biased statement that they would rather have a male supervisor than a female supervisor. It is possible that studying gender and status may suggest that male supervisors have higher status than female supervisors, although it is unclear why this pattern emerges.



	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	0.254**	0.443***	0.301***	0.263**
	(0.115)	(0.118)	(0.110)	(0.119)
WIF_some	0.357***	0.430***	0.371***	0.366***
	(0.0929)	(0.0963)	(0.0942)	(0.0910)
WIF_lot	0.277***	0.243***	0.197**	0.256***
	(0.0853)	(0.0931)	(0.0902)	(0.0961)
WIF_Sup_little		-0.177	-0.117	-0.0959
		(0.127)	(0.109)	(0.107)
WIF_Sup_some		-0.125	-0.0800	-0.0572
		(0.120)	(0.102)	(0.0920)
WIF_Sup_lot		0.0170	0.0613	0.0573
		(0.124)	(0.138)	(0.135)
Constant	3.276***	3.308***	3.191***	3.229***
	(0.685)	(0.824)	(0.688)	(0.676)
Observations	1,190	974	1,084	1,184
Number of uniqueID	779	665	739	775

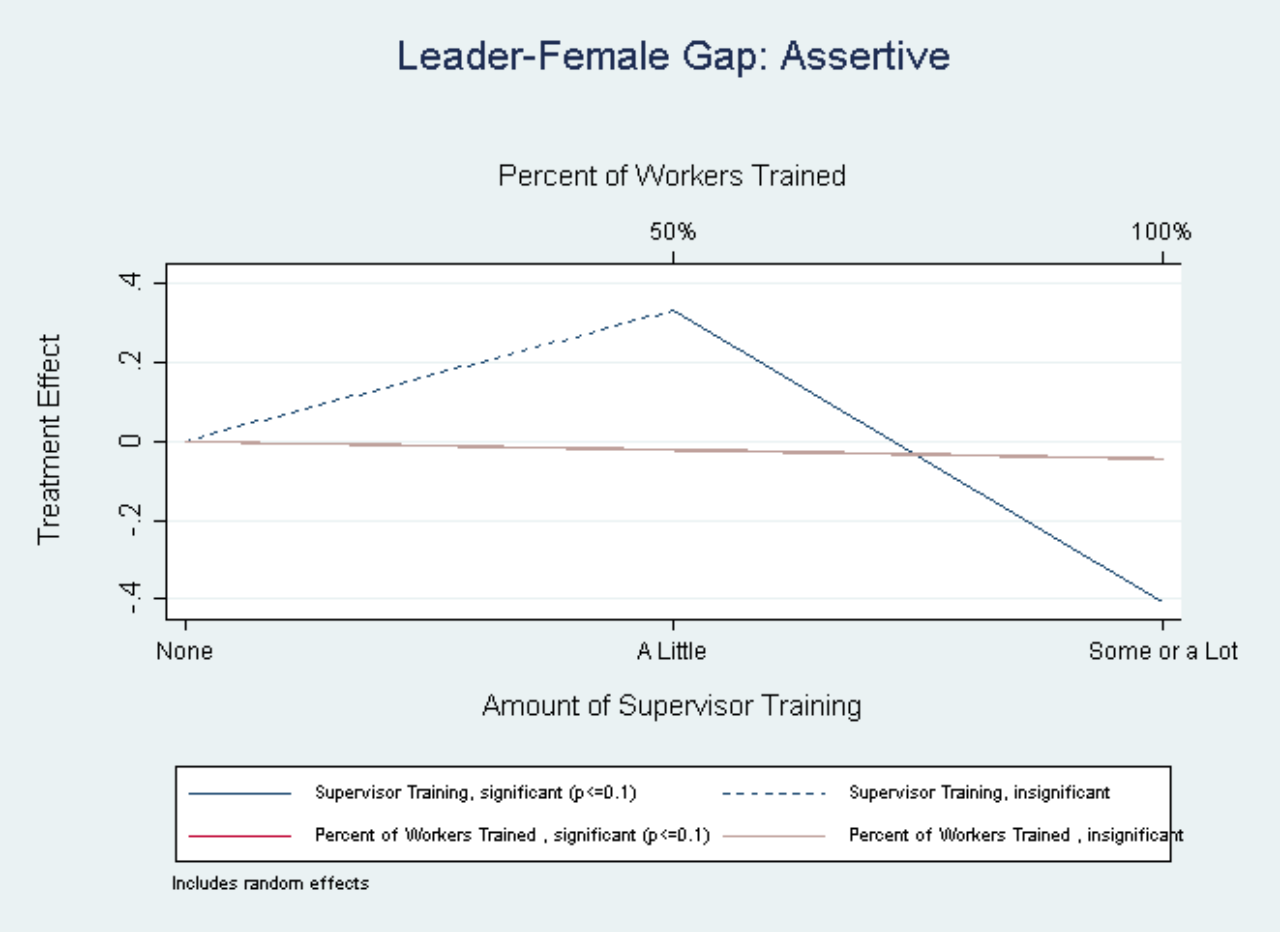
Receptivity to female leadership

In another example of increasing gender bias, workers who had received some or a lot of training were more likely to agree with the statement that women don't make good supervisors. It is unclear what is evoking this response. Perhaps learning about obstacles to gender equality made participants more pessimistic about women's prospects as leaders.

	(1)	(2)	(3)	(4)
VARIABLES	Worker	Sup_V1	Sup_V2	Sup_V3
WIF_little	0.0863	0.176*	0.0429	0.0705
	(0.0945)	(0.103)	(0.103)	(0.102)
WIF_some	0.192*	0.285**	0.182	0.169
	(0.105)	(0.141)	(0.139)	(0.123)
WIF_lot	0.319***	0.391***	0.317***	0.277***
	(0.0802)	(0.126)	(0.123)	(0.104)
WIF_Sup_little		-0.0717	0.0142	0.0509
		(0.105)	(0.118)	(0.100)
WIF_Sup_some		-0.0531	0.0263	0.0782
		(0.112)	(0.131)	(0.105)
WIF_Sup_lot		-0.0424	0.0480	0.127
		(0.181)	(0.186)	(0.176)
Constant	3.566***	3.578***	3.374***	3.357***
	(0.852)	(1.012)	(0.830)	(0.806)
Observations	1,219	991	1,110	1,212
Number of uniqueID	792	672	755	787

Receptivity to female leadership

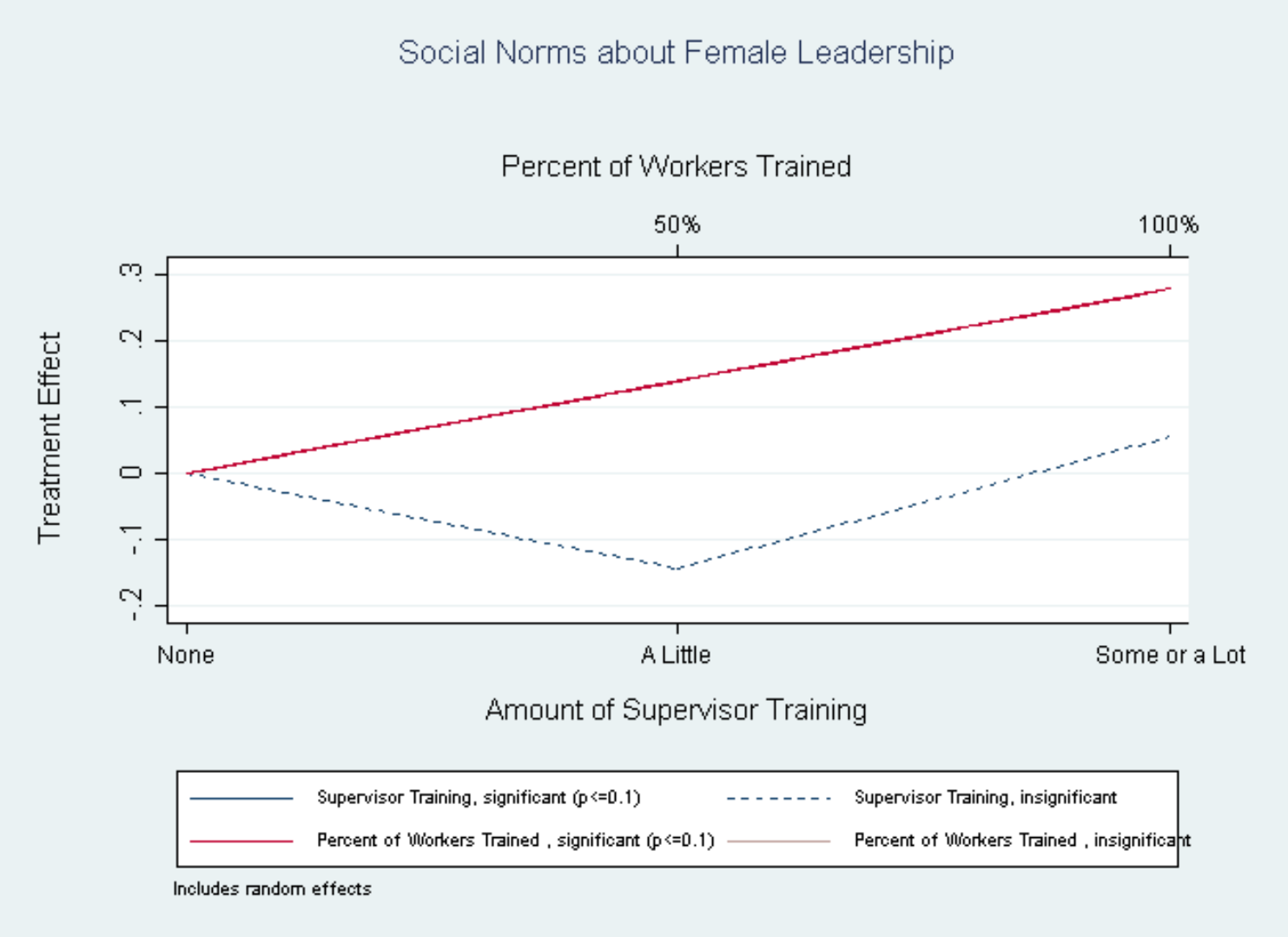
While we did not observe increased receptivity to female leaders in the prior measures, some of the disconnect between perceptions of women and perceptions of good leaders narrowed. Supervisors indicated how important assertiveness is in a good leader, and to what extent their female workers are assertive. This item measures the difference between perceptions of female workers as assertive and good leaders as assertive. We see that this female/leader disconnect goes down with supervisor training.



	(1)
VARIABLES	assertivediff
WIF_Sup_little	0.331
	(0.207)
WIF_Sup_some_lot	-0.406***
	(0.151)
Workers Supervised	0.00171**
	(0.000845)
workerstrainedpercent	-0.0429
	(0.246)
female	-0.167
	(0.143)
Constant	0.977
	(0.999)
Observations	107
Number of uniqueID	82

Receptivity to female leadership

We also measured social norms about female leadership. We found no effect from supervisor training, but as the percentage of workers trained increased, supervisors were more likely to report positive social norms around female leadership (this variable is a composite of the following two items: *"In this factory, it is common for women to have leadership roles"* and *"In this factory, it is seen as a good thing for women to have leadership roles"*).



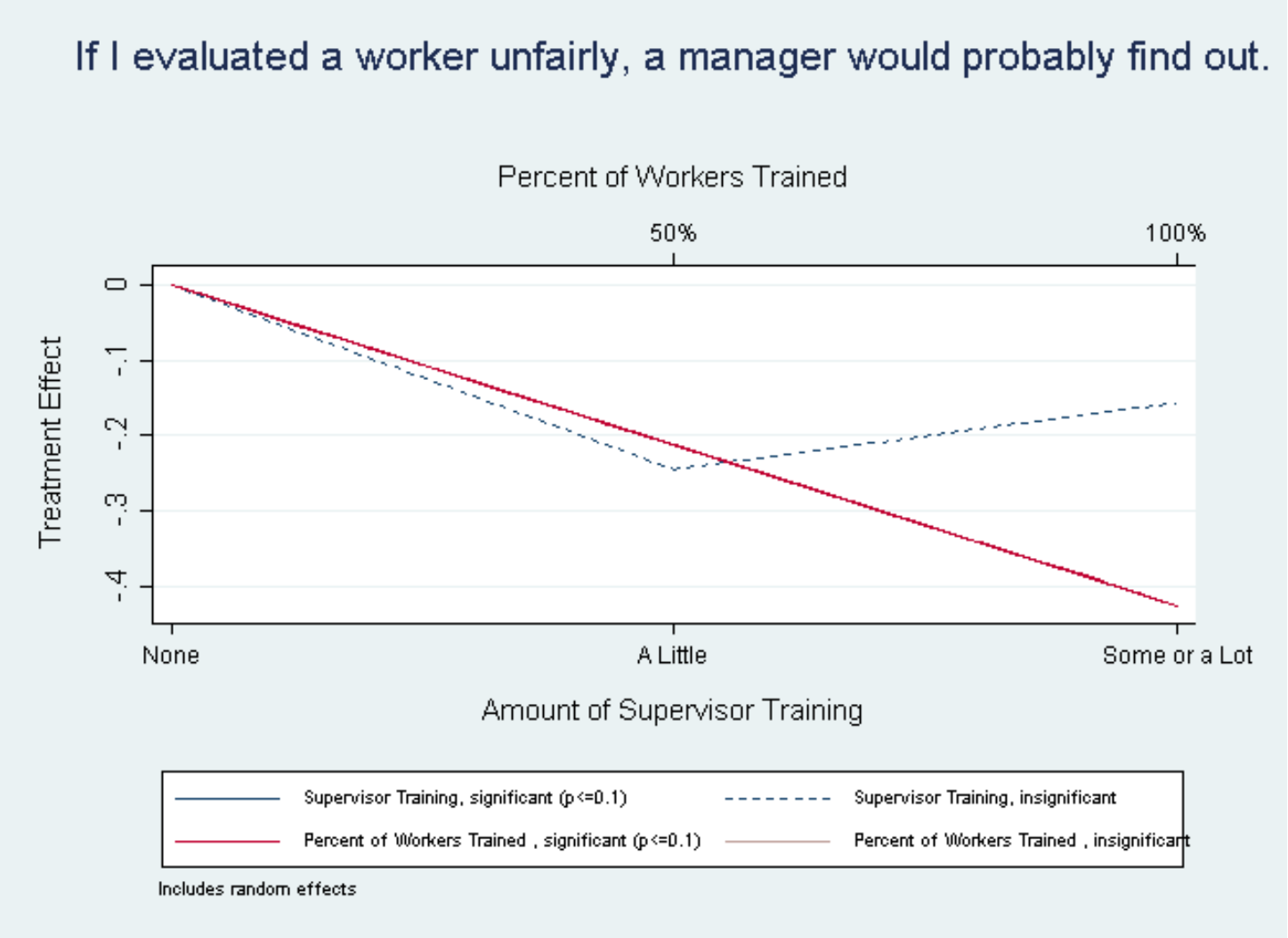
	(1)
VARIABLES	socialnormsFL
WIF_Sup_little	-0.144
	(0.148)
WIF_Sup_some_lot	0.0554
	(0.121)
Workers_Supervised	-0.000698
	(0.000671)
workerstrainedpercent	0.280*
	(0.170)
Constant	3.416***
	(0.597)
Observations	163
Number of uniqueID	126

Sexual Harassment

Sexual harassment is common in nearly all workplaces. Fortunately, the worst forms can be reduced by altering certain structures of an organization. Structures that deter sexual harassment are (1) holding supervisors accountable for their decisions particularly as they relate to production bonuses and promotions, (2) establishing organizational norms prohibiting sexual harassment, (3) providing victims with effective complaint mechanisms and (4) minimizing power asymmetries.

Accountability

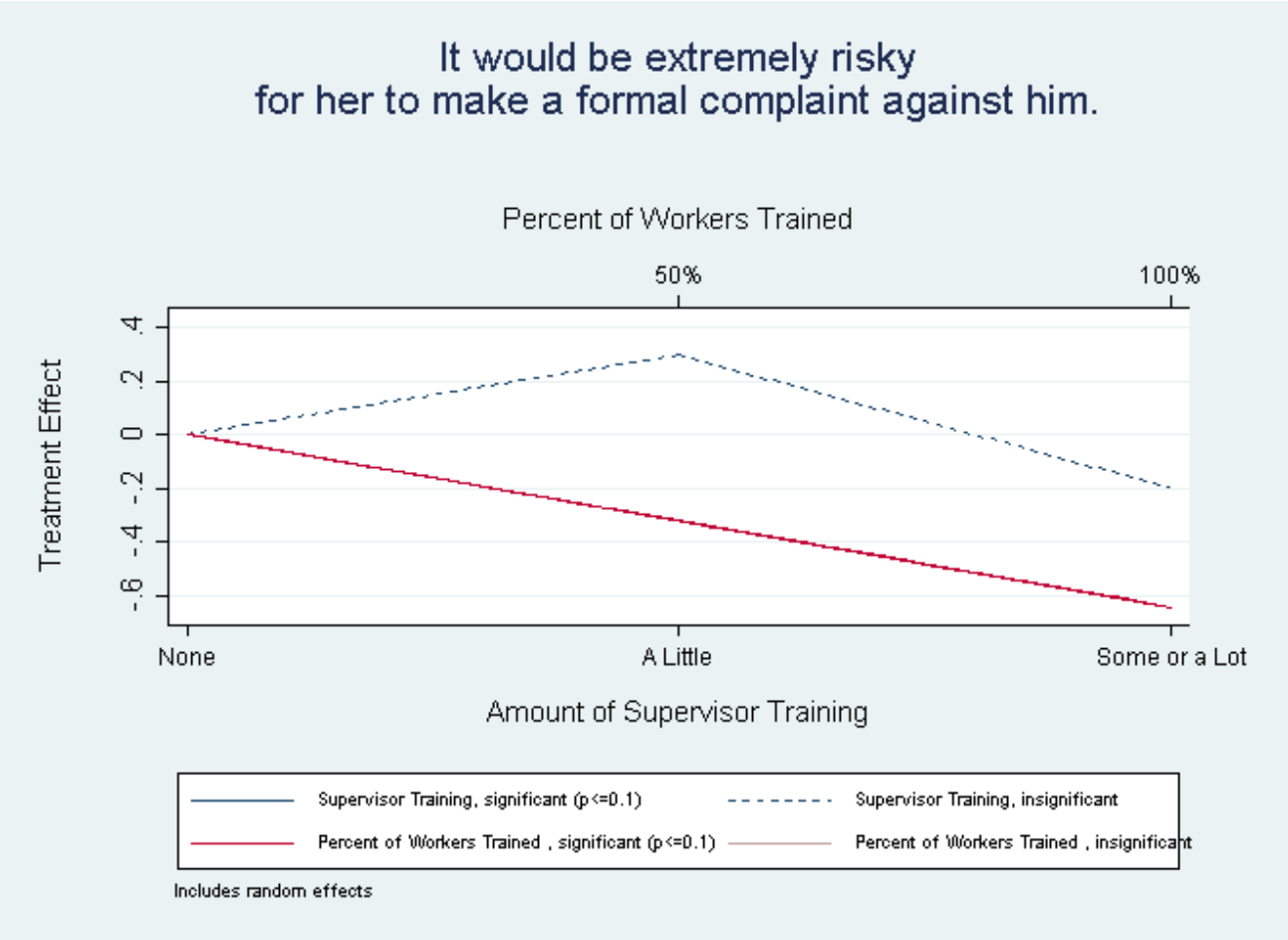
Supervisors are more likely to treat workers fairly if they believe that they will be held accountable for their actions. We see that accountability actually decreased as the percentage of workers trained increased, although supervisors still typically agreed with this item.



	(1)
VARIABLES	F3
WIF_Sup_little	-0.245
	(0.256)
WIF_Sup_some_lot	-0.156
	(0.160)
Workers_Supervised	0.000914
	(0.00309)
workerstrainedpercent	-0.425**
	(0.187)
Constant	4.466***
	(0.500)
Observations	161
Number of uniqueID	124

Organizational tolerance for sexual harassment

Supervisors were asked to respond to the following scenario: "Imagine that a supervisor in your factory has said that he can make things very difficult for a female worker by withholding pay and treating her badly unless she has sex with him." Responses were rated from *1=strongly disagree* to *5=strongly agree*. In the absence of any training, most supervisors either strongly disagreed or disagreed with this statement. That is, there was already a strong organizational intolerance for sexual harassment.

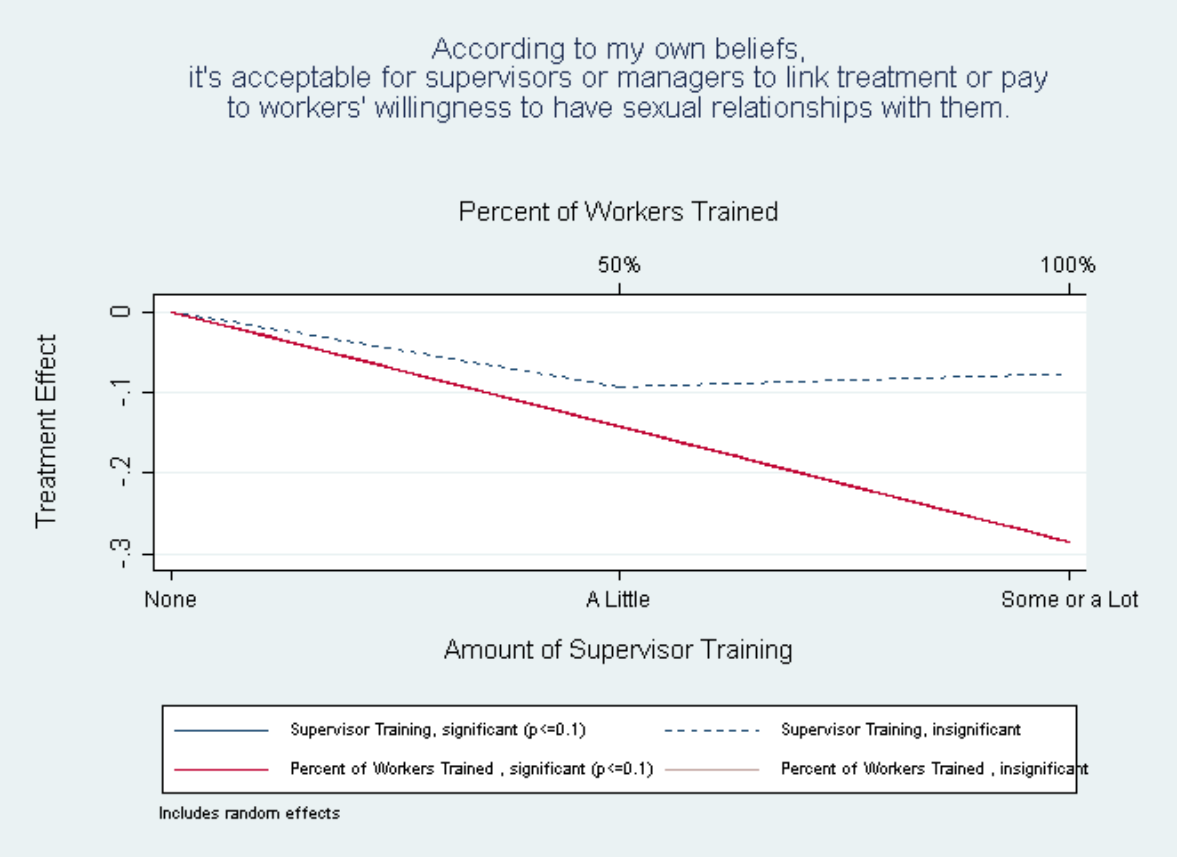


	(1)
VARIABLES	H2
WIF_Sup_little	0.296
	(0.355)
WIF_Sup_some_lot	-0.199
	(0.319)
Workers_Supervised	-0.00176*
	(0.00103)
workerstrainedpercent	-0.644**
	(0.325)
Constant	1.703***
	(0.551)
Observations	165
Number of uniqueID	128

As the percentage of trained workers increased, supervisors were even less likely to say that it would be risky for the female worker to make a formal complaint – indicating less organizational tolerance of harassment and a better environment for all female workers.

Personal beliefs about sexual harassment

Supervisors were also asked about their own personal beliefs about quid pro quo sexual harassment. In the absence of WiF training, it was already the case that supervisors disagreed with the idea that linking pay and sexual favors was acceptable.



We did see a training effect for personal beliefs about quid pro quo sexual harassment; again, it was worker training, not supervisor training, that shifted responses. As the percentage of trained workers increased, supervisors were less likely to say that quid pro quo harassment was acceptable.

	(1)
VARIABLES	personalbeliefsSHQPQ
WIF_Sup_little	-0.0933
	(0.0822)
WIF_Sup_some_lot	-0.0770
	(0.0540)
Workers_Supervised	-0.000401
	(0.000549)
workerstrainedpercent	-0.285*
	(0.147)
Constant	1.654***
	(0.268)
Observations	164
Number of uniqueID	128

Training Systems Analysis

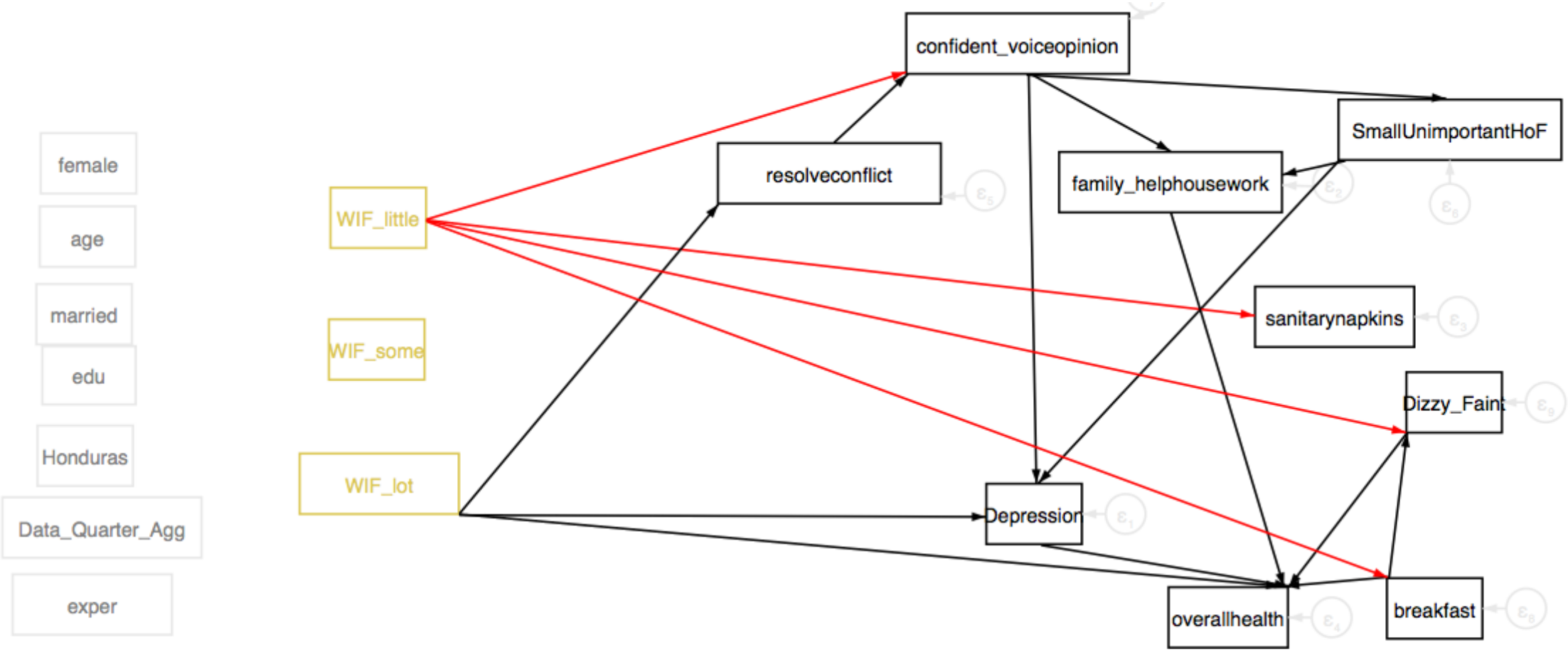
Understanding the Dynamics of the AT Program

Simultaneous Equation Modeling (SEM)

- The analysis of the effect of training on the outcome variables indicates significant treatment effects.
- Simultaneous equation modeling explores the relationships among variables and reveals the path through which Advanced Training reaches its ultimate objectives.
- Training can be visually represented as a ‘web’ of interconnected variables.
- The slides below present a schematic diagram for each training theme. Text explains the causal links.

Unit 1: Health and Nutrition

Health, Mental Health



Health and Nutrition Outcomes

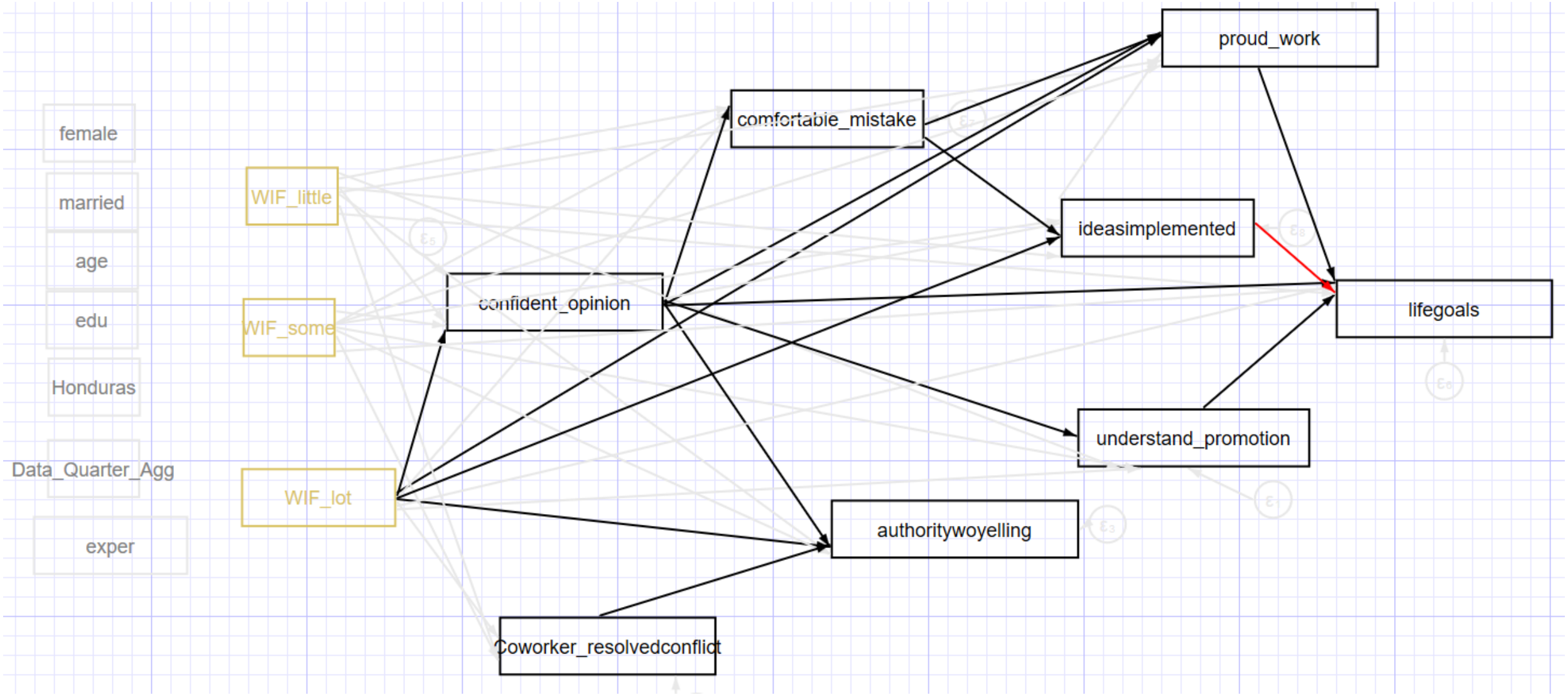
- Workers who reported having only a small amount of training were less likely to have confidence in voicing opinions, use sanitary napkins, and eat breakfast, and more likely to feel dizzy, as indicated by the red arrows. With additional training, these adverse effects disappeared.
- Workers who reported receiving a lot of WIF training also reported less depression, better health and increased confidence in conflict resolution and ability to voice their opinions at work.
- Confidence in voicing opinion at work had a cascade of positive effects at work and at home. Beneficial effects included improved mental health (less depression), getting family members to help with household work and reducing humiliating interactions with family members.
- Reduced dehumanization in family interactions was a second important mediator. Workers who did not feel small and unimportant after interactions with their families were able to get more help with housework and to have improved mental health.
- Getting help with housework and better mental health contributed to improved physical health.
- One important health channel that did not function well with Advanced Training is eating breakfast. Workers who eat breakfast have better overall health and are less likely to feel faint at work. However, even though eating breakfast is an important component of training, we did not detect a treatment effect associated with this behavior.

Health Regression Results

VARIABLES	(1) Resolve conflict	(2) confident_ voiceopinion	(3) Small UnimportantHoF	(4) family_ helphousework	(5) Depression	(6) breakfast	(7) Sanitary napkins	(8) Dizzy_Faint	(9) Overall health
resolveconflict		0.274***	-0.0100	0.0752					
		(0.0243)	(0.0353)	(0.0551)					
confident_voiceopinion			-0.242***	0.277***	-0.0930**				
			(0.0390)	(0.0686)	(0.0420)				
SmallUnimportantHoF				-0.199***	0.249***				
				(0.0565)	(0.0365)				
family_helphousework									0.0618**
									(0.0267)
Depression									-0.323***
									(0.0454)
breakfast								-0.0701***	0.123***
								(0.0211)	(0.0406)
Dizzy_Faint									-0.229***
									(0.0542)
WIF_little	-0.0438	-0.122*	0.112	-0.119	0.0367	-0.146*	-0.112**	0.119*	-0.172
	(0.0851)	(0.0710)	(0.0897)	(0.149)	(0.0941)	(0.0859)	(0.0556)	(0.0641)	(0.111)
WIF_lot	0.198**	-0.0246	0.0879	-0.0749	-0.185*	-0.0952	0.0920	-0.0438	0.289**
	(0.100)	(0.0835)	(0.106)	(0.172)	(0.111)	(0.102)	(0.0653)	(0.0763)	(0.129)
WIF_some	-0.0112	-0.0976	0.0364	-0.156	-0.0123	-0.0189	0.0192	0.0266	-0.0708
	(0.0842)	(0.0701)	(0.0898)	(0.147)	(0.0942)	(0.0855)	(0.0550)	(0.0639)	(0.111)
Constant	3.398***	3.207***	2.892***	2.151***	3.356***	3.582***	3.634***	2.023***	4.738***
	(0.222)	(0.203)	(0.298)	(0.447)	(0.323)	(0.227)	(0.107)	(0.185)	(0.328)
Observations	1,257	1,257	1,257	1,257	1,257	1,257	1,257	1,257	1,257

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Unit 2: Communication



Intra-factory Relationships and Worker Outcomes

- Workers reporting receiving a lot of WIF training also reported having improved confidence in voicing their opinions at work, and greater belief they could have authority without yelling and that their ideas were implemented in the factory.
- Large amounts of WIF training also increased workers' overall pride in their work.
- Confidence in voicing one's opinion at work is a strong treatment mediator.
  - Increased confidence, coming from large amounts of WIF training, led to positive outcomes for all variables in the system including: comfort with reporting mistakes, understanding promotion, pride in work, implementation of ideas in the factory, and workers' making plans to reach their life goals.
- Satisfaction in how conflicts with coworkers are resolved improved worker beliefs that they do not need to yell to have authority.
- Being comfortable reporting mistakes increased workers' pride in their work.
- Workers were more likely to report making plans to reach life goals when they felt more confident at work, understood how to receive a promotion, and were proud of their work. However, having their ideas implemented in the factory reduced workers' reports of planning for life goals.

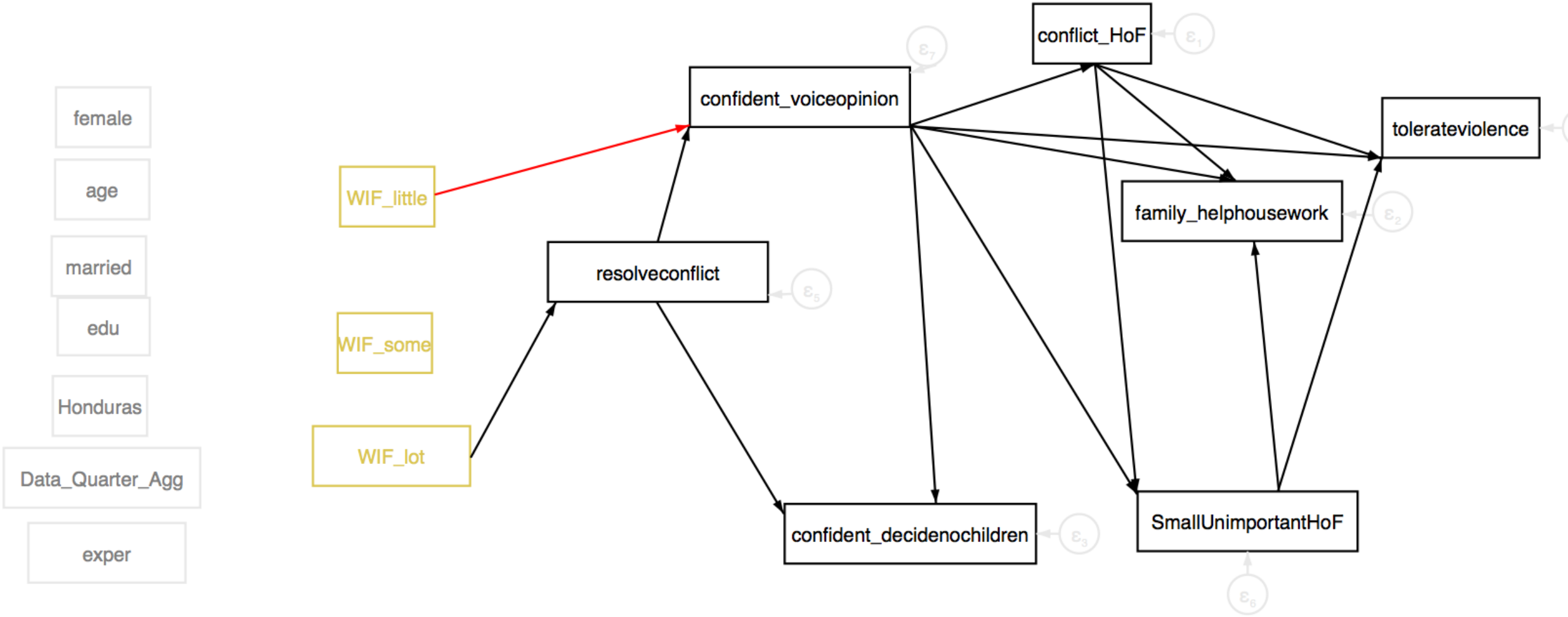
Communication Regression Results

VARIABLES	(1) confident_opinion	(2) Coworker_ resolvedconflict	(3) comfortable_mistake	(4) understand_ promotion	(5) authoritywoyelling	(6) proud_work	(7) ideasimplemented	(8) lifegoals
confident_opinion			0.386***	0.327***	0.146***	0.390***	0.115***	0.235***
			(0.0334)	(0.0317)	(0.0384)	(0.0342)	(0.0209)	(0.0341)
Coworker_resolvedconflict					0.0886**			
					(0.0359)			
comfortable_mistake						0.136***	0.0152	
						(0.0282)	(0.0165)	
understand_promotion								0.123***
								(0.0268)
proud_work								0.171***
								(0.0336)
ideasimplemented						0.0133		-0.149**
						(0.0651)		(0.0579)
WIF_little	-0.0784	-0.138	0.0822	0.0129	0.0297	0.149	0.0323	-0.0800
	(0.0945)	(0.110)	(0.107)	(0.108)	(0.113)	(0.105)	(0.0609)	(0.0931)
WIF_some	0.0554	-0.101	0.0670	0.110	0.136	0.119	0.0788	0.0179
	(0.0938)	(0.109)	(0.106)	(0.106)	(0.112)	(0.101)	(0.0590)	(0.0893)
WIF_lot	0.262**	-0.181	0.182	0.136	0.344**	0.244**	0.173**	0.169
	(0.112)	(0.137)	(0.126)	(0.126)	(0.140)	(0.121)	(0.0703)	(0.107)
Constant	3.315***	3.676***	1.473***	1.515***	2.511***	1.839***	0.816***	2.358***
	(0.251)	(0.292)	(0.302)	(0.304)	(0.348)	(0.296)	(0.171)	(0.274)
Observations	1,236	1,236	1,236	1,236	1,236	1,236	1,236	1,236

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Unit 3: Social Status and Relationships

Household Power



Intra-household Relationships and Worker Outcomes

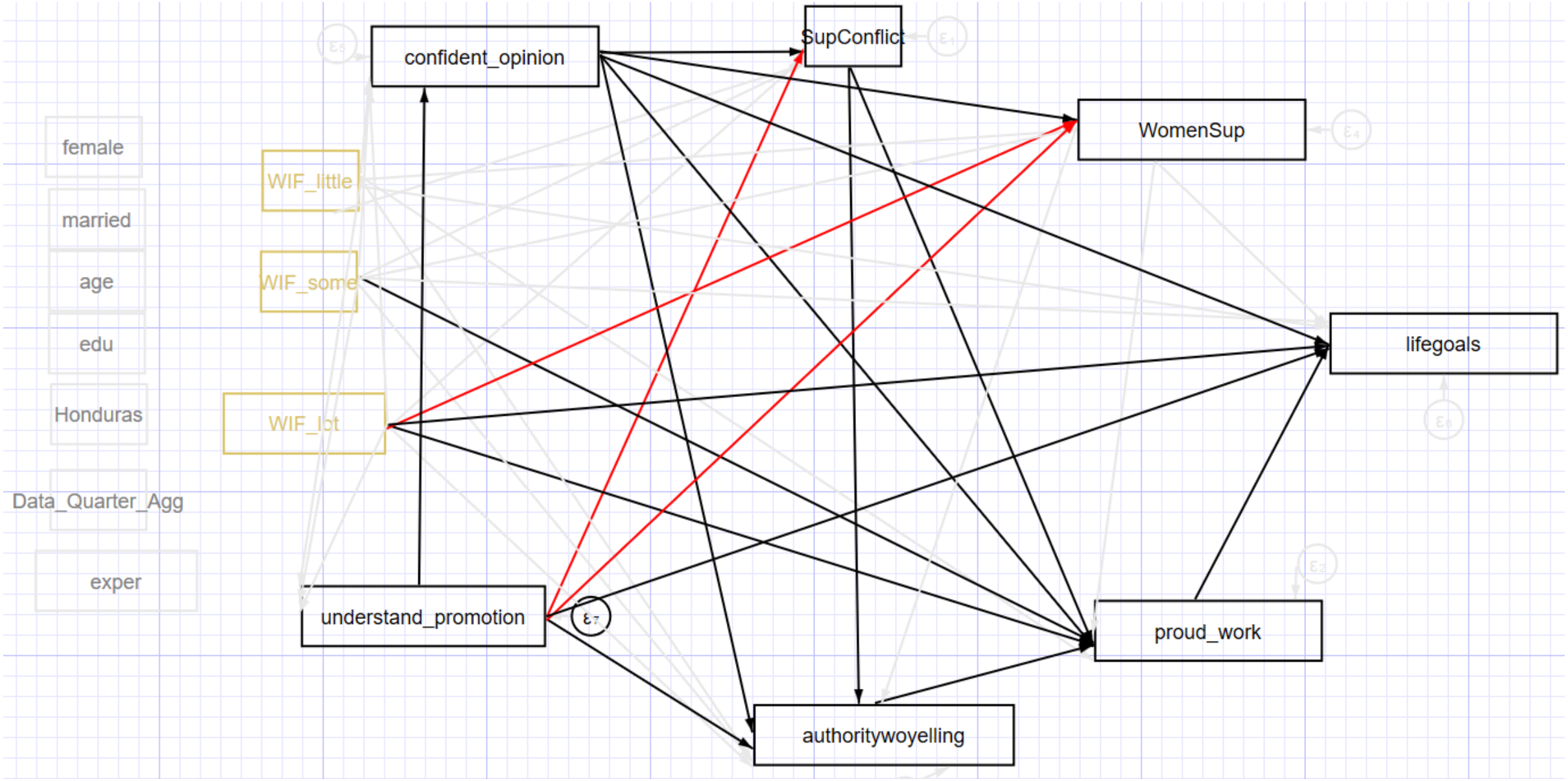
- Workers reporting receiving a lot of WIF training reported increased ability in conflict resolution, which drove several positive changes, such as improved confidence in voicing their opinions at home and confidence in deciding the number of children they want to have.
- Minimal training was at first detrimental to confidence in voicing opinions at home, though this effect disappeared with more training. Their improved confidence and conflict resolution skills helped workers ameliorate conflict at home, which enabled them to ask their families for help with the housework.
- Workers reported a reduction in feeling small or unimportant in front of the heads of their families.
- Due to the improved familial climate, women believed less and less that they must tolerate violence in order to hold the family together.

Household Power Regression Results

VARIABLES	(1) resolveconflict	(2) Confident_voiceopinion	(2) Conflict_HoF	(6) SmallUnimportantHoF	(2) Family_helphousework	(3) Confident_decidenochildren	(4) Tolerateviolence
resolveconflict		0.274***		-0.00824	0.0731	0.0505**	
		(0.0239)		(0.0297)	(0.0540)	(0.0225)	
confident_voiceopinion			-0.107***	-0.190***	0.277***	0.527***	-0.112**
			(0.0361)	(0.0348)	(0.0640)	(0.0267)	(0.0448)
Conflict_HoF				0.476***	-0.144**		-0.0879*
				(0.0325)	(0.0670)		(0.0469)
SmallUnimportantHoF					-0.140**		0.200***
					(0.0633)		(0.0449)
WIF_little	-0.0438	-0.122*	0.112	0.0560	-0.108	-0.0500	-0.0953
	(0.0851)	(0.0710)	(0.0854)	(0.0800)	(0.149)	(0.0635)	(0.103)
WIF_some	-0.0112	-0.0976	-0.0732	0.0749	-0.167	-0.0165	-0.00352
	(0.0842)	(0.0701)	(0.0854)	(0.0801)	(0.147)	(0.0628)	(0.103)
WIF_lot	0.198**	-0.0246	0.00188	0.0905	-0.0791	0.0455	-0.105
	(0.100)	(0.0835)	(0.101)	(0.0948)	(0.172)	(0.0748)	(0.121)
Constant	3.398***	3.207***	2.607***	1.605***	2.325***	1.328***	2.405***
	(0.222)	(0.203)	(0.275)	(0.278)	(0.436)	(0.206)	(0.356)
Observations	1,207	1,207	1,207	1,207	1,207	1,207	1,207

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Unit 4: Leadership



Perceptions of Leadership and Worker Outcomes

- Training had a direct and beneficial effect on workers' pride in their work and their efforts to pursue life goals.
- However, having a lot of training increased workers' belief that women do not make good supervisors.
- While training did not affect confidence at work or understanding of promotion, these variables were major drivers in worker perceptions of leadership and their own work.
  - Understanding how to get a promotion increased worker confidence, their belief that they could have authority without yelling, and their pursuit of life goals. But it also increased their conflicts with their supervisors and their belief that women don't make good supervisors.
  - Confidence in voicing one's opinion decreased worker-supervisor conflict, increased workers' belief in authority without yelling, and improved opinions about female supervisors. Confidence further improved pride in work and the pursuit of life goals.
- Surprisingly, increases in worker-supervisor conflict increased workers' confidence in having authority without yelling and their pride in their work.

Leadership Regression Results

VARIABLES	(1) understand_promotion	(2) confident_opinion	(3) SupConflict	(4) authoritywoyelling	(5) WomenSup	(6) proud_work	(7) lifegoals
understand_promotion		0.281***	0.0557**	0.127***	0.0652*		0.114***
		(0.0272)	(0.0218)	(0.0305)	(0.0354)		(0.0210)
confident_opinion			-0.155***	0.146***	-0.0706*	0.364***	0.193***
			(0.0236)	(0.0334)	(0.0377)	(0.0268)	(0.0253)
SupConflict				0.123***		0.0864**	0.00621
				(0.0428)		(0.0357)	(0.0298)
authoritywoyelling						0.107***	
						(0.0262)	
WomenSup				0.0253		-0.00422	-0.0123
				(0.0262)		(0.0217)	(0.0180)
proud_work							0.163***
							(0.0259)
WIF_little	-0.0521	-0.138	0.0623	-0.0914	0.0644	0.119	-0.0477
	(0.113)	(0.0998)	(0.0763)	(0.105)	(0.125)	(0.0882)	(0.0727)
WIF_some	0.105	-0.0233	-0.0127	-0.0341	0.107	0.175**	0.00150
	(0.111)	(0.0979)	(0.0748)	(0.103)	(0.122)	(0.0857)	(0.0708)
WIF_lot	0.195	0.179	-0.00882	0.194	0.358**	0.176*	0.155*
	(0.132)	(0.117)	(0.0893)	(0.123)	(0.146)	(0.103)	(0.0849)
Constant	2.708***	2.772***	2.453***	2.281***	3.272***	1.893***	2.451***
	(0.298)	(0.272)	(0.218)	(0.332)	(0.357)	(0.283)	(0.235)
Observations	1,063	1,063	1,063	1,063	1,063	1,063	1,063

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Conclusions

Return on investment

- WiF training reduced workforce turnover by 12.3 percentage points, reducing monthly turnover from 14.6 to 2.3 percent.
- The efficiency rate rose by 29 percentage points on a base of 97.3, indicating a 29 percent improvement in productivity.
- Training allowed firms to increase the production target. In spite of the increase, workers whose supervisors had received a lot of WiF training were 11 percent more likely to reach their production target.
- As a consequence of reaching the target, workers whose supervisors had received a lot of WiF training received larger bonuses associated with productivity.
- Supervisors who received a lot of WiF training had improved line-balancing, either in terms of work building up at the station of one worker or workers sitting idle.
- WiF training of workers reduced cognitive load among supervisors.

Communication and Problem Solving

WiF training of workers and/or their supervisors:

- reduced verbal abuse, improved perspective-taking and led to greater confidence in voicing opinions at work and resolving conflict at work, and
- led to increased comfort reporting mistakes at work, asking for help from co-workers and making suggestions at work.

WiF training in the workplace altered communication and problem solving at home. Training increased confidence in voicing opinions at home and reduced conflicts and yelling.

Life Outcomes

WiF training is associated with significant improvements in life outcomes. These include

- improved mental health and a reduction in episodes of sadness and depression
- improved life satisfaction and physical health and pride at work
- increased healthy behaviors such boiling or purifying water.

Training increased confidence in controlling the number of children one has.

One aspect of the training that needs to be strengthened is the practice of eating breakfast. Breakfast is associated with less dizziness and a greater sense of good health, but training did not increase reports of eating breakfast.

Empowerment

There are many ways of measuring empowerment. One is to consider a worker's internal locus of control. Training increased the sense that a worker can change her life by changing her behavior.

A second is self-efficacy, the idea that a worker can control important things in her life, a belief also somewhat strengthened by WiF training.

A third is developing a plan for life goals. Prior to treatment, workers already had developed plans, but WiF training helped them strengthen those existing plans. And training helped workers realize those goals by providing information such as how to earn a promotion.

Dehumanization, Objectification, Zero-Sum Beliefs and Norms Related to Abuse

The extent to which supervisors see their subordinates as sentient and competent human beings worthy of humane treatment plays an important role in the amount of abuse at work. Training workers and supervisors

- reduced dehumanized and increased rehumanized perceptions of workers by supervisors,
- reduced verbal abuse by supervisors and by household heads,
- reduced dehumanizing interactions within families,
- increased the belief by supervisors that humane treatment of workers is consistent with an effective workplace,
- increased outcome dependency in supervisors (the belief that concern for the wellbeing of their subordinates is part of their job) and
- reduced objectification of workers by supervisors.

Training also strengthened organizational norms concerning verbal abuse and reduced supervisors' personal belief that yelling at workers is appropriate.

Gender Attitudes

An important component of WiF Advanced Training is to change perceptions of the potential for women as leaders. Training had some success in changing perceptions but other aspects of the program need attention.

Training increased the belief that girls should get the same opportunities as boys, and there was some improvement in the belief that gender differences are learned rather than innate.

There was also a reduction in the gap between traits of a good leader and traits describing female workers in the factory.

Training workers made supervisors more receptive to female leadership. However, training workers made them more likely to prefer a male supervisor and to believe that women do not make good supervisors.

Sexual Harassment

Empowerment training is one of the mechanisms for deterring sexual harassment.

Surprisingly, training is not associated with a perception by supervisors that their unfair evaluations would be reported to managers. But training did affect organizational norms and the extent to which supervisors endorse those norms. The more training received by a supervisor's subordinates, the less organizational tolerance for sexual harassment perceived by the supervisor, and the less likely a supervisor was to endorse beliefs that *quid pro quo* sexual harassment is acceptable.

Understanding the structure of empowerment training

WiF training directly improves mental and physical health. However, an ability to resolve conflicts and confidence in voicing opinions are important mediators. These competencies reduce humiliating treatment at home and improve sharing of household tasks. Both are important for mental and physical health.

WiF training has a direct effect on confidence in expressing opinions, having suggestions implemented, exercising authority without yelling and having a sense of pride at work. Confidence in expressing your opinion is also an important mediator, helping workers feel comfortable reporting a mistake and understanding the promotion procedures.

All of the communication competencies in turn have two extremely important empowering impacts. Workers are more likely to have a plan for achieving life goals and less likely to believe that they need to tolerate violence to keep their families together.