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Training, Productivity, and Working Conditions in Jordan's Satellite Apparel Factories

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Abstract

This paper presents findings from an impact evaluation of Better Work Jordan (BWJ) on worker productivity in satellite garment factories in rural Jordan. BWJ aims to reduce poverty in the country by expanding decent work opportunities for Jordanian women in rural areas through the satellite business model. As Jordan continues to suffer from extreme rates of unemployment, productive satellite factories can be instrumental in finding a financially sustainable solution to rural unemployment, so long as the satellite factories are sufficiently productive to turn a profit.

Up to thirteen hard and soft skills training modules were introduced into satellite factories. Trainings varied in content, projected audience, and targeted outcome. Throughout the intervention period, three surveys were conducted in each of eight apparel factories to measure worker level outcomes. Trainings were introduced from mid-2017 to October 2018, and the endline survey was conducted in November 2018.

We seek to address the intervention's impact on worker productivity outcomes. While the primary focus is on productivity, we also look at other areas that contribute to worker productivity including Attendance, Turnover, and Overtime; Promotion and Performance; Interpersonal; Payment; and Wellbeing. Workers in participating factories are surveyed on their performance, habits, working conditions, attitudes, wages, and hours.

Through our analysis, we evaluate the relationships between individual training modules and the outcomes of interest, also looking at aggregate impacts of introducing clusters of hard or soft skills programs together in a factory. We find that the most effective individual training modules in bolstering worker productivity were technical training programs that focused on waste management and standardizing product quality. When evaluating the relationships between hard and soft skills clusters at large with relevant outcomes, we find that soft skills training modules are associated with improvements in worker productivity, namely in the efficiency rate.

Due to problems in our randomization process, we are limited in our ability to draw causal relationships between the training modules and outcomes of interest. Nonetheless, the findings identify crucial relationships in the systems relating to worker productivity, which shed light on important target areas for bolstering productivity in satellite factories.

1. Introduction

This study looks into the association of a hard skills and soft skills training programs with changes in worker productivity in satellite garment factories in rural Jordan. Satellite units of garment manufacturing factories are smaller scale factories that are owned and managed by larger, existing garment manufacturers. The government uses the satellite unit model to bring Jordanians from rural areas into the formal labor sector. While the satellite garment unit model has helped bring thousands of Jordanian women into the formal labor market, most satellite units are not profitable, putting into question the potential future viability of this model. The Better Work Jordan (BWJ) intervention was designed to advance productivity in Jordan's satellite garment factories to make them sustainable so that they can provide decent work opportunities while also being a profitable business.

The Jordanian government has recently introduced several initiatives to encourage the development of satellite units as workplaces for rural Jordanian women. However, without understanding more about how to improve productivity in the satellite units, it is unclear whether the investment can remain a viable solution for sustainable employment opportunities, without depending on continued government investment. Given the growing nature of the satellite model, understanding how to combat the numerous challenges embedded in the model has a high potential for improving the economic viability of such factories and also improving employment outcomes for the Jordanian employees.

The study was conducted in eight satellite apparel factories in rural areas of Jordan. Prior to the program's introduction, the factories of interest had low levels of overall worker productivity. A needs assessment of the factories of interest highlighted several deficiencies that contribute to poor productivity levels, and an external consultant was hired to increase workplace production levels. Key areas of note identified during the needs assessment included a lack of line balancing, inefficient motions and processes, a lack of standardized work practices, and training deficiencies. Recognizing these deficiencies, BWJ introduced a series of training modules in order to bolster productivity within the facilities. Training modules were developed uniquely for each factory, with the same broad framework, with a goal of improving productivity. By addressing these challenges, the intervention seeks to increase productivity and, therefore, the financial viability of their branches.

Training modules were developed to address a few main theories of factors that contribute to worker productivity including technical prowess, working conditions, and interpersonal relationships in the factory. Based on prevailing theories of drivers of workplace productivity, the intervention was designed to bolster productivity by targeting both hard and soft skill acquisition. Similarly, the modules were designed to target different levels of the hierarchical structure within the organizations, as targeting different kinds of actors within a factory may allow for effects to snowball throughout the organization.

One of the most important drivers of successful training modules is an understanding of power dynamics within a factory. For example, by seeing workers in humanized terms, supervisors may be better able to illicit worker responses to initiatives to improve specific production indicators. Targeting workers directly is another way to target worker wellbeing. It is possible that this is through incentive structures or improving workers' wellbeing and social sense of the factory. Accordingly, it is important for us to think about how a multi-pronged training program like this may have competing interests based on different targeted outcomes. For example, our earlier work has demonstrated that introducing technological change through an intervention guided by an external consultant can actually decrease worker empowerment because of the power dynamic created by the external consultant. Because of this, BWJ was encouraged to ensure that they were not bringing in consultants who would create a hierarchical power dynamic in the organization. The lesson that such extreme changes need to be accompanied by empowering mechanisms in order to be effective for the primary goal of production demonstrates that interventions aimed at improving productivity must be conducted in a way that prioritizes worker empowerment too.

Our analysis suggests that the primary goal of influencing worker productivity was successful for certain individual technical training modules, and also for soft skill training modules when clustered together as a group. However, it is possible that these positive results came at the expense of worker-supervisor relationships, which can clash with the potential for worker empowerment. This is an important finding as it calls into question the sustainability of productivity increases, as tension and hierarchical structure can contribute to turnover intention and other worker habits that may be associated with poor productivity levels.

Despite overall encouraging findings, we are not able to confidently draw conclusions on treatment effects due to limitations regarding data collection prepared for this report. The measurement of productivity cannot be specified as effectively as desired given limitations in physical changes from factories and resistance from factories. Consequently, our sample size is too small and random assignment did not occur. Additionally, there was severe factory resistance to the training modules. These implementation issues coupled together disable us from making strong observations of treatment effects. Nevertheless, our findings shed light on important relationships that exist between different training modules and worker level outcomes, paving the way for understanding the systems at play within the satellite factory model.

2. Program Description

The Better Work program is a partnership of the International Labor Organization (ILO) and the International Finance Organization (IFC). Better Work Jordan (BWJ) aims to reduce poverty in the country by expanding decent work opportunities in the apparel sector. In particular, the objective of the satellite garment factories assessment by BWJ is to improve productivity and to provide decent work opportunities for Jordanian women in rural areas.

This study looks into the association of hard skills and soft skills training programs implemented by BWJ with changes in worker productivity and commitment, as well as working conditions in garment factories. The soft skills modules of the training curriculum were developed by Better Work. The hard skills program was developed and implemented by an international expert on productivity, who was hired as a consultant by Better Work Jordan. These modules were developed based on an earlier needs assessment conducted in the factories. Given the variation of product setups across factories, interventions were adapted for each satellite unit. Trainings were carried out in no particular order. Not every factory received the same types of training, as shown in the **Figure 1 Gantt chart (Appendix)**

The productivity evaluation was conducted in 8 factories in Jordan. At each satellite factory, workers participated in up to 13 training modules, 6 of which focused on cultivating hard skills and 7 on cultivating soft skills.

The factories in the worker survey sample are divided into two groups, where the first half received the intervention starting in May 2017 and the second group starting in 2018. 219 participants completed the baseline survey, 224 completed the midline survey, and 235 completed the endline survey. The workers surveyed were chosen randomly. The study began with a baseline survey of workers in the fall of 2017. After the baseline, workers received a few of the training modules. Following training, workers were surveyed again in April 2018 for the midline data collection round. The remaining training sessions were carried out following the midline surveys. Workers were then surveyed at endline in November 2018.

The evaluation was designed to identify program impact on productivity, factory organization, profitability, and business opportunities. While the study focuses primarily on productivity measures, additional measurements were taken on a variety of outcomes. The subsequent outcomes provide us with insight into larger systems that may influence the productivity of satellite factories in the Jordanian garment sector.

Interventions were adapted for each satellite unit and were carried out in no particular order. While the programs varied depending on the satellite unit, module goals remain consistent.

About the Hard Skills Training Modules:

1. *5S Workplace Organization Training* – The most elaborate of the training modules, this module provides comprehensive training in optimizing workplace organization to promote efficiency.
2. *Supervisory Training* – This module focuses on training production line supervisors focusing on enhancing sewing operators' performance, adapting work methods and maintaining cycle time while also focusing on quality assurance in a collaborative manner.
3. *Operations Awareness Campaign* – This module adopts in-class training as well as hands-on implementation on the factory floor aimed at improving economic work methods, upskilling operators, enhancing product flow and cycle time, and improving product quality. The training is implemented with a core group of operators.
4. *New Operators Training* – This module adopts a training of trainer (ToT) approach to building factory capacity aimed at facilitating skills development of new operators. Participants are to be equipped to train new sewing operators.

5. *Key Knowledge for Waste* – This waste management module introduces different perspectives on cost, cycle time, and types of waste to workers as well as supervisors.
6. *Quality Activity* – This module seeks to help factories evaluate variability in readings between quality control checks in order to help factories standardize product quality.

About the Soft Skills Training Modules

1. *Supervisory Skills Training (SST)* – One of Better Work’s core training modules, this training is a three-day course aimed at enabling supervisors and future supervisors to gain the necessary skills to further enhance dialogue between management and workers. Overall, the training is designed to develop supervisors’ interpersonal, management and leadership skills, and ultimately create a decent work environment.
2. *Knowledge of Supply Chain* – This module addresses a need for workers to better understand their role in the context of the global supply chain, especially the immense value of their work; it helps create a respectful work environment. The training covers the entire production process, including raw material sourcing, button making, end consumers, and constant communication throughout the chain.
3. *Workplace Communication* – This module aims to improve management and worker understanding of the importance of communication and to encourage them to adopt a dialogue-based approach to problem-solving.
4. *Basic Rights & Responsibilities* – This module helps workers develop a basic understanding of their commitments in the workplace and inform them about their legal rights.
5. *Financial Literacy* – This module aims to help workers understand the importance of managing their finances and the ways to better budget their income and savings.
6. *IE Session* – Informational sessions with the factory's industrial engineers. This module was omitted from the analysis due to limited data.
7. *Women’s Health* – Informational health session.

3. Methodology

At each factory, we measured worker productivity outcomes, in addition to various additional outcomes that may contribute to systems of worker productivity levels based on the criteria identified in the needs assessment. Potential treatment effects are analyzed using regression analysis and standard statistical procedure. We used two models to assess the impact of the BWJ trainings: Model 1, which evaluates the relationship of each training module with the outcome variable, and Model 2, which evaluates the relationship of each cluster of hard skills and soft skills trainings with the outcome variable. In the second model, a cluster refers to the number of hard or soft skills trainings the satellite factory has received at the time of the survey. For example, if a factory has received any three of the hard skills training modules, the *hardskills* cluster value would be 3. A statistically significant cluster value indicates a marginal change in adding an additional training module to a hard skills or soft skills cluster.

The equations are estimated using a panel estimator with clustered standard errors by factory. Worker demographics and time variables are included as controls. We used both models to assess the impact on each outcome variable.

Outcomes areas were separated into six areas of interest: Productivity; Attendance, Turnover, and Overtime; Promotion and Performance; Interpersonal; Payment; and Wellbeing. Throughout the analysis, we clustered together the *Basic Rights and Responsibilities* training and the *Knowledge of Supply Chain* trainings (both being soft skills modules) into one variable, *basicrightssupply*, because the two modules were always introduced at the same time. We omitted the variable indicating informational sessions with the factor's industrial engineers because of the low sample size of factories that took part in this training.

Results are reported by outcome area in **Tables 3a-8b**, featured in Appendix B. Each column of results throughout the tables of interest indicates the impact of the presence of the training module, controlling for demographic and factory level information, on the outcome variables. Statistically significant outcomes are color-coded for clarity. Blue cells indicate a statistically significant normatively good impact of the training module on the outcome of interest. This is true even for variables for which positive coefficients indicate negative or

harmful impacts on the outcome variable. For example, for the variable *absenteeism*, a decrease in the number of days of work missed is a normatively good result and is thus presented in blue. Similarly, statistically significant normatively bad results are shown in red. The trainings are organized from most technical and high-level at the left to most fundamental at the right. This organization is helpful for interpreting what types of programs elicit desired outcomes.

4. Results

Variable measurements and definitions are provided in **Table 1** in the Appendix, with variable coding in accordance with the scheme described in the table. Summary statistics for each measured outcome variable are provided in **Table 2b** in the Appendix, with additional pertinent summary statistics on productivity reported below in **Table 2a**. In the larger summary statistics table, the gaps for baseline data are due to differences in the survey, which is another reason why the ability to demonstrate a causal impact for all variables is limited.

Table 2a: Summary of Productivity Indicators

Variables	Midline					Endline				
	N	mean	sd	min	max	N	mean	sd	min	max
<i>hourly_target</i>	79	181.6	210.6	10	1,400	97	163.8	176.4	20	1,200
<i>daily_target</i>	50	939.6	1,013	15	5,000	50	1,481	2,875	50	20,000
<i>Hourlypieces_week</i>	79	201.2	215.0	10	1,400	97	187.6	225.5	30	1,600
<i>Dailypieces_week</i>	50	1,019	1,097	15	5,000	50	1,566	2,896	100	20,000
<i>hourly_productivityI</i>	79	1.323	1.268	0.400	8	97	1.299	1.187	0.400	7
<i>daily_productivityI</i>	50	1.204	0.955	0.260	5.333	50	1.396	1.424	0.375	7

The variables used to measure productivity were collected during the midline and the endline surveys only, limiting our availability to make causal statements about the impact of the training program on these outcomes of interest. The variables *hourly_productivityI* and *daily_productivityI* measure whether workers met their hourly production target and daily production target respectively and are calculated by actual production divided by the target. A value equal to or greater than 1 indicates that the target was achieved or surpassed. A value lower than 1 indicates a failure to achieve the target. At midline, on average, workers produce 201.2 pieces/hour (*Hourlypieces_week*) with a target of 181.6 pieces/hour (*hourly_target*). They produce an average of 1,019 pieces/day (*Dailypieces_week*), with a target of 939.6 pieces/day. The average hourly productivity rate decreased slightly from midline to endline. However, workers still produced more than their target. At midline, on average, workers produced 32%

more than their target per hour. At endline, this percentage was close to 30% (hourly_productivity1). We will further break down this analysis by looking at the relationship between different training modules and productivity indicators.

Productivity

Our primary outcome area of interest is productivity. The standard measure of productivity in the apparel sector is the efficiency rate, which measures the ratio of actual to planned production. This measure is the ratio of the amount that a worker produces in a period of time and the production target for that period. Generally, a rise in the efficiency rate indicates an increase in productivity. However, if an industrial engineer observes an increase in productivity, the response may be to increase the target accordingly. Increasing the target may simply reflect a change in the organization's capacity to produce, which is in line with the goals of the intervention. Increasing the target may also be intended to reduce the number of workers receiving a productivity-linked bonus that is triggered when the worker reaches the production target. Because of this, it is important for us to identify the impact of training modules on the target to fully understand the intervention's impact on efficiency rate. In order to control for the effect of treatment on the target, we first looked at the intervention's effect on efficiency rate both controlling for and not controlling for the target.

Rows A-C of **Tables 3a-3b** analyze the relationship between trainings and the efficiency rate, using different specifications for the regression, with Row A using the previously established controls, and Rows B and C controlling for the production target and the natural log of the productive target, respectively, in addition to the other controls. Rows D and E report the relationships between training modules and the production target and the natural log of the production target, respectively. For regressions in which the dependent variable is the natural log, the estimated coefficient is the percent change in the target associated with participation in the training.

Looking first at the target rows on **Table 3b**, we can see that the hard skills training cluster is associated with an increase in the target, while the soft skills cluster has no significant impact. It is possible that hard skills training leads to expectations of workers' increased capacity to produce, which could explain this increase. We see a substantial decrease in the target for *Basic Rights/Supply Chain* training variable. This combination of trainings targets workers'

understanding of their place on the supply chain. It is possible that this training may have increased sensitivity to the effects of external pressure on the production line, leading supervisors to decrease target rates.

When broken down into individual modules in **Table 3a**, we are able to see varied relationships between different training modules and the various efficiency rate measures. For our analysis, we will use the natural log of the target as the measure for percent change. As earlier stated, an understanding of the production target is necessary for analyzing the relationship between these training modules and worker productivity. Consider *Supervisory Training (suptraining)*. The results from Column 2 show that the efficiency rate declined by almost 36 percentage points following *Supervisory Skills Training (SST)*. However, the industrial engineer also increased the target by over 79% during the period in which the supervisory skills training was introduced, as can be seen in Row E of the same column. Based on these two figures, we can conclude that the efficiency rate would have risen on the order of 43 percentage points if the industrial engineer had not raised the target. When we control for the target, the relationship with efficiency rate disappears. Therefore, the increase in the target is driving the decreased efficiency rate.

We can draw a similar conclusion about the *Operations Awareness Campaign (opawareness)*. The efficiency rate change associated with *Operations Awareness Campaign* is -37.8 percentage points (Column 4). However, the treatment effect on the target is +45.0 percent (Column 4). The net productivity effect is on the order of 6%. Again, the significant relationship disappears when we control for the natural log of the production target.

In the case of *Key Knowledge for Waste* and *Quality Activity*, there is an associated increase in the efficiency rate, with no change in the target for *Key Knowledge for Waste* and a decrease in the target for *Quality Activity*. We conclude, then, that these training modules directly raised productivity in the factories. The opposite is the case for *5S Introduction*, *Basic Rights/Supply Chain*, and *Women's Health*. The estimated efficiency rate declines by more than the target increases. In the case of *5S Introduction*, the efficiency rate declines by 73.8 percentage points, but there is no associated change in the target. Accordingly, when controlling for the target rate, we see the efficiency rate decrease for these three modules.

We now consider the hard skills and soft skills clusters model. The effect on the efficiency rate for the hard skills cluster is not significant. The soft skills cluster is associated with an increase in the efficiency rate when calculated without controlling for the target, but this effect disappears when the proper controls are in place. This finding suggests that clusters of training modules do not have significant relationships with the efficiency rate. It is clear that any drivers of efficiency rate work to cancel out the effects of other modules when they are introduced together.

Next, we look to assess the impact of the trainings on line balancing. Well-balanced lines with a smooth flow of work indicate greater 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. Analyzing both of these components of the production line provides insight into factory-level productivity.

The more frequently that work piles up (*Work Piling*), the less productive an employee is considered to be. Similarly, the more frequently workers sit idle (*Sit_Idle*), the less productive they are considered to be. Row F shows that most hard skills training modules are related to an increase in work piling up, though there are two notable exceptions, *Key Knowledge for Waste* and *Quality Activity*, which are associated with a decrease in the accumulation of work. This is consistent with the two training modules' beneficial impact on efficiency rate seen above. In terms of soft skills, *Basic Rights/Supply Chain* training is associated with a decrease in work piling up, but *Financial Literacy* and *Supervisory Skills Training* are related to an increase in work piling up. When taken as clusters, there are no significant relationships between the hard and soft skills trainings and work piling up. The relationship between the training modules and workers sitting idle, as reported in Row G on **Table 3a-b** indicates a beneficial training effect for some individual modules and for both hard and soft training clusters when more training modules are added to a cluster. Workers in factories who have received *Quality Activity* and *Basic Rights/Supply Chain* training report less frequently sitting idle. These results show that trainings related to quality control, waste management, and that responsibilities in the supply chain are associated with a reduction in work building up at work stations. Other trainings are associated with more work building up.

The finding that training is associated with increased work build up and fewer workers sitting idle suggests that the training did not necessarily improve line balancing as hoped. It appears, rather, that the intervention was increasing the overall workload. This is consistent with the raw production target increases seen in Row E. While the intervention may have attempted to increase the workflow, it may not have been effective in improving line balancing.

Technical know-how is another contributor to worker productivity. Therefore, we measured the number of machines a particular worker knows how to operate or the number of operations the worker knows how to execute. The soft skills cluster is related to an increase in the number of machines workers can operate (*No Machines Operated*), a result that is largely driven by the *Basic Rights/Supply Chain* and *Quality Activity* modules. The number of operations workers can execute (*No Operations*) does not seem to be affected by the clusters of trainings. As seen with work piling up, individual trainings are associated with an impact but counteract each other.

Another area of interest related to productivity is worker dependency on superiors and peers. This section of the study aimed to evaluate managerial efforts to improve productivity through the conduct of work-studies and less need for help. We observe that soft skills trainings are associated with an increase in work-studies and in the need for help. In the first case, we observe that *Basic Rights/Supply Chain* and *Workplace Communication* are the drivers for this result. In the second indicator, *Basic Rights & Responsibilities* combined with the *Supply Chain* training contribute to the negative result. Workers having difficulty meeting the production target may also seek help from co-workers or A-grade jumpers. The variable *Often_Co-worker_Help* measures how often an A-grade jumper or other co-worker is requested to help the respondent complete their production quota. All soft skills modules that are statistically significant are associated with an improvement, indicating a decrease in frequency of needing help to reach the production quota. The beneficial impact for needing help emerges for many of the individual trainings and for the soft skills cluster.

Though most individual hard skills modules are related to a decrease in needing co-worker help, hard skills trainings as a cluster are not associated with any significant changes in the frequency of receiving co-worker help. This is in line with intuition, as soft skill training programs that promote greater worker awareness of the systems in which they operate may

increase co-worker collaboration and co-dependence.

Most soft skills and some hard skills training are associated with a reduction in workers' beliefs that they need more training, which may serve as an indicator for their confidence in both themselves and the system at large. *More_Job_Training* reflects how often the surveyed employees responded that they need additional training for their job. Not needing more training is an indication that employees have understood the process and feel confident in their ability to efficiently produce goods without further instruction. Row H shows that most modules alone are significantly associated with a decrease in the need for more training, which is an overall normatively good result. When clustered together, the modules do not have a significant impact on the outcomes of interest, presumably because of the relatively large value of the coefficient for *Quality Activity* (Column 7). By enforcing further expectations of standardization in products, this module could have increased worker production line pressure and awareness of orderly production, therefore decreasing worker confidence and increasing a desire for more training.

Interestingly, soft skills training is associated with improvements on a series of outcomes that are considered technical skills, where hard skills training did not have such a consistent outcome, as can be seen in **Table 3b**. This was true for cases such as an increase in the number of machines a worker can operate and an increase in the frequency of work-studies run by supervisors and factory engineers. Soft skills training is also associated with an increase in the frequency of needing help from supervisors, industrial engineers, and quality checkers, but a decrease in the need for help from co-workers or A-grade jumpers to reach their production target.

While the results for productivity outcomes are mixed, as portrayed in **Table 3a**, **Table 3b** tells a more promising story in terms of the intervention's targeting of worker productivity outcomes. While individual training programs had varied effects, the overwhelmingly positive results in this table suggest that the training modules work together as a system to improve productivity outcomes. It is interesting that the soft skills cluster is more often associated with increased productivity measures. This result highlights the importance of targeting workers through soft skills training, even when the desired outcomes relate more closely to technical training.

Attendance, Turnover, and Overtime

Closely related to productivity is a worker's attendance and presence in a factory, which, in line with absenteeism, is a key target area identified for the intervention through the needs assessment that was conducted in 2017. Results related to worker attendance, turnover, and overtime habits are reported in results in **Tables 4a-4b**.

Most of the trainings are associated with decreased absenteeism, as indicated in Table 4a, Row B. Trainings concerning waste management, basic rights, the supply chain, and female health, however, are associated with a rise in absenteeism. These mixed effects offset each other, resulting in no net change for the clusters. Another indicator of interest related to absenteeism is a worker's advance notification of their absence, as this practice helps managers plan more effectively and therefore improve productivity for that employee's production line. Similar to responses for absenteeism, many of the hard skills trainings are associated with workers informing the supervisor of an absence (**Table 4a**, Row A). On balance, the hard skills training modules increase the likelihood that workers inform their supervisor of their expected absence, while the soft skills trainings have a negative effect (**Table 4b**, Row B). Because these are self-reported values, workers may also increase their awareness about their tardiness and attendance behavior with further soft skills training, which may influence the reports collected.

Worker turnover intentions can shed light on the energy that a worker is willing to invest into their job and is also a larger reflection of working conditions and job satisfaction, making it an important outcome of interest for understanding productivity. Interestingly, the soft skills training cluster is associated with an increased intention of quitting, driven by the effects of the *Financial Literacy*, *Supervisory Skills Training*, and *Women's Health* trainings (Row C). It is possible that these trainings may be increasing a sense of agency on the part of workers, inspiring them to make changes in their employment with the factory. Meanwhile, factories can diminish thoughts of quitting with *Supervisory Training*, *5S Introduction technique training*, and *Workplace Communication training*.

The soft skill cluster (**Table 4b**, Column 2) has largely negative impacts, presumably based on the inclusion of *Women's Health* and *Financial Literacy*, which may act to empower employees as individuals rather than in their mindset as employees of the factory. Conversely, it makes sense that soft skills trainings related to social interactions—such as modules related to

the supply chain and communication (**Table 4a**, Columns 8-9)—tend to improve outcomes related to attendance, as workers are able to conceptualize the impact of their attendance on others.

Survey responses indicate that workers are aware of expectations surrounding attendance and taking time off. At the baseline, workers generally arrive on time. Results for this variable remained the same across data collection rounds, with ~87% of workers claiming to have never or just once arrived late during the month prior to the survey. *New Operators Training* and quality control systems reduce late coming and female health training increases tardiness. Workers generally know how to apply for leave. Training components have opposing effects. As seen in Row E, *Supervisory Training*, *5S Introduction*, *Supervisory Skills Training*, and *Women's Health* trainings are associated with a decline in understanding the process for applying for leave. In contrast, *New Operators Training*, *Operations Awareness*, *Key Knowledge for Waste*, *Quality Activity*, *Basic Rights/Supply Chain training* and *Workplace Communication* are associated with an increase in awareness. On balance, neither soft skills or hard skills training has a significant impact.

A typical week of work in Jordan is 48 hours long. On average, respondents report working 41-43 hours per week across data collection periods. Most training modules are positively associated with an increase of hours worked per week, though *Women's Health* and the *Supervisory Skills Training* are significantly related to a reduction in weekly hours. The concept of overtime poses a problem for production line level improvement, as different mechanisms to increase production can be limited by time constraints and worker willingness to work overtime, which is of course impacted directly by payment mechanisms and bonuses. The training modules have an interesting relationship with a worker's decision to refuse overtime. The *Operations Awareness Campaign*, *Key Knowledge for Waste*, and *Supervisory Skills Training* increase willingness to accept overtime. *Workplace Communication* is associated with an increased tendency to reject overtime. However, on balance, neither hard skills nor soft skills training has a significant effect. Yet, both hard skills and soft skills training are associated with an increase in overtime days. Adding a hard skills module increases overtime days by 0.63, while the marginal soft skills module increases overtime days by 0.29 days. Overtime days are most likely increased by *Supervisory Training*, *Operations Awareness*, *Financial Literacy*,

Supervisory Skills Training, and *Women's Health*. *Basic Rights/Supply Chain* training and *Workplace Communication* training modules are associated with reduced overtime days.

Focusing on Rows A-D as the primary attendance indicators, we see largely beneficial results associated with the intervention. It is interesting that the majority of the normatively good indicators are seen in the middle of the table, for training modules that share components of technical and fundamental and softer skill topics. As stated, when discussing turnover intention, the more personal training modules *Financial Literacy* and *Women's Health* may be associated with negative outcomes because of their association with worker empowerment and a sense of agency that may have not existed previously. It is likely that these two modules are driving the negative results shown in **Table 4b**, Column 2.

Promotion

It is possible that worker productivity is linked with workers' hope for future upward mobility in the workplace. For example, if workers perceive that they have a high potential reward for increased hard work (i.e., by being promoted), they may adjust their work habits. Accordingly, we studied worker perceptions of promotion as a target area of the trainings that may, in turn, relate back to the direct outcome of productivity, with results reported in **Table 5a-5b**.

Promotions are a rare phenomenon in Jordanian satellite factories. Though over 60% of the employees have been working at the factory for more than 2 years, only 6%-9% have been promoted more than once, as demonstrated in **Figure 2**, below. As clusters, hard skills and soft skills trainings are not associated with any promotion changes in the factories, suggesting that the trainings that have significant relationships with promotion in the factories counteract each other when introduced together. *Operations Awareness*, *Workplace Communication*, and *Women's Health* are the only trainings that are associated with an increase in the frequency of promotion. Despite the fact that promotions are infrequent, the vast majority of surveyed workers (~90-93% across data collection rounds) did not report any unfair obstacles to get a promotion.

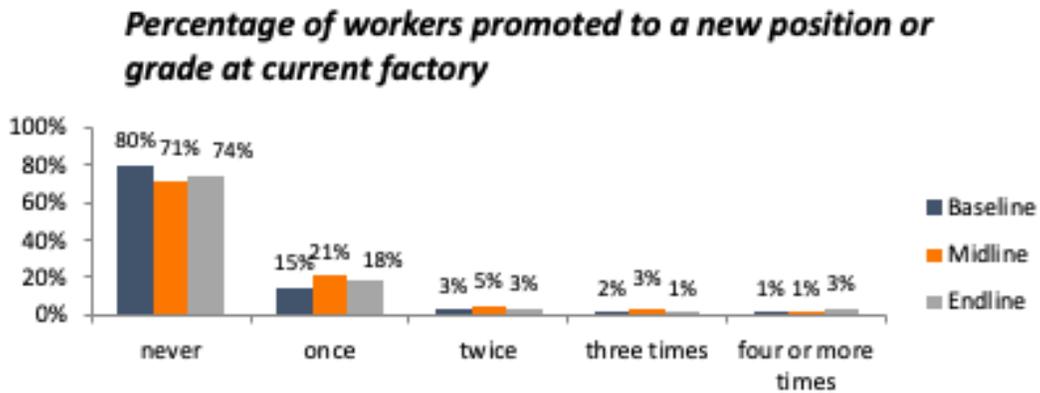
However, there is an improvement in perceptions that workers face obstacles to promotion following hard skills training, particularly *Supervisory Training*, *New Operators Training*, *Supervisory Skills Training*, and the *5S Introduction*. The clustered module of hard

skills trainings is also associated with a reduced belief that the promotion system is unfair and that promotions are based on individual characteristics unrelated to job performance.

One potential explanation for the rarity of promotions is that only 60-65% of workers expressed an understanding of upward mobility in the workplace. This percentage remains constant in all three data collection rounds. At the baseline, workers are already confident in their abilities to produce high-quality work, with 92% of respondents affirming their confidence in their abilities. While individual training modules impact this rate, the clustered modules of hard or soft skills did not.

An understanding of promotion systems within the factories in the study is of interest because workers' perception of their potential mobility or expectations of other incentive mechanisms can greatly influence their productivity. Despite low occurrences of promotion, workers' reported levels of understanding about promotion procedures suggest that trainings can utilize workers' understanding of this system to further incentivize different productivity goals.

Figure 2:



Interpersonal

The power dynamics created by perceptions of relationships in the workplace can influence worker productivity in many dimensions such as willingness to listen to a supervisor, group mindset, and desire to collaborate with one's peers. Because of this, assessing perceptions of interpersonal relationships is another important area of interest. The relevant results are reported in **Tables 6a-6b**. We looked at two dimensions of interpersonal relationships in the workplace: worker-supervisor interactions and worker-worker interactions. While analysis will focus on the former, results are reported related to worker-worker relationships in the stated table.

The effectiveness of the training may be directly related to how well the training is received by the workers or how effectively the trainings were introduced. One key indicator of training effectiveness is how the training affects dehumanization. Dehumanization is measured by whether workers feel angry, frustrated, small or unimportant after interacting with their supervisor. *Key Knowledge for Waste, Quality Activity, Basic Rights/Supply Chain*, and *Workplace Communication* are all associated with a decline in dehumanization. Earlier work has demonstrated that the dehumanization can be a driver of many worker level outcomes, as worker perceptions of their power within the workplace can influence their motivations to attend work, produce efficiently, and more. Accordingly, this result may be one of the reasons why these trainings are often associated with normatively good effects. In contrast, financial literacy, supervisory skills training, and female health trainings are associated with increased dehumanization. Most striking among these is the contribution that female health training is making toward dehumanization, especially considering the predominance of female leadership within these factories.

Similarly, some of the trainings have a surprising effect on workplace conflicts. Generally, the treatment resulted in more conflict and poorer conflict resolution. The *Basic Rights/Supply Chain* training is the only training variable associated with reduced conflict (**Table 6a, Row C**). Similarly, the three training programs on the left of the table, the most robust, technically speaking, are seen with overwhelmingly negative relationships with the outcomes of interest. A similar pattern emerges with verbal abuse. *Basic Rights/Supply Chain* training is associated with less verbal abuse but *New Operators Training, 5S Introduction, Workplace Communication*, and *Financial Literacy* are all associated with increased verbal abuse.

Physical abuse, as measured by *SupMangHit*, declines slightly during the study period but remains concerningly high at the endline with 12% of workers reporting being hit or physically hurt by supervisors.

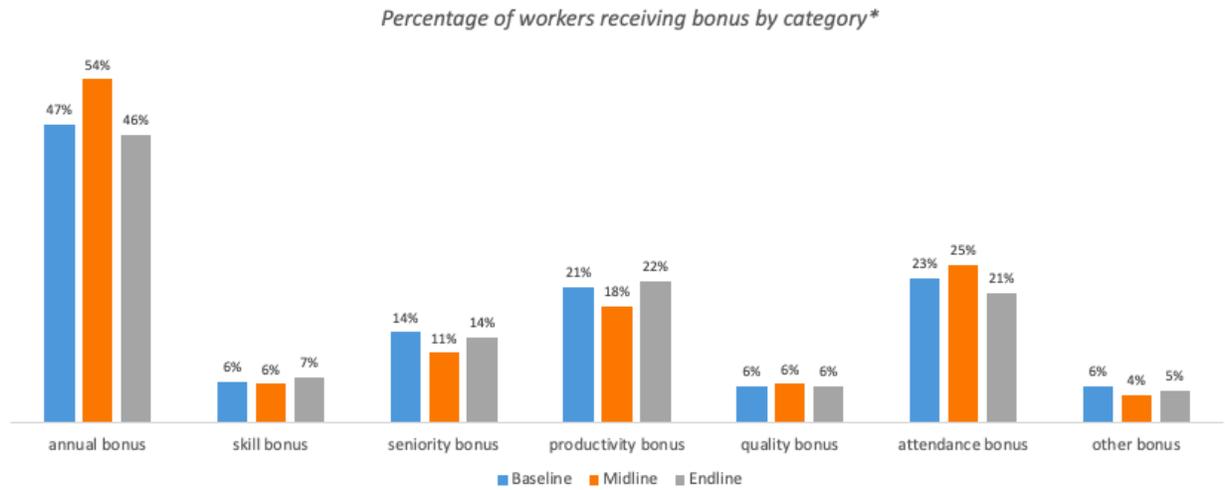
While these results do not represent improved factory welfare, the results are not surprising based on the intervention's primary goal of increasing productivity. It is possible that pressure to increase productivity, especially through technical training programs aimed at supervisors, has resulted in increased tension in the workplace. This suggests that productivity and attendance gains have come at the expense of respect and understanding between different levels within the hierarchy of the factories. While accompanied by the earlier narrative seen in the section on productivity, similar trends can be seen to those described for negative impacts on line balancing due to increased pressure from line supervisors.

Payment

Similar to attitudes related to promotion, perceptions of bonuses and understanding of payment structures may impact worker productivity via worker motivation to work efficiently based on their levels of trust with the factory to pay them what they deserve and their expectations for bonuses based on good performance. Accordingly, we surveyed workers on payment and bonus trends and on their attitudes surrounding payment, with results reported in **Tables 7a-7b**.

Compared to annual bonuses, which were quite common for most respondents across data collection periods (close to 50%), other bonuses in the factories were relatively uncommon, as can be seen in Figure 3, below. Such low occurrences of productivity and attendance bonuses may shed light on trends observed earlier related to those indicators.

The hard skills training cluster is associated with reduced annual and skill bonuses, with *5S Introduction* training the largest contributor to the decline in both cases. The only positive treatment effect for the training clusters on bonuses was for the soft skill cluster on quality bonus. It is possible that the soft skills trainings improved attention to detail on the quality of garments produced in the factories, potentially driving this result. We consider a decline in these bonuses as a negative result for the training; rewarding skills could be a step towards meritocracy and productivity enhancement. It is valid to highlight that skills are particularly hard to identify, measure, and reward.

Figure 3:

When broken down by individual training module, productivity bonuses rise for five of the modules (Row D), including *New Operators Training*, *Quality Activity*, *Basic Rights/Supply Chain*, *Financial Literacy*, and *Supervisory Skills Training*. This is an encouraging result, as the prevalence of productivity bonuses in a factory can directly influence workers' desires to produce efficiently. It is important to note, however, that the increase in productivity bonuses granted also correlates with a decrease in the value of the bonus for each individual worker.

Worker perceptions of their payment may influence their willingness to contribute to increased production line productivity. Most training modules are associated with an improved perception on worker beliefs that other factors unrelated to worker performance influence their payment, a trend that could be explained by the attempt to enhance productivity by encouraging skill development, leadership, and meritocracy. In contrast, most of the modules were also associated with increased worker confusion about the nature of their payment. Most employees trust the factories when it comes to payment. However, with the exception of the Workplace Communication module, all other significant modules are associated with a decrease in trust regarding payment (Row N). That is, for example, corroborated by the decrease in the answer "strongly agree," which indicated absolute certainty that workers were paid what the factory owed them. Similarly, most employees also indicate an understanding of their payment. In particular, the *Quality Activity* training and the *Financial Literacy* module are associated with

considerable decreases in payment comprehension, a relevant and concerning result considering the nature of such trainings.

Amount and form of payment are also of importance due to its tangibility for workers. We calculate worker hourly pay, reported in Row Q, by dividing worker weekly pay by weekly hours. The *Women's Health* module is associated with a substantial increase in hourly pay, with *5S Introduction* also associated with an increase. All other significant variables, both hard and soft skills, are related to a decrease in the hourly pay. This is an important result, as payment is workers' primary driver in coming to work and contributing efficiency.

We see promising results for changes in form of payment. By the endline, most workers are paid either in cash or via direct deposit. The vast majority of workers received payment in cash at baseline (95%), but this percentage fell to 53% at midline and grew slightly to 57% at endline. On one hand, we consider this as a normatively bad decrease since cash payment provides workers with liquidity and freedom to consume as they wish – as opposed to other payment options such as housing or food supply, for example. However, because we see a shift from cash to direct deposit, we consider a decrease in cash payments a normatively good result in our models (Row G). The reduction in cash payments indicated in the *Financial Literacy* and the *Supervisory Skills Training* coefficients is likely due to a choice for payment via direct deposit, which would increase company transparency and enhance transaction safety and accuracy. Though that would be ideal, many satellite factories operate in rural areas where ATMs are not widely available, so the choice for direct deposits would only work if aligned with the presence of financial services and institutions in the satellite factories' vicinities. The hard skills training cluster is associated with an increase in cash payments while the soft skills training cluster is associated with a decrease in cash payments (Row G). This is aligned with the results seen in Row L, where direct deposit decreases for the hard skill cluster and increases for the soft skill cluster.

When surveyed at baseline, only 3% of the workers responded that they were paid via direct deposit. At midline, 45% of the workers said they were paid via direct deposit, a number that decreased only slightly at endline, to 43%. Workers who took part in the *Financial Literacy* training and those whose supervisors received the *Supervisory Skills Training* are associated with higher reports of payment via direct deposit. This is an encouraging payment method trend, as it

increases company transparency and suggests potential financial development of the areas surrounding the satellite factories, which should include financial institutions and ATMs to support remuneration via direct deposit.

We largely observed decrease instances of food, housing, or other-in-kind payments used as forms of compensation. This could indicate a beneficial shift to a form of payment that allows the payee to have freedom of money allocation and a fair wage. By understanding worker perceptions of payment mechanisms in the workplace, we are able to gain insight into what may be motivating other workplace behaviors.

Wellbeing

Worker wellbeing is a fundamental contributor to worker productivity, as physical and emotional wellbeing are essential working conditions to foster efficiency. Accordingly, we evaluate the physical and emotional dimensions of wellbeing to shed light on the working conditions in the satellite factories. Results are reported in Tables **8a-8b**.

We begin our analysis of worker wellbeing with emotional wellbeing. It is surprising to see that a sense of belonging, measured on a decreasing scale for “*Don’t Fit In*,” increases for the hard skills cluster, but decreases for the soft skills cluster. Further, the mean response to this question grows from “disagree” towards “neither agree nor disagree,” showing that workers feel less like they fit into their work environments at endline than midline and at midline than baseline (**Table 2**). This encourages a lack of engagement in the work process and may therefore decrease productivity. This measure of worker wellbeing is particularly important given the high tendency for turnover noted in Better Work’s needs assessment of the factories. A feeling of belonging is a necessary component of work retention. It is therefore noteworthy that we see these results in a successful intervention.

Reports of depression increase throughout the implementation of the training programs. Individually, the *Women’s Health* and the *Supervisory Skills Training* are related to a decrease in reports of depression (Row C). The *Workplace Communication* training, also a soft skills module, is associated with increased depression rates, indicating that these trainings counteract each other, as soft skills are not significant when clustered.

Despite the increase in reports of depression, workers’ life satisfaction indicators did not show much variation. In all three surveys, close to 80% of workers indicated that they were

“somewhat satisfied” with the state of their lives. The analysis indicates that trainings counteract each other on their overall effects on life satisfaction (Row G). Individually, *Women’s Health* is significantly associated with an increase in life satisfaction, while the *New Operators Training* and *5S Introduction Training* are related to decreases in life satisfaction. This could relate to an explanation suggested earlier regarding the potential personal impact of the *Women’s Health* training compared to other trainings that focus more directly on the workplace and its processes.

Workers may be more depressed, but their satisfaction with the job increased throughout the trainings. With the average response close to 4, “somewhat satisfied”, in all three collection rounds, there is an expressive 5% increase in the frequency of the last two answers from baseline (74%) to endline (79%). The soft skills training cluster saw a decrease in job satisfaction rates. Trainings had mixed results for growth mindset, or the belief that people can develop their skills and intelligence levels through dedication and hard work, with *Supervisory Skills Training*, *New Operators Training*, *Quality Activity*, and *Basic Rights Training* all negatively associated with the notion that people cannot alter their basic intelligence. Over 50% of workers agreed with this sentiment. This reflects a lack of confidence in their capabilities, which can have a negative impact on productivity. Similarly, we see substantially decreased reports of pride at work for *New Operators Training* and *Quality Activity* (Row A). In contrast, *Workplace Communication* training is related to more than one answer-point less in agreement, indicating that workers who take this training tend to be more confident about their intelligence and learning abilities

In terms of overall health, most statistically significant trainings are associated with a decrease in overall health quality reports, a trend that is confirmed by this variable’s decreasing average from 4.374 to 4.174, which indicate already high levels of self-reported health.

In terms of physical wellbeing, close to 80% of the workers responded they have “never” or “rarely” been injured at work over the three months that preceded each data collection round. The hard skills cluster is associated with a decrease in the incidence of injury (Table 8b, Row E). This is unsurprising, as technical trainings on proper production protocols should indeed increase workplace safety. Conversely, with the average answer shifting from “never” to “rarely” during trainings over time, we see that the *5S Introduction Training* and *Supervisory Skills Training* modules are associated with an increase in work injury reports.

Sexual harassment in Jordanian factories is reportedly infrequent, with 91-95% of respondents indicating that their superiors never touch them or talk to them in a sexual manner. This value increased by 4% from baseline to endline. *Quality Activity* and *Financial Literacy* trainings are associated with a decrease in sexual harassment reports, while *5S Introduction* and *Operations Awareness* training are associated with an increase in reports.

The workplace environment often plays a role in worker development and wellbeing. We measured work conditions related to air quality, excessive heat, and the presence of a chemical odor in order to understand external working conditions as they relate to the intervention. These three variables are coded on a scale of 1-4, with 1 indicating that a worker is very concerned about the working condition of interest and 4 indicating no concern. Recognizing this, an increased value for any of these three indicators suggests worsening factory conditions in that area.

The soft skills cluster is associated with increased levels of concern about air quality and excessive heat (Table 8b, Rows M and N). When looking at the individual training modules, it is clear that *Women's Health* training has the most substantial relationship with excessive heat. As described earlier, it is possible that the trainings are associated with increased awareness levels about issues and rights related to the programs. In this case, perhaps health training could have elevated workers' awareness about the danger of excessive heat.

In addition to external conditions, physical working conditions include the availability of proper toilet facilities (ProperToilet) and provision of personal protective equipment (ProvisionPPE) at the factories. Most notable for these indicators is their substantial positive relationship with *Quality Activity* (Column 7).

Looking at Table 8a as a whole, it is interesting that *5S Introduction* and Supervisory Training are consistently associated with negative wellbeing outcomes. In contrast, the *Key Knowledge for Waste* module is associated only with positive outcomes. Interestingly, looking at **Table 8b** shows a different story, as the hard skills cluster is associated only with positive outcomes and the soft skills cluster is associated with mostly negative outcomes.

5. Discussion and Conclusion

Evidently, there are varied results on the effectiveness of BWJ training modules on the indicators of interest. It is helpful to put these findings into the context of the overall goals of the intervention, which in this case were mainly to target worker productivity levels. Bearing this in mind, this analysis establishes the relationships between the training modules and the primary outcomes of interest, which are primarily shown in Tables 3a-3b. Most closely related to this goal, we found that the *Key Knowledge for Waste* and *Quality Activity* training modules improved the efficiency rate in the factories. These two training modules are also generally associated with positive outcomes related to attendance (Table 4a), promotion (Table 5a), international relationships (Table 6a), and worker wellbeing (Table 8a).

In contrast, we see the most consistent negative outcomes on the left side of the individual module tables. It is interesting to take this observation into account with the target increases seen in Columns 2-3 in Table 3a. It makes sense that productivity does not increase for these modules because the effect of increasing the target is compounded by several other negative workplace outcomes that may influence worker productivity through different channels as well. Another important result connected directly to productivity outcomes is the overwhelmingly positive impact of the soft skill clusters. This result suggests that targeting workers through soft skills training, even when the desired outcomes relate more closely to technical training, may be more helpful in yielding outcomes.

Other interesting findings of interest include the negative relationships between *Financial Literacy* and *Women's Health* trainings and productivity, attendance, and interpersonal relationship indicators. These training modules do not target productivity, so it is unsurprising to see that the modules do not lead to the desired outcomes. The effects, however, are interesting in terms of their implications for the intervention's impact on worker empowerment. Dimensions of worker empowerment have connections through various channels to different outcomes of interest, including productivity. While this concept is out of the scope of this study, it is an important finding to bear in mind through future iterations of BWJ planning.

The findings of this study helped illuminate larger issues related to conflicting factory outcomes, and the forces that work together or against each other—namely worker-supervisor dynamics and workplace productivity. Further work should be done to analyze how these

outcomes work with each other in a system to influence larger outcomes of productivity, and especially what kinds of training programs can work to promote the integrity of both elements.

A greater understanding of these nuanced systems can allow stronger targeting of government funding into viable business structures that can improve the livelihoods of rural women, while also turning a profit for the larger organizations. Further analysis of these systems is essential as the satellite model persists and the Jordanian garment sector continues to grow. Satellite factories can play an important role in bolstering the Jordanian manufacturing sector, while also providing an important role in sustaining the livelihoods of rural Jordanians, especially women, who work and can seek further mobility in these factories. As Jordan continues to suffer from extreme rates of unemployment, further exacerbated by the constant influx of migration, productive satellite factories can be instrumental in finding a sustainable solution to rural unemployment.

Appendix: Tables and Figures

Figure 1: Gantt Chart – Intervention Timeline

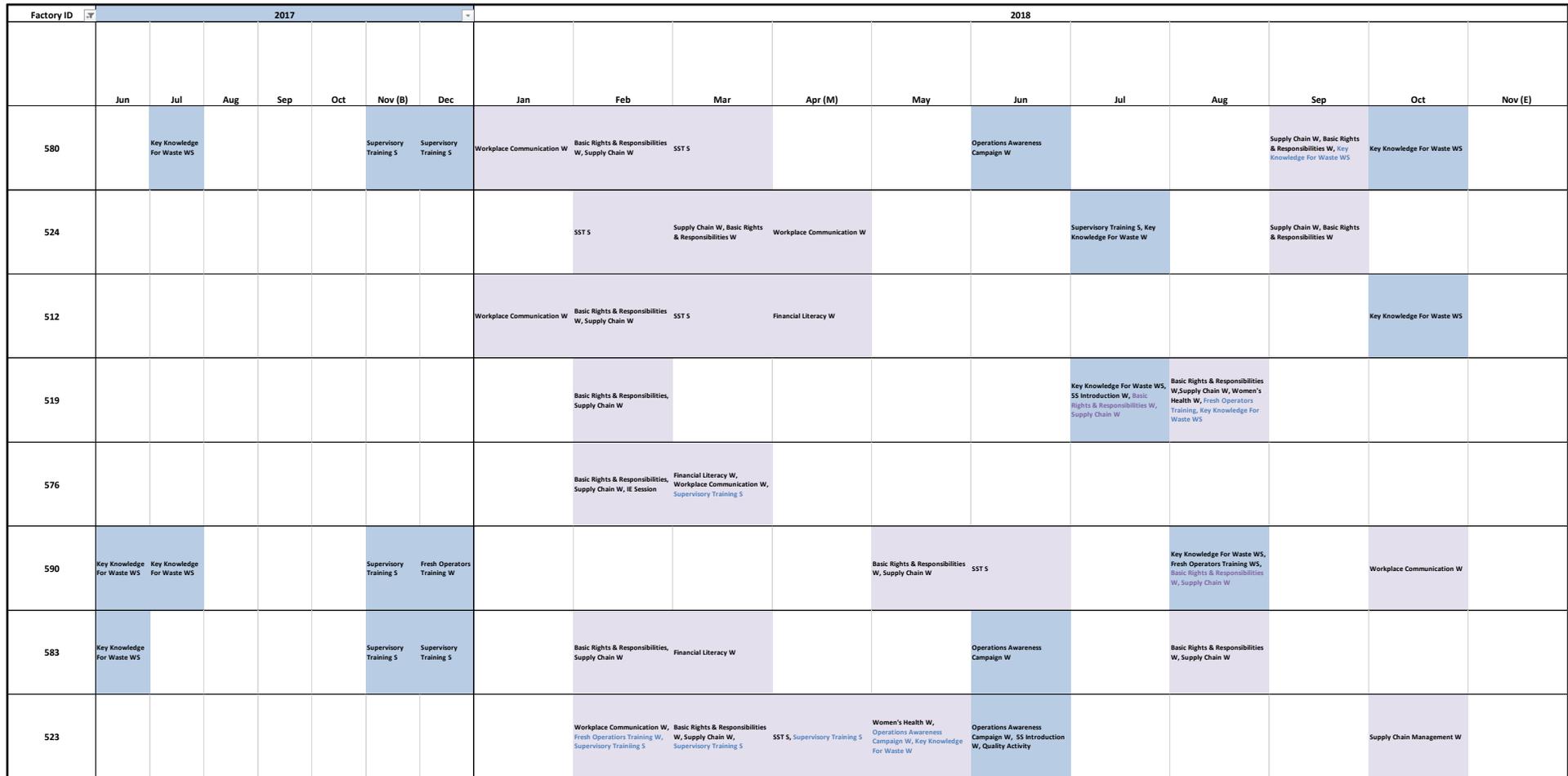


Chart Key :

	Hard Skills training
	Soft Skills training
W	Worker training
S	Supervisor training
(B)	Baseline survey
(M)	Midline survey

Table 1: Variables for Analysis

Variable Name	Definition	Coding Scheme
Hourly Productivity	How often do you complete your hourly production target?	1=Never 2=Rarely 3=Occasionally 4=Often 5=Regularly
Daily Productivity	How often do you complete your daily production target?	1=Never 2=Rarely 3=Occasionally 4=Often 5=Regularly
Work Piling	How often do you feel like work is piling up at your workstation?	1=Never 2=Rarely 3=Occasionally 4=Often 5=Every day
Sit Idle	How often do you sit idle at your workstation because work is not flowing smoothly down the line?	1=Never 2=Rarely 3=Occasionally 4=Often 5=Every day
No Machines Operated	How many machines can you operate in the factory?	1=None 2=One 3=Two 4=Three 5=Four 6=Five or more
No Operations	How many operations can you do?	1=None 2=One 3=Two 4=Three 5=Four 6=Five or more
Sup_WorkStudy	How often does your supervisor or factory engineer conduct a work-study on your work?	1=Never 2=Rarely 3=Occasionally 4=Often 5=Regularly
Sup_Help	How often does your supervisor, industrial engineer, or QC have to help you improve your work?	1=Never 2=Rarely 3=Occasionally 4=Often 5=Regularly
Coworker_Help	How often does an A-grade jumper or other co-worker have to help you complete your production quota?	1=Never 2=Rarely 3=Occasionally 4=Often 5=Regularly
More_Job_Training	How often do you need additional training for your job?	1=Never 2=Rarely 3=Occasionally 4=Often 5=Regularly
Abstenteeism	In the last month, how many times were you absent from work for any reason?	1=None 2=One 3=Two 4=Three 5=Four 6=Five or more
Absence	When you know you are going to be absent from work, do you tell or ask your supervisor ahead of time?	1=Never 2=Rarely 3=Sometimes 4=Often 5=Always

Feel_Like_Quitting	I often think about quitting.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
LateComings	In the last month, how many times were you late to work for any reason?	1=None 2=One 3=Two 4=Three 5=Four 6=Five or more
Understand_Leave	I understand how to apply for leave in this factory	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Proud_Work	I am proud of the work I do in this factory.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Overtime_Not_Worked	The last time there was overtime work in your section, how many workers left and did not work overtime?	1=No one left; everybody in my section stayed 2=A few people left 3>About half of the people left 4=Most of the people left 5=Everybody left; no one stayed
Overtime_Worked	How many days did you work overtime in the last week?	1=1 2=2 3=3 4=4 5=5 6=6 7=7
Promoted	How many times have you been promoted to a new job since starting work in your factory?	1=None 2=One 3=Two 4=Three 5=Four 6=Five or more
Obstacles_Promotion	In the last three months, which of the following have happened to you? Select all that apply. You faced unfair obstacles to promotion.	1=Yes 0=No
Fair_Promotion	The promotion system in this factory is fair.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Other_Factors_Promotion	Whether I get promoted depends in part on factors unrelated to my performance-like my background, my gender, or my relationship with my supervisor.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Understand_Promotion	I understand how to earn a promotion in this factory.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Confident_Quality	I am confident that I can produce high-quality work.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Managers_Effective	The managers in this factory are effective at their jobs.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree

		4=Agree 5=Strongly agree
Union_Improvement	How likely is it that a union will be able to make things better for workers?	1=Not at all likely 2=Slightly likely 3=Likely 4=Very likely 5=Certain
AngryFrustratedSup	How often do you feel angry or frustrated after talking to your supervisor?	1=Never 2=Rarely 3=Sometimes 4=Often 5=Always
SmallUnimportantSup	How often do you feel small or unimportant after talking with your supervisor?	1=Never 2=Rarely 3=Sometimes 4=Often 5=Always
SupConflict	How often do you have conflicts or disagreements with your supervisor?	1=Never 2=Rarely 3=Sometimes 4=Often 5=Always
Sup_ResolvedConflict	Think about the last conflict or disagreement you had with your supervisor. How satisfied were you with the way it was resolved?	1=Completely dissatisfied 2=Somewhat dissatisfied 3=Neither satisfied nor dissatisfied 4=Somewhat satisfied 5=Completely satisfied 6=Conflict has not been resolved
Verbal AbuseSup	How often does your supervisor yell at you to make you work faster, or for making mistakes?	1=Never 2=Rarely 3=Sometimes 4=Often 5=Always
SupMangHit	How often do supervisors or managers hit workers or try to physically hurt them?	1=Never 2=Rarely 3=Sometimes 4=Often 5=Always
Punished_Disagree	I would be punished if I openly disagreed with management practices.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Speak_No_Change	Nothing changes even if I speak up to my supervisor.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
MakeComplaint	In the last three months, how many complaints have you made to a supervisor or manager?	1=None 2=One 3=Two 4=Three 5=Four 6=Five or more
SatisfiedComplaint	How satisfied are you with the way your complaint(s) were addressed?	1=Completely dissatisfied 2=Somewhat dissatisfied 3=Neither satisfied nor dissatisfied 4=Somewhat satisfied 5=Completely satisfied 6=Complaint has not been addressed
Complaint_Risky	Imagine that a supervisor in this factory has said that he can make things very difficult for a female worker by treating her badly unless she has sex with him. It would be extremely risky for her to make a formal complaint against him.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree

		4=Agree 5=Strongly agree
Comfortable_Help	If you had a question about how your pay was calculated, how comfortable would you be asking for help?	1=Very uncomfortable 2=Somewhat uncomfortable 3=Somewhat comfortable 4=Very comfortable
Close_Coworkers	I feel close to my coworkers.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Coworkers_Support	I get help and support from my coworkers.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Coworker_Ignore	My coworkers usually ignore me.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
CoworkerConflict	How often do you have conflicts or disagreements with your coworkers?	1=Never 2=Rarely 3=Sometimes 4=Often 5=Always
Resolve_Conflict	Think about the last conflict or disagreement you had with a coworker. How satisfied were you with the way it was resolved?	1=Completely dissatisfied 2=Somewhat dissatisfied 3=Neither satisfied nor dissatisfied 4=Somewhat satisfied 5=Completely satisfied 6=Conflict has not been resolved
Confident_Opinion	I am confident that I can voice my opinion at work.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Depend_Quality	Other people depend on me to produce high-quality work.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Comfortable_Mistake	If I made a mistake at work, I would feel comfortable telling someone about it.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Annual_Bonus	Which of the following bonuses have you earned? Annual Bonus	1=Yes 0=No
Skill_Bonus	Which of the following bonuses have you earned? Skill Bonus	1=Yes 0=No
Seniority_Bonus	Which of the following bonuses have you earned? Seniority Bonus	1=Yes 0=No
Productivity_Bonus	Did you receive a productivity bonus the last time you were paid?	1=No 2=Yes, under 1 JD 3=Yes, 1 to 3 JD 4=Yes, 4 to 5 JD 5=Yes, 6 to 7 JD 6=Yes, 8 to 10 JD 7=Yes, 11 to 15 JD 8=Yes, 16 to 20 JD 9=Yes, 21 to 25 JD 10=Yes, more than 25 JD
Quality_Bonus	Did you receive a quality bonus the last time you were paid?	1=No 2=Yes, under 1 JD 3=Yes, 1 to 3 JD

		4=Yes, 4 to 5 JD 5=Yes, 6 to 7 JD 6=Yes, 8 to 10 JD 7=Yes, 11 to 15 JD 8=Yes, 16 to 20 JD 9=Yes, 21 to 25 JD 10=Yes, more than 25 JD
Attendance_Bonus	Which of the following bonuses have you earned? Attendance Bonus	1=Yes 0=No
Cash	How do you receive your pay? Cash	1=Yes 0=No
Check	How do you receive your pay? Check	1=Yes 0=No
Direct_Deposit_ATM	How do you receive your pay? Direct Deposit or ATM	1=Yes 0=No
Food	How do you receive your pay? Food	1=Yes 0=No
Housing	How do you receive your pay? Housing	1=Yes 0=No
Other_in_kind	How do you receive your pay? Other in-kind	1=Yes 0=No
Trust_Payment	I trust the factory to pay me the money I have earned.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Connection_Work_Pay	There is a clear link between how much work I do and how much I am paid.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Understand_Pay	I understand how my pay is calculated.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Other_Factors_Pay	My pay depends in part on factors unrelated to my performance--like my background, my gender, or my relationship with my supervisor.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Confusing_Pay	How often does the amount you are paid seem confusing or unfair?	1=Never 2=Rarely 3=Sometimes 4=Often 5=Always
Detailed_PaySlip	When you get paid, do you also receive a pay slip explaining your wage calculations?	1=Yes 2=No
Comfort_Pay_Question	If you had a question about how your pay was calculated, how comfortable would you be asking for help?	1=Very uncomfortable 2=Somewhat uncomfortable 3=Somewhat comfortable 4=Very comfortable
Depression	During the past month, including today, how often have you felt sad or depressed?	1=Never 2=Rarely 3=Sometimes 4=Often 5=Always
Life_Satisfied	How satisfied are you with your life overall?	1=Completely dissatisfied 2=Somewhat dissatisfied 3=Neither satisfied nor dissatisfied 4=Somewhat satisfied 5=Completely satisfied
Job_Satisfied	How satisfied are you with your job overall?	1=Completely dissatisfied 2=Somewhat dissatisfied 3=Neither satisfied nor dissatisfied

		4=Somewhat satisfied 5=Completely satisfied
Intelligence	You can learn new things, but you can't change your basic intelligence.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
Sexual_Harassment	Do any of the supervisors or managers ever talk to you or touch you in a sexual way?	1=No, never 2=Only rarely 3=Yes, sometimes 4=Yes, often
Don't_Fit_In	Sometimes I feel like I don't fit in at this factory.	1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly agree
WorkInjury	In the last three months, how often have you been injured because of your work?	1=Never 2=Rarely 3=Sometimes 4=Often 5=Always
Overall Health	How is your overall health?	1=Very poor 2=Poor 3=Fair 4=Good 5=Very good
PoorAirQuality	How concerned are you with dusty or polluted air in the factory?	1=Very concerned 2=Somewhat concerned 3=Slightly concerned 4=Not concerned
ExcessiveHeat	How concerned are you with excessive heat in the factory?	1=Very concerned 2=Somewhat concerned 3=Slightly concerned 4=Not concerned
ChemicalOdor	How concerned are you with bad chemical smells in the factory?	1=Very concerned 2=Somewhat concerned 3=Slightly concerned 4=Not concerned
ProperToilet	How often are the toilet facilities for workers in this factory clean, private, and easy to get to?	1=Never 2=Rarely 3=Sometimes 4=Often 5=Always
ExcessiveNoise	How often is the workplace so noisy that people have to shout to be heard by someone nearby?	1=Never 2=Rarely 3=Sometimes 4=Often 5=Always
Provision PPE	How often do you use PPEs (personal protective equipment like gloves or masks) provided by the factory?	1=The factory doesn't provide PPEs/personal protective equipment 2=Never 3=Rarely 4=Sometimes 5=Often 6=Always

Table 2: Summary Statistics

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	Baseline					Midline					Endline				
	N	mean	sd	min	max	N	mean	sd	min	max	N	mean	sd	min	max
confusing_pay	145	2.634	1.201	1	5	151	2.834	1.272	1	5	159	2.597	1.303	1	5
detailed_payslip	199	1.010	0.100	1	2	211	1.071	0.258	1	2	219	1.068	0.253	1	2
comfort_pay_question	196	3.245	0.889	1	4	179	3.067	0.903	1	4	191	3.099	0.949	1	4
trust_payment	200	3.685	1.035	1	5	187	3.636	1.086	1	5	206	3.636	0.947	1	5
connection_work_pay	187	3.342	1.112	1	5	167	3.060	1.165	1	5	180	3.128	1.144	1	5
understand_pay	194	3.840	0.882	1	5	178	3.826	0.836	1	5	195	3.718	0.918	1	5
other_factors_pay	182	2.588	1.383	1	5	164	2.604	1.295	1	5	177	2.497	1.248	1	5
overtime_not_worked	140	2.857	1.652	1	5	126	2.913	1.580	1	5	149	2.544	1.596	1	5
overtime_worked	66	3	2.405	1	7	58	3.034	2.255	1	7	63	3.048	2.536	1	7
union_improvement	166	2.855	1.385	1	5	148	2.588	1.309	1	5	160	2.475	1.317	1	5
other_factors_promotion	167	2.563	1.391	1	5	152	2.375	1.233	1	5	160	2.406	1.167	1	5
fair_promotion	183	2.902	1.314	1	5	182	2.725	1.375	1	5	182	2.725	1.258	1	5
latecomings	205	1.493	1.027	1	6	205	1.459	0.926	1	6	218	1.528	1.008	1	6
absence	203	4.296	1.091	1	5	206	4.155	1.204	1	5	219	4.027	1.270	1	5
understand_leave	197	4.086	0.838	1	5	199	3.894	0.929	1	5	205	3.888	0.951	1	5
proud_work	204	4.029	0.941	1	5	197	3.822	0.997	1	5	214	3.893	0.941	1	5
depend_quality	196	3.908	1.009	1	5	191	3.890	0.942	1	5	200	3.890	0.831	1	5
managers_effective	197	3.873	1.064	1	5	190	3.611	1.157	1	5	200	3.795	0.994	1	5
understandn_promotion	177	3.463	1.168	1	5	154	3.468	1.030	1	5	159	3.365	1.076	1	5
feel_like_quitting	197	2.457	1.251	1	5	180	2.800	1.266	1	5	195	2.785	1.298	1	5
confident_quality	201	4.308	0.771	1	5	190	4.126	0.759	1	5	212	4.165	0.739	1	5
comfortable_mistake	202	3.941	1.011	1	5	199	3.764	1.030	1	5	212	3.858	0.928	1	5
comfortable_help	204	4.113	0.866	1	5	206	3.888	0.969	1	5	214	3.893	0.863	1	5
punished_disagree	177	3.215	1.167	1	5	159	3.082	1.237	1	5	189	3.148	1.176	1	5
confident_opinion	201	3.776	1.084	1	5	192	3.677	1.121	1	5	202	3.733	1.021	1	5
resolve_conflict	184	3.728	1.009	1	5	175	3.640	0.960	1	5	185	3.497	1.027	1	5
speak_no_change	187	3.235	1.200	1	5	180	3.372	1.153	1	5	188	3.282	1.179	1	5
MakeComplaint	188	1.862	1.419	1	6	187	2.118	1.674	1	6	202	2.099	1.678	1	6
SatisfiedComplaint	78	3.385	1.581	1	6	78	2.859	1.457	1	6	87	3.115	1.458	1	6
AngryFrustratedSup	196	2.643	1.196	1	5	191	2.681	1.118	1	5	202	2.624	1.175	1	5
SmallUnimportantSup	195	2.215	1.169	1	5	181	2.204	1.332	1	5	194	2.340	1.208	1	5
SupConflict	192	2.198	1.141	1	5	188	2.372	1.161	1	5	197	2.305	1.182	1	5
sup_resolvedconflict	94	3.064	1.366	1	5	116	2.862	1.407	1	5	112	3.143	1.439	1	5
VerbalAbuseSup	189	2.339	1.289	1	5	189	2.508	1.343	1	5	197	2.569	1.360	1	5
dont_fit_in	178	2.112	1.225	1	5	168	2.381	1.275	1	5	188	2.468	1.277	1	5
close_coworkers	199	4.266	0.873	1	5	202	4.109	0.874	1	5	210	4.114	0.900	1	5
coworker_ignore	192	1.734	0.953	1	5	180	1.983	1.080	1	5	200	1.965	1.072	1	5
coworkers_support	203	3.995	1.012	1	5	195	3.928	0.933	1	5	212	3.802	1.034	1	5
CoworkerConflict	190	2.079	1.078	1	5	185	2.265	1.084	1	5	201	2.184	1.015	1	5
SupMangHit	184	1.207	0.645	1	5	164	1.232	0.661	1	5	173	1.214	0.652	1	5
PoorAirQuality	196	2.321	1.156	1	4	191	2.110	1.053	1	4	206	2.184	1.115	1	4
ExcessiveHeat	196	2.327	1.130	1	4	191	2.288	1.145	1	4	199	2.317	1.157	1	4
ChemicalOdor	190	2.463	1.171	1	4	179	2.251	1.226	1	4	196	2.276	1.192	1	4
ProperToilet	193	3.565	1.417	1	5	185	3.222	1.355	1	5	202	3.238	1.279	1	5
ExcessiveNoise	194	2.866	1.359	1	5	181	2.917	1.277	1	5	201	3.040	1.260	1	5
ProvisionPPE	192	4.203	1.711	1	6	192	3.849	1.738	1	6	206	4.049	1.555	1	6
WorkInjury	195	1.569	0.963	1	5	187	1.717	1.097	1	5	197	1.711	1.108	1	5
Overallhealth	206	4.374	1.165	1	6	208	4.298	1.318	1	6	224	4.174	1.183	1	6
Depression	193	2.886	1.215	1	5	201	2.950	1.195	1	5	212	3.090	1.142	1	5
intelligence	165	3.145	1.312	1	5	168	3.185	1.197	1	5	186	3.242	1.163	1	5
JobSatisfied	195	3.897	1.158	1	5	194	3.691	1.295	1	5	207	3.942	1.209	1	5
LifeSatisfied	194	4.088	1.109	1	5	187	3.882	1.256	1	5	207	4.019	1.182	1	5
SexualHarassment	196	1.173	0.600	1	4	189	1.180	0.564	1	4	202	1.084	0.396	1	4
complaint_risky	168	2.935	1.620	1	5	161	2.845	1.511	1	5	180	2.928	1.502	1	5
Absenteeism						197	2.223	1.400	1	6	207	1.874	1.196	1	6
Sup_WorkStudy						159	3.390	1.488	1	5	178	3.270	1.444	1	5
Sup_Help						177	2.887	1.177	1	5	190	2.916	1.253	1	5
Work_Piling						172	2.860	1.206	1	5	196	2.827	1.137	1	5
Sit_Idle						166	2.392	1.077	1	5	186	2.280	1.059	1	5
Coworker_Help						173	2.526	1.103	1	5	184	2.489	1.121	1	5
No_Machines_Operated						131	2.908	1.725	1	6	145	2.897	1.782	1	6
No_Operations						136	3.169	1.766	1	6	159	3.358	1.867	1	6
More_Job_Training						169	2.249	1.281	1	5	182	2.198	1.250	1	5
No_Promotions						182	1.533	0.984	1	6	195	1.415	0.866	1	6
Hourly_Target_Met						79	4.228	1.062	1	5	95	4.189	1.188	1	5
Daily_Target_Met						49	4.041	1.136	1	5	49	4.143	1.099	1	5
Weekly_Hours	192	41.01	19.11	0.50	76.50	192	40.78	17.36	0.50	87	207	43.30	16.25	0.5	63

annual_bonus	140	0.471	0.501	0	1	164	0.543	0.500	0	1	156	0.455	0.500	0	1
skill_bonus	140	0.0643	0.246	0	1	164	0.0610	0.240	0	1	156	0.0705	0.257	0	1
seniority_bonus	140	0.143	0.351	0	1	164	0.110	0.314	0	1	156	0.135	0.342	0	1
productivity_bonus	140	0.214	0.412	0	1	164	0.183	0.388	0	1	156	0.224	0.419	0	1
quality_bonus	140	0.0571	0.233	0	1	164	0.0610	0.240	0	1	156	0.0577	0.234	0	1
attendance_bonus	140	0.229	0.421	0	1	164	0.250	0.434	0	1	156	0.205	0.405	0	1
receive_prod_bonus	176	0.278	0.449	0	1	179	0.369	0.484	0	1	193	0.363	0.482	0	1
receive_qual_bonus	163	0.245	0.432	0	1	173	0.353	0.479	0	1	195	0.292	0.456	0	1
cash	203	0.946	0.227	0	1	206	0.534	0.500	0	1	225	0.573	0.496	0	1
check	203	0.0098	0.099	0	1	206	0.00971	0.098	0	1	225	0.0222	0.148	0	1
Direct_deposit_ATM	203	0.0345	0.183	0	1	206	0.447	0.498	0	1	225	0.418	0.494	0	1
Food	203	0.0345	0.183	0	1	206	0.0194	0.138	0	1	225	0.00444	0.0667	0	1
Housing	203	0.0049	0.070	0	1	206	0.0243	0.154	0	1	225	0.00444	0.0667	0	1
Other_in_kind	203	0.0246	0.155	0	1	206	0	0	0	0	225	0	0	0	0
obstacles_promotion	185	0.0757	0.265	0	1	178	0.0730	0.261	0	1	183	0.104	0.306	0	1

Table 3a: Individual Training Modules and Productivity Variable Relationships

		5S Intro	Supervisor Training	SST	OPA Awareness	New Operators Training	Key Knowledge for Waste	Quality Activity	Basic Rights	Workplace Comm.	Financial Literacy	Women's Health
	Outcome Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(A)	Efficiency Rate	-73.84	-35.82		-37.80		22.13	239.20	-35.15			-110.40
(B)	Efficiency Rate, target controlled	-84.25			-37.35		22.54	243.40	-61.26			-104.80
(C)	Efficiency Rate, In(target) controlled	-68.86						233.70	-71.70		46.14	-90.57
(D)	Target	-167.20	116.20	231.70		-92.49	56.11	92.28	-305.50		182.50	49.05
(E)	In Target		0.79	0.98	0.45			-0.43	-0.85	0.53	0.91	0.58
(F)	Work Piling	0.70	0.48	1.28	0.42	0.89	-0.61	-0.34	-0.50		1.37	
(G)	Sit Idle							-0.42	-1.03			-0.34
(H)	No Machines Operated	-1.37	-1.16		-0.99	-1.11		3.84	0.72	-0.91	-1.26	
(I)	No Operations	-2.21	-2.06	-2.29	-0.31	-0.52	1.39	3.35		0.74	-0.71	-1.15
(J)	Supervisor Work Study	-1.74	-1.06	-1.57	-0.75	-0.45	0.77	2.51	0.68	0.56	-0.44	-0.96
(K)	Often Supervisor Help	-0.76	-1.10	-1.31	-0.31		0.29	1.23	1.03		-0.36	-1.22
(L)	Often Co-worker Help	-0.64	-0.73		-0.79	-0.51	0.55	0.36	-0.71	-0.68		
(M)	More Job Training	-1.60	-1.46		-0.97	-0.71	0.62	2.75	-0.20	-1.08	-0.77	-0.85

Table 3b: Hard vs. Soft Skills Training and Productivity Variable Relationships

		Hard Skills	Soft Skills
	Outcome Variable	(1)	(2)
(A)	Efficiency Rate		12.55
(B)	Efficiency Rate, target controlled		
(C)	Efficiency Rate, In(target) controlled		
(D)	Target	30.22	
(E)	In Target		
(F)	Work Piling		
(G)	Sit Idle	-0.09	-0.15
(H)	No Machines Operated		0.39
(I)	No Operations		
(J)	Supervisor Work Study	-0.27	0.25
(K)	Often Supervisor Help	-0.34	0.13
(L)	Often Co-worker Help		-0.15
(M)	More Job Training		

Table 4a: Individual Training Modules and Attendance, Turnover, and Overtime Variables

		5S Intro	Supervisor Training	SST	OPA Awareness	New Operators Training	Key Knowledge for Waste	Quality Activity	Basic Rights	Workplace Comm.	Financial Literacy	Women's Health
	Outcome Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(A)	Absence			-1.11	0.86	0.51	0.53		0.52	0.50	-0.41	-0.62
(B)	Abstenteeism	-0.69			-0.46	-0.74	0.28	-1.02	0.21	-0.22		0.62
(C)	Feel Like Quitting	-0.49	-0.45	0.97						-0.97	0.69	0.49
(D)	Late Comings					-0.28		-0.84				0.48
(E)	Understand Leave	-0.75	-0.78	-1.14	0.31	0.68	0.86	1.38	0.37	0.32		-1.39
(F)	Overtime Not Worked			-1.34	-0.43		-0.93			1.53		
(G)	Overtime Worked		1.20	2.70	0.86	-1.18			-1.07	-1.47	0.82	3.42
(H)	Weekly Hours			-7.50		24.85		36.47	7.24	7.92		-32.79

Table 4b: Hard vs. Soft Skills Training and Attendance, Turnover, and Overtime Variables

		Hard Skills	Soft Skills
	Outcome Variable	(1)	(2)
(A)	Abstenteeism		
(B)	Absence	0.18	-0.14
(C)	Feel Like Quitting		0.13
(D)	Late Comings		
(E)	Understand Leave		
(F)	Overtime Not Worked		
(G)	Overtime Worked	0.63	0.29
(H)	Weekly Hours		1.43

Table 5a: Individual Training Modules and Promotion and Performance Variables

		5S Intro	Supervisor Training	SST	OPA Awareness	New Operators Training	Key Knowledge for Waste	Quality Activity	Basic Rights	Workplace Comm.	Financial Literacy	Women's Health
	Outcome Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(A)	Promoted	-0.20		-0.18	0.20	-0.68		-0.49	-0.21	0.29		0.70
(B)	Obstacles Promotion	-0.16	-0.14	-0.17		-0.12			0.08			
(C)	Fair Promotion											
(D)	Other Factors Promotion			1.02		0.87	-0.58		-0.80	-1.02		-1.13
(E)	Understand Promotion	0.76		0.75		-0.82		-1.97	-0.28			1.11
(F)	Confident Quality	-0.39	-0.37	-0.38	0.22	0.33	0.48	0.22	0.33		0.24	-0.57
(G)	Managers Effective	-0.08	-0.50	-0.31	-0.48	-0.56	0.14	0.54	0.20	-0.21	0.22	
(H)	Union Improvement	-1.07	-0.89					2.41			0.93	

Table 5b: Hard vs. Soft Skills Training and Promotion and Performance Variables

		Hard Skills	Soft Skills
	Outcome Variable	(1)	(2)
(A)	Promoted		
(B)	Obstacles Promotion	-0.06	
(C)	Fair Promotion	0.14	
(D)	Other Factors Promotion	-0.20	
(E)	Understand Promotion		
(F)	Confident Quality		
(G)	Managers Effective		
(H)	Union Improvement		

Table 6a: Individual Training Modules and Interpersonal Variables

		5S Intro	Supervisor Training	SST	OPA Awareness	New Operators Training	Key Knowledge for Waste	Quality Activity	Basic Rights	Workplace Comm.	Financial Literacy	Women's Health
	Outcome Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(A)	Angry Frustrated Sup	0.67		0.64			-0.71	-2.26	-0.34	-0.41	0.67	-1.15
(B)	Small Unimportant Sup	0.26							-0.46		0.57	
(C)	Sup Conflict	0.48				0.36			-0.40	0.46	0.27	
(D)	Sup Resolved Conflict	0.34				1.24					-0.54	-0.55
(E)	Verbal Abuse Sup	0.86		0.71		0.68			-0.08	-0.67	0.62	
(F)	Sup Mang Hit	0.70	-0.13	-0.42	0.16	-0.15		-0.65	0.33		-0.50	
(G)	Punished Disagree	0.51		1.08		0.23	-1.68	-0.51	-0.74	-0.71	0.50	
(H)	Speak No Change	0.62	0.49	0.47	0.37	-0.46	-1.17	-1.93			-0.32	1.09
(I)	Make Complaint					0.68						
(J)	Complaint Risky		0.85	0.97							0.64	2.05
(K)	Satisfied Complaint	1.26		-3.76	0.93	1.83				4.13	-0.94	
(L)	Comfortable Help	-0.49	-0.50	-0.77			0.33	0.81		0.34		-0.55
(M)	Close Coworkers		0.10	-0.12	0.23	0.37	-0.12	-0.16	0.11			0.13
(N)	Coworkers Support	-0.40	-0.15	-0.14	0.65		0.35		-0.31	0.16	0.34	-0.12
(O)	Coworker Ignore	0.70						0.91				-0.71
(P)	Coworker Conflict	0.36			0.24			-1.45	-0.17	0.60		0.52
(Q)	Resolve Conflict	-0.58	-0.32		0.34				1.00			
(R)	Confident Opinion	0.26	-0.19	-0.47		-0.47		-1.08	0.46	0.46	-0.74	0.36
(S)	Depend Quality	-0.32				0.56			-0.35			
(T)	Comfortable Mistake					-0.31		-0.87	0.40			

Table 6b: Hard vs. Soft Skills Training and Interpersonal Variables

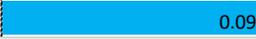
		Hard Skills	Soft Skills
	Outcome Variable	(1)	(2)
(A)	Angry Frustrated Sup		
(B)	Small Unimportant Sup		
(C)	Sup Conflict		
(D)	Sup Resolved Conflict		
(E)	Verbal Abuse Sup		
(F)	Sup Mang Hit		
(G)	Punished Disagree		-0.23
(H)	Speak No Change		-0.12
(I)	Make Complaint		
(J)	Complaint Risky		
(K)	Satisfied Complaint		
(L)	Comfortable Help		
(M)	Close Coworkers		
(N)	Coworkers Support		
(O)	Coworker Ignore		
(P)	Coworker Conflict		
(Q)	Resolve Conflict		
(R)	Confident Opinion		
(S)	Depend Quality		0.09
(T)	Comfortable Mistake		

Table 7a: Individual Training Modules and Payment Variables

		5S Intro	Supervisor Training	SST	OPA Awareness	New Operators Training	Key Knowledge for Waste	Quality Activity	Basic Rights	Workplace Comm.	Financial Literacy	Women's Health
	Outcome Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(A)	Annual Bonus	-0.48	-0.40						-0.08			
(B)	Skill Bonus	-0.16		0.10		-0.14	0.15			-0.11		
(C)	Seniority Bonus	0.26		-0.34					0.09	0.30	-0.18	
(D)	Productivity Bonus		-0.06	0.27		0.26		0.34	0.13	-0.32	0.15	-0.38
(E)	Quality Bonus		0.05						0.06			
(F)	Attendance Bonus		0.23			-0.24	-0.30	-0.37	-0.22	0.37		0.47
(G)	Cash	-0.46		-0.84	0.21	0.45			0.56	0.82	-0.86	
(H)	Food		-0.05	-0.11					-0.05	0.12	-0.08	
(I)	Housing	-0.07	-0.06	0.03					-0.06		0.06	
(J)	Other In-Kind		0.02			-0.10	-0.01	-0.10		0.04	-0.03	0.11
(K)	Check			-0.03	-0.07	-0.03					-0.03	
(L)	Direct Deposit ATM	-0.35		0.82	-0.16	-0.33			-0.51	-0.82	0.83	
(M)	Other Factors Pay	-0.53	-0.52	0.31		-0.43		0.49	-0.44	-0.52		-0.36
(N)	Trust Payment	-0.69	-0.48						-0.46	0.17		
(O)	Connection Work Pay		-0.27	-0.47						0.39		
(P)	Understand Pay	0.88	0.45			-0.58	-0.49	-1.44			-0.86	0.82
(Q)	Hourly-Pay	6.78				-5.62	-4.34	-26.56	-12.16			22.71
(R)	Detailed PaySlip					-0.21						
(S)	Confusing Pay	0.54		0.52	0.37	0.70	0.32		-0.95		0.38	-0.36
(T)	Comfort Pay Question			0.52	0.28			-0.60	-0.32	-0.22		

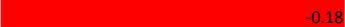
Table 7b: Hard vs. Soft Skills Training and Payment Variables

		Hard Skills	Soft Skills
	Outcome Variable	(1)	(2)
(A)	Annual Bonus	 -0.10	
(B)	Skill Bonus	 -0.02	
(C)	Seniority Bonus		
(D)	Productivity Bonus		
(E)	Quality Bonus	 0.02	
(F)	Attendance Bonus		
(G)	Cash	 0.15	 -0.13
(H)	Food		
(I)	Housing	 -0.01	 0.01
(J)	Other In-Kind		
(K)	Check		
(L)	Direct Deposit ATM	 -0.14	 0.12
(M)	Other Factors Pay		
(N)	Trust Payment		
(O)	Connection Work Pay		
(P)	Understand Pay		
(Q)	Hourly-Pay		
(R)	Detailed PaySlip	 0.08	
(S)	Confusing Pay		
(T)	Comfort Pay Question		

Table 8a: Individual Training Modules and Worker Wellbeing Variables

		5S Intro	Supervisor Training	SST	OPA Awareness	New Operators Training	Key Knowledge for Waste	Quality Activity	Basic Rights	Workplace Comm.	Financial Literacy	Women's Health
	Outcome Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(A)	Proud Work				0.33	-0.55		1.01		0.33		
(B)	Intelligence			-0.87	-0.34	-0.51	-0.62	0.93	0.14	-1.29	-0.30	-0.44
(C)	Depression			-0.72		0.98				0.48		-0.47
(D)	Sexual Harassment	0.46			0.16			-0.66			-0.37	
(E)	Don't Fit In	0.77			-0.53					-0.65		
(F)	Work Injury	0.92		-0.48			-0.62			-0.56		
(G)	Life Satisfied	-0.26				-0.33						0.36
(H)	Job Satisfied											
(I)	Overall Health				0.53	-0.48			-0.38	-0.38		
(J)	Proper Toilet		-0.98		0.29	1.16	0.44	1.92	0.70	-0.47		-2.08
(K)	Excessive Noise	1.01	0.39	-0.64		0.66	-0.78	-1.08	0.72	0.54	-0.86	-0.34
(L)	Provision PPE		-0.91				0.92	3.27		-0.96		-1.74
(M)	Poor Air Quality								-0.23	-0.22		
(N)	Excessive Heat		-0.83	-0.62			0.67					-0.87
(O)	Chemical Odor								0.69			

Table 9b: Hard vs. Soft Skills Training and Worker Wellbeing Variables

		Hard Skills	Soft Skills
	Outcome Variable	(1)	(2)
(A)	Proud Work		
(B)	Intelligence		
(C)	Depression		
(D)	Sexual Harassment		
(E)	Don't Fit In	 -0.18	 0.18
(F)	Work Injury	 -0.13	
(G)	Life Satisfied		
(H)	Job Satisfied		 -0.18
(I)	Overall Health		 -0.22
(J)	Proper Toilet		
(K)	ExcessiveNoise		
(L)	Provision PPE		
(M)	Poor Air Quality		 -0.09
(N)	Excessive Heat		 -0.14
(O)	Chemical Odor		