Creating Better Jobs for Women and Boosting Productivity in Bangladesh's Garment Factories:

An assessment of the Gender Equality and Returns Program

The designations employed in ILO publications, which are in conformity with United Nations practice, and the presentation of material therein do not imply the expression of any opinion whatsoever on the part of the ILO concerning the legal status of any country, area or territory or of its authorities, or concerning the delimitation of its frontiers.

The responsibility for opinions expressed in signed articles, studies and other contributions rests solely with their authors, and publication does not constitute an endorsement by the ILO of the opinions expressed in them.

Reference to names of firms and commercial products and processes does not imply their endorsement by the ILO, and any failure to mention a particular firm, commercial product or process is not a sign of disapproval.

Information on ILO publications and digital products can be found at: www.ilo.org/publns.

Creating Better Jobs for Women and Boosting Productivity in Bangladesh's Garment Factories:

An assessment of the Gender Equality and Returns Program

About Better Work

Better Work—a collaboration between the United Nations' International Labour Organization (ILO) and the International Finance Corporation (IFC), a member of the World Bank Group—is a comprehensive programme bringing together all levels of the garment industry to improve working conditions, respect of workers' labour rights and boost the competitiveness of apparel and footwear businesses.

CONTENTS

vi

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

▶ Acknowledgments

► Executive Summary

In Bangladesh, the garment industry is both a top exporter and a significant employer of women. In 2024, it generated $38.48 billion in export earnings and accounted for more than 80 percent of total exports. Over the past decades, the industry has made considerable gains in women's labor force participation, and women now comprise a majority of the sector's 4.2 million-strong workforce. However, women's representation in management roles remains stubbornly low.

To close this gap, IFC developed the Gender Equality and Returns (GEAR) Program under Better Work, which is a collaboration between IFC and the International Labour Organization (ILO). Conducted in partnership with factories, management, global apparel brands, and garment workers, the GEAR Program aimed to increase gender equality, improve working conditions, and enhance productivity in the Bangladeshi garment sector.

► PROGRAM BACKGROUND

In 2016, IFC partnered with researchers from the University of Oxford to pilot a program under Better Work to train female sewing machine operators for entry-level management positions. The pilot program, known as the Work-Progression and Productivity Toolkit, provided nine days of training over five weeks for women working in 28 ready-made garment factories. Encouraged by the pilot results and lessons learned, IFC and ILO refined the toolkit and in 2019 it was relaunched as the Better Work Gender Equality and Returns (GEAR) Program.

From 2019 to 2022, GEAR was implemented in 50 garment factories that supply five global apparel brands—H&M, Levi Strauss & Co., Marks & Spencer, Ralph Lauren, and VF Corporation. These brands have made public commitments to increase the share of women in leadership roles in their supply chains.

2

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

During the program, GEAR-trained female line operators and factory managers and facilitated greater opportunities for women's career progression, with the aim of increasing the share of female supervisors within participating factories. GEAR facilitated classroom-based training for female workers at these factories, and they were subsequently appointed as trainee supervisors working on production lines under the direction of a line supervisor. Following a probationary period of at least three months, factories evaluated each trainee's performance and decided whether to formally promote them to supervisor roles.

To measure the impact of GEAR, a research team from the University of Oxford and BRAC University in Bangladesh assessed three main outcomes: promotion rates and salaries, working conditions and worker well-being, and productivity. From 2022 to 2023, the assessment compared GEAR-trained supervisors to other supervisors with similar levels of experience working in the same factories, using a combination of quantitative surveys, qualitative interviews, focus groups, and administrative data from 27 of the 50 participating factories.

▶ **The assessment found the GEAR Program achieved its three main goals of building:**

Greater gender equality

Improved working conditions

Enhanced productivity

All 50 factories participating in the GEAR Program promoted women to supervisory roles, including five factories that had no female supervisors at the program's onset. More than two-thirds of women who completed the training program were promoted afterwards, and their salaries increased by roughly 40 percent.

After their initial promotions, some women progressed from supervisor to line chief. In a number of factories, women who did not participate in the training program were also promoted to supervisory roles, suggesting a broader shift in attitudes among factory management and workers. From 2016 to 2022, the average share of female supervisors at participating factories increased from 10 percent to 18 percent.

Sewing operators reported that their GEAR-trained female supervisors had a more supportive, positive management style compared to supervisors who did not receive the training. According to these operators, GEAR-trained supervisors took positive actions—for example, they praised workers' motivation, clearly demonstrated tasks, and supported skills development—much more frequently than other supervisors. This suggests that working conditions for sewing operators improved as a result of the training.

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

3

Production lines managed by GEAR-trained supervisors were 2.5 percentage points more efficient than those managed by both male and female supervisors who did not receive the training, and 4.3 percentage points more efficient than lines managed exclusively by male supervisors. This gain in efficiency translates into potential cost savings between $4,800 to $9,100 per line each year, or $96,000 to $182,000 annually for an average-sized factory with 20 production lines.

In July 2022, GEAR was integrated into Better Work's core training offerings in Bangladesh. Using learnings from the GEAR Program, Better Work Bangladesh has gone on to develop a more advanced program for women supervisors seeking to become line chiefs—the next step up the managerial ladder. In addition, the positive impacts of the program resulted in GEAR training being scaled beyond Bangladesh to the garment sector in Viet Nam in 2019, followed by Sri Lanka in 2022, Madagascar in 2023, and Cambodia in 2025. GEAR was also piloted in the agri-business sector in South Africa in 2023.

▶ Introduction

The garment industry in Bangladesh is a crucial pillar of the economy and a key source of employment. While woman comprise about 54 percent of the sector's 4.2 million workers, they are significantly under-represented in management roles (Rahman et al. 2023). To close gaps in gender equality, improve working conditions, and enhance productivity, Better Work—a collaboration between IFC and the International Labour Organization (ILO)—partnered with factories, management, global apparel brands, garment workers, and their communities in the Gender Equality and Returns (GEAR) Program.

In 2024, Bangladesh's garment industry generated $38.48 billion in export earnings and accounted for 80 percent of total exports (BGMEA 2024). While the sector's female labor force participation rates have risen significantly in recent decades, women work almost exclusively in lower levels of production. They make up three quarters of helpers and sewing machine line operators, also known as sewing operators or line operators, but are nearly absent from supervisory and higher-level management roles (Menzel & Woodruff 2021). Several factors drive this gender gap, including limited access to training for women and social norms that perceive men as more suitable for supervisory roles (Macchiavello et al. 2020).

"Several training programs were implemented to promote women supervisors in factories—one of the most effective is the GEAR Program. Of our ten participants, five became supervisors. Apart from the technical skills training, the soft skills training was good for leadership and motivation. We want other women to be encouraged by seeing the GEAR supervisors. Since the program was introduced, some women have told us that they want to work as female supervisors and receive training. We want to train another batch."

Factory supervisor[1]

---

1   To encourage frank feedback, interviewees remained anonymous.

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

5

▶ Evolution of the GEAR Program

The Gender Equality and Returns Program offers training and support in technical and soft skills to enable women to move into supervisory positions, cultivate leadership capabilities to effectively manage staff, and enhance operational productivity. The GEAR Program builds on the Work-Progression & Productivity Toolkit (WPT), a successful pilot program designed and implemented by IFC in collaboration with ILO's Better Work team in Bangladesh from 2016 to 2018. The pilot was implemented in 28 factories and trained 144 female sewing operators, 160 managers, and 341 lower-level managers.

"The life of a female garment worker is not easy. A supervisor needs to be psychologically strong to manage a line of 30 people. The GEAR training develops stress management skills and psychological stability effectively."

Manager

The pilot included an ex-ante impact assessment designed to rigorously examine the effectiveness of the training program. The assessment measured trainees' promotion rates and the pilot's impact on productivity and working conditions. It showed that 60 percent of trainees received an offer of promotion within weeks of completing the training. A 5 percent increase in efficiency, from 46 to 51 percent, was observed on lines led by WPT-trained supervisors (IFC 2018). The impact study also found that trainees exhibited higher competence in the specific skills and abilities required by line supervisors compared to supervisors who did not receive the training. Trainees proved to be better at remaining calm and were more effective in helping and motivating sewing operators.

Encouraged by these results, the Better Work Bangladesh team further refined the training and in 2019, it was relaunched as the GEAR female supervisor training program and added to Better Work's broader offerings. By 2022 GEAR had been implemented in 50 factories in Bangladesh in partnership with five global apparel brands—H&M, Levi Strauss & Co., Marks & Spencer, Ralph Lauren, and VF Corporation (See Figure 1). These brands have publicly committed to increase the share of women in leadership roles in their supply chains. For example, Ralph Lauren announced a goal to achieve a 25 percent increase of women in factory leadership positions, while seeking to create a path to parity by 2025 (Ralph Lauren 2022).

FIGURE 1: KEY MILESTONES OF THE GEAR PROGRAM

VF CORPORATION   *6 Supplier Factories*

RALPH LAUREN   *12 Supplier Factories*

**March 2020:
COVID-19 Response**

*Training Adapted to
Online Delivery*

| Nov 2016 | April 2019 | 2022 |

WPT Pilot
28 Factories

Scale-up

**Better Work Bangladesh
Line Chief Training**

*Viet Nam, Madagascar,
Sri Lanka, South Africa &
Cambodia*

M&S   *12 Supplier Factories*

H&M   *13 Supplier Factories*

Levi's   *9 Supplier Factories*

Source: IFC/Better Work

▶ Eligibility Criteria, Scope, and Trainee Selection

Sewing departments typically provide around two-thirds of employment in garment factories, and around three-quarters of production workers in these departments are female. GEAR was initially designed for garment manufacturing factories commonly found in Bangladesh, with an average of roughly 4,000 workers and 40 sewing lines, as well as existing or upcoming opportunities to hire or promote new supervisors. To demonstrate their commitment, apparel brands and factories paid a nominal participation fee. Factories continued to pay trainees' wages during the program and contributed substantial management time to meetings and other program activities.

GEAR provided factories with guidelines to identify at least 24 potential trainees. It was recommended that candidates have a minimum of eight years of formal schooling and at least two years of experience as a sewing machine operator. Most participants were operators or senior operators (Grade 4 or Grade 3), and they had to have the ambition to become supervisors and support from their families, among other criteria.[2] To further determine candidates' suitability for the program, GEAR provided diagnostic testing in literacy, numeracy, knowledge of garment production, and analytical and problem-solving skills. Candidates with the highest aggregate scores in the diagnostic tests were selected for the program.

In total, GEAR training was offered to 55 batches of workers in the participating factories, with 490 women starting the training program and 441 successfully completing it. Selected female operators were trained in technical and leadership skills, while also gaining practical on-the-job experience as trainee supervisors. In parallel, factory management was equipped with human resource tools and techniques to help fairly identify, train, promote, and retain female talent in leadership roles. Together, these two activities created an enabling environment for women to progress into leadership roles.

---

2   Previous case studies of two participating factories found that the domestic and childcare roles, maternity periods, and gendered constraints reinforced by workplace and household relations could shape and, in several cases, abruptly halt the career trajectories of female supervisors (Afros 2023).

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

7

▶ Engagement with Factory Management

As noted, while GEAR focused on training female sewing operators for supervisor roles, management played a key role in creating an enabling environment for the career progression of women workers. Senior and mid-level factory managers, as well as those on the factory floor, were engaged early in the process to introduce them to the GEAR Program, and to provide them with information on the benefits and challenges of increasing promotion rates for women. This included a two-hour gender-sensitization session with supervisors and managers of lines where trainees would get on-the-job experience, as well as information on the role of mentors. Managers then introduced the trainees to workers on their lines. As shown in Figure 2, thorough on-boarding consolidated buy-in from senior management, workers, co-supervisors, and floor-level managers.

FIGURE 2: ONBOARDING AND ENGAGING FACTORY MANAGEMENT

Senior-level Commitment	GEAR Factory Advisory Committee	Committee Briefing	Candidate Selection	Training
Senior managers are briefed on GEAR and give their buy-in.	Senior management nominates a four member committee to work with the GEAR team.	A day-long workshop equips GEAR committee members for their critical role.	Committee and floor managers nominate potential trainees, who undertake a two-hour evaluation.	GEAR team shares human resource tools to identify, evaluate, and retain female talent with senior, mid-level, and floor managers.

Source: IFC/Better Work

▶ Training Female Operators for Supervisory Roles

After securing management buy-in, GEAR combined classroom and on-the-job training for selected female sewing machine operators. As shown in Figure 3, classroom-based training spanned ten days, with four days of soft skills training and six days of technical training. Soft skills training built leadership and communication skills, with the aim of increasing the confidence of trainees and their ability to effectively solve problems, incentivize workers with positive reinforcement, and manage with integrity.

Technical skills training equipped participants with engineering tools and techniques to increase productivity by resolving bottlenecks and balancing lines more effectively through better use of operator capacity and available resources, including workers, machines, and materials. Trainees also learned about their role in global value chains, backward and forward linkage processes, production

reporting and monitoring methodologies, garment measurement, fit and quality parameters, pre- and post-cutting activities, machine maintenance, and housekeeping.

FIGURE 3: OVERVIEW OF GEAR'S CLASSROOM AND ON-THE-JOB TRAINING

Soft Skills Training

4 Days

DAYS 1 - 2

- Personal well-being & emotional intelligence
- Stress management and self-care
- Building confidence and self-awareness
- Managing inner critic and emotions
- Practicing gratitude and reflection

DAYS 9 - 10

- Roles and responsibilities of supervisors
- Leadership styles and effective communication
- Addressing performance issues with integrity
- Team coaching and decision-making
- Simplifying and improving work processes

Technical Skills Training

6 Days

DAYS 3 - 7

- Sample development and production planning
- Monitoring production progress, input/output tracking
- Understanding basic fabrication techniques
- Organizing workstations, managing tools, reducing waste
- Coaching team members and assigning responsibilities
- Identifying bottlenecks and improving efficiency
- Introduction to machines, tools, and maintenance
- Factory layout planning and setup
- Quality control, defect identification, and finishing
- Simplifying and improving work processes

Source: IFC/Better Work

GEAR training took place for two days each week for five consecutive weeks. On the remaining days, program participants worked as trainee supervisors, shadowing supervisors and learning on the job. The gap between training sessions provided time for the participants to absorb the material. After completing classroom sessions, trainees continued to shadow a supervisor on a production line for another six to eight weeks.

As shown in Figure 4, GEAR also offered joint team-building sessions for GEAR trainees and managers that aimed to create an enabling environment for women. These sessions gave trainees opportunities to apply their new management, leadership, and technical skills, increase their confidence, and build rapport with their floor managers and other workers on the production lines.

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

9

FIGURE 4: GEAR TEAM BUILDING

	Internal Buy-in	GEAR Factory Advisory Committee shares information with managers and wider workforce, including sewing operators and helpers.
	Trainees & Supervisors	Selected trainees are paired with line supervisors. Trainees and floor-level managers jointly examine the benefits of mentorship and including women in leadership roles.
	Team Building	Activities build harmony and team work among trainees, supervisors, and sewing operators.

Source: IFC/Better Work

▶ GEAR Training During the COVID-19 Pandemic

Many activities under the GEAR Program coincided with the COVID-19 pandemic. Initially, all in-person training sessions were put on hold as factories managed lockdowns, closures, and limited operations. When factories resumed operations under strict safety conditions, GEAR training was adapted for online delivery. However, low literacy levels, limited experience with technology, and logistical issues made the shift to online learning challenging for some trainees. The team continuously adapted approaches and content to improve effectiveness until face-to-face and hybrid interactions could safely resume.

"A lot of time and effort was spent on reviewing, updating, and adapting the original training materials for virtual delivery with smaller class sizes. New monitoring tools were developed and integrated into the lessons to ensure high-quality training despite remote delivery."

Quazi Shahrul Islam,
GEAR Technical Trainer

▶ Methodology and Data Analysis

An assessment was conducted from 2022 to 2023 to measure the impact of the GEAR Program, with a focus on three outcomes: promotion rates and salaries; working conditions and worker well-being; and overall factory productivity. This was carried out by a research team from the University of Oxford in the United Kingdom and BRAC University in Bangladesh, using a combination of quantitative surveys, qualitative interviews, focus groups, and administrative data. Please note that this report draws on the larger academic paper Pathway to Productivity and Leadership: Evolution of Female Garment Workers in Bangladesh (Woodruff, Khan, and Rabbani 2025).

The research team developed two survey instruments. The first was designed for GEAR-trained supervisors, also referred to as GEAR trainees, as well as comparison supervisors who did not participate in GEAR training. The second survey was designed for sewing operators who reported to newly-trained GEAR supervisors and comparison supervisors. Survey data was collected between November 19, 2022 and January 17, 2023. The research team also collected and analyzed administrative records of GEAR-trained supervisors and comparison supervisors to determine line-level efficiency and absenteeism. Production data was collected between May 24, 2022 and January 7, 2023, while wage data was collected between August 22 to December 17, 2022.

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

11

All the GEAR-trained supervisors were women compared to about 24 percent of the comparison supervisors. Key statistics related to the GEAR-trained supervisors and sewing operators selected for this assessment are detailed in Appendix A.

Selection of factories: The research team collected data from 27 of the 50 factories that implemented GEAR training between 2019 and 2022.[3] The factories selected for analysis were among those producing woven or light knit products and had at least two GEAR trainees still working as supervisors in 2022 in the greater Dhaka and Chittagong areas.

'**Selection of GEAR-trained supervisors:** The research team selected up to five GEAR trainees working as supervisors in each of the 27 factories.[4] To do so, they reviewed the current work status of trainees in each factory, whether they were working as supervisors, working in the factory as operators or in another position, or whether they had left the factory. Selected GEAR trainees were interviewed using the first survey.

Selection of comparison supervisors: The cohort of selected trainees was shared with the respective factories, along with a request to provide the names, production lines, and months of supervisory experience for eight other supervisors with experience levels as close as possible to that of the GEAR-trained supervisors. The research team then selected five of the eight supervisors who aligned most closely with that of the GEAR-trained supervisors. These comparison supervisors were interviewed using the first survey instrument.

Selection of sewing operators: The research team randomly selected a subset of sewing machine operators who worked under the supervision of each GEAR-trained supervisor and each comparison supervisor.[5] Using the second survey instrument, four operators working under each GEAR-trained supervisor and each comparison supervisor were asked their opinions about the performance of their supervisors and working conditions on their lines.

Finally, open-ended interviews were conducted with senior managers, while trainees, operators, and other supervisors participated in focus group discussions. In addition, open-ended interviews were conducted at a DBL Group factory that participated in the original WPT program.[6]

---

3   See Figure E1 in Appendix E for more information.

4   Where there were more than five trainees working as supervisors, five were randomly selected, and where there were fewer than five trainee supervisors, all the trainees were selected.

5   The operators were selected randomly, using a random number generator to select the position (counting from the top of the line). Two female and two male operators were set to be interviewed and moved down the line from the randomly selected position to achieve gender balance.

6   A case study of the DBL Group's experience is included in the results section of this report.

▶ Results

▶ Greater Gender Equality: Career progression

As noted earlier, 490 women started GEAR training and 441 successfully completed the program. **A total of 303 women operators trained by the GEAR Program were promoted to line supervisor positions, and the proportion of female supervisors increased in 45 of the 50 participating factories.**

Prior to implementing the GEAR Program, just under one in ten participating factories (9.4%) had no female supervisors, but after the program all the factories had female supervisors. On average, the proportion of female supervisors across participating factories rose from 10 percent to an average of 18 percent. In addition, the share of factories with 25 percent or more female supervisors more than tripled from 7.5 percent to 26.4 percent with the GEAR Program. Figure 5 shows this change in the number of female supervisors, with the blue bars representing the share of factories with female supervisors before the GEAR training, and the orange bars the distribution after the GEAR Program.

In addition to working as supervisors, some GEAR trainees migrated to other leadership positions, while all trainees reported that GEAR training improved their confidence and increased their ambition.

"When I joined as a skills development trainer, I wasn't sure how the line operators would accept my instructions and whether they would even accept me as a trainer... GEAR training taught me how to talk to my workers and deal with them."

GEAR-trained supervisor

FIGURE 5: CHANGES IN PROPORTION OF FEMALE SUPERVISORS BEFORE AND AFTER GEAR
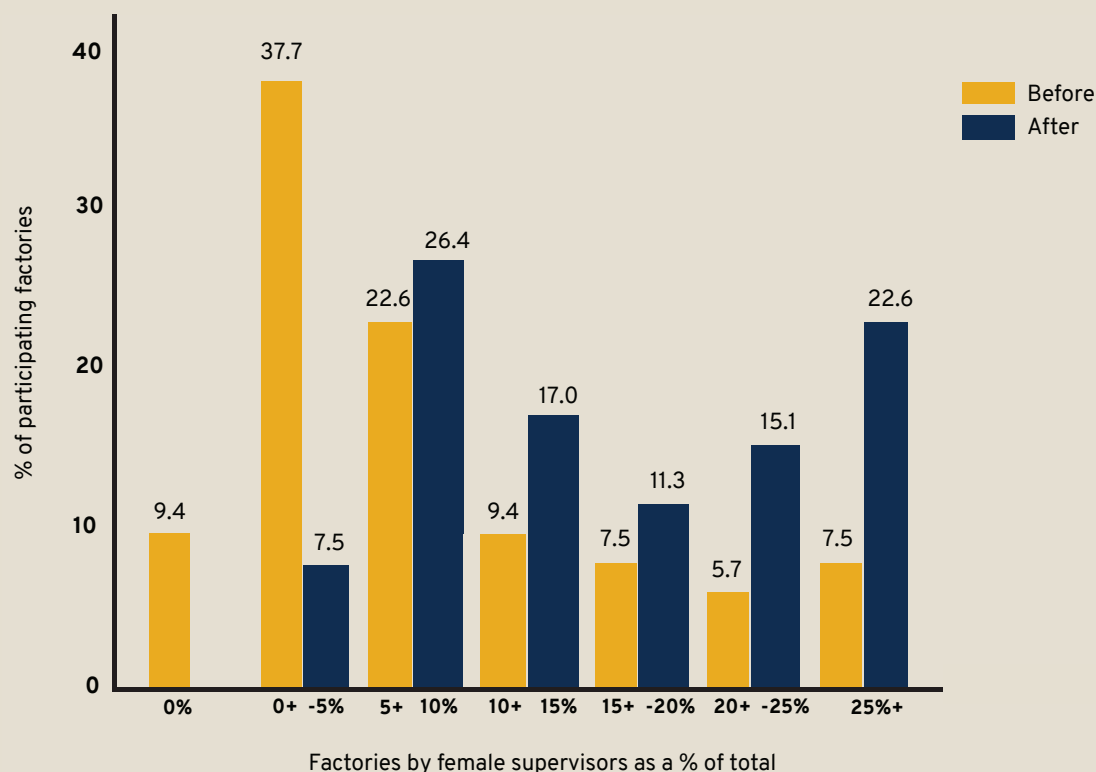
Source: Data provided by participating factories.

▶ Improved Working Conditions: Higher salaries

GEAR trainees who were promoted to higher-level positions increased their earnings by about 40 percent. This aligns with the GEAR Program's goal to expand career opportunities and increase earnings for women in the ready-made garment sector.

The change in earnings was measured against three comparison groups. The first and best comparison group consisted of eligible sewing operators from the 27 selected factories who were not chosen to participate in GEAR training. Administrative data from 13 of the 27 factories showed that the average GEAR trainee working as a supervisor earned $186 (BDT 19,572) in September 2022 compared to $134 (BDT 14,022) for eligible workers who did not participate in training, a difference of 41 percent.[7] The second comparison comes from GEAR trainees themselves. Data showed their earnings increased by an average of 40 percent from the months prior to training compared to the month the assessment started.

"GEAR training gave me the courage to speak. We are told from childhood that we can't speak up...but now, after GEAR training, we can talk about our problems. We women are not as small as we thought we were. We can get ahead if we want."

GEAR trainee

---

7   Data included information on total earnings, overtime, and bonuses for all operators and supervisors.

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

15

Finally, all respondents—trainees, comparison supervisors, and randomly-selected operators working under their supervision—were surveyed about their most recent monthly earnings, including overtime and bonuses. This had the advantage of allowing control over worker characteristics. This revealed that the earnings of trainees were $48 (BDT 5,000) greater than those of comparable sewing machine operators, an increase of 43 percent.

▶ Improved Working Conditions: Better worker well-being

Trainees fostered better working conditions and well-being on their lines relative to comparison supervisors, according to the assessment. Working conditions refer to the environment, circumstances, and arrangements that impact the physical, psychological, and social well-being of workers.

To develop these findings, the research team surveyed sewing machine operators who worked under both GEAR trainees and comparison supervisors. The operators were asked about their supervisor's communication skills, the support they gave to workers to expand their knowledge and skills, and how they fostered workplace health, safety, and well-being. Operators were asked to compare their supervisor, identified by name, with a 'typical supervisor in the factory.'[8] The team also examined whether these responses could be compared to outcomes from Better Work training programs in other countries (Babbitt 2016).

An aggregated measure of working conditions was constructed by combining survey responses from operators. As shown in Figure 6, the assessment found that GEAR-trained supervisors had

FIGURE 6: WORKING CONDITIONS & SUPERVISORS' BEHAVIOR AS REPORTED BY LINE OPERATORS

Line Operators of Comparison Supervisors *(N=510)*
Line Operators of GEAR trainees *(N=453)*

% of Line Operators who said their supervisor took this action more often than a 'typical' supervisor

Source: GEAR assessment surveys.
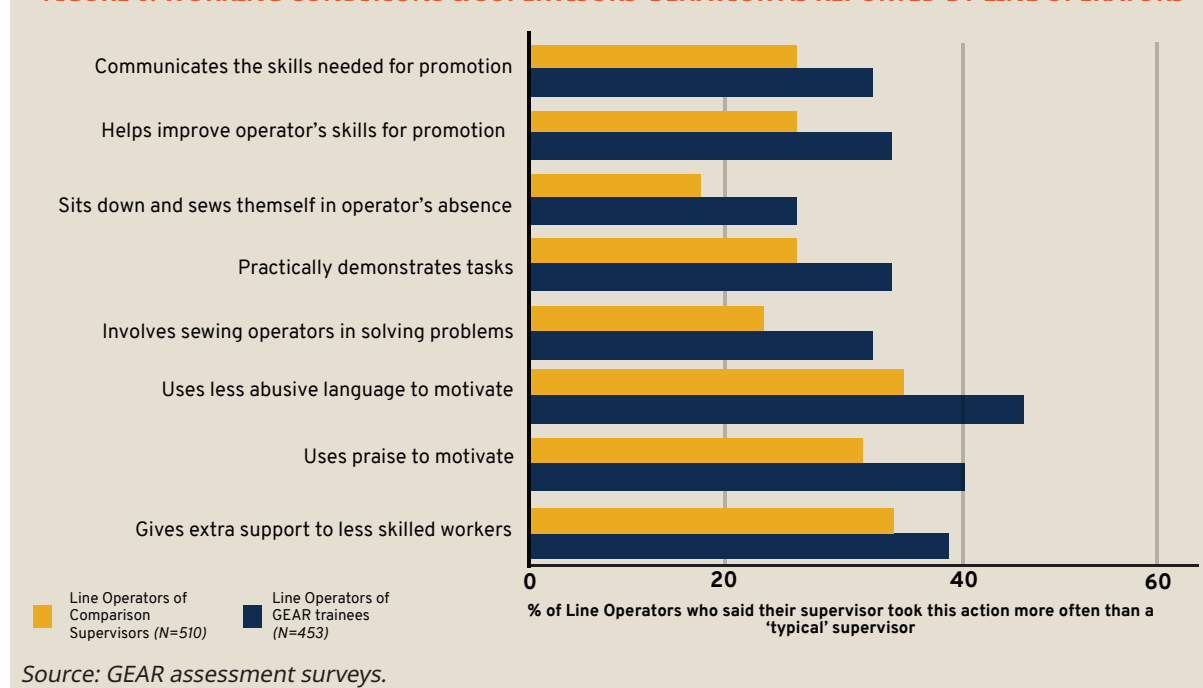
8   Operators were asked whether their supervisor took these actions *much more, somewhat more, equally, somewhat less*, or *much less* often than a 'typical supervisor' in the factory.

more positive behavior relative to the comparison supervisors, and took negative actions, such as using abusive language, less often. The complete list of questions is provided in Appendix F.

The working style of GEAR-trained supervisors was significantly more supportive, and this finding remained unchanged when regression analysis was used, adding controls for months of supervisory experience and demographic factors such age, level of education, and marital status.

Operators working under GEAR-trained supervisors reported working conditions were, on average, 0.38 standard deviations better than those under comparison supervisors (see table A4 in Appendix A for more details). Results were significant at the one percent level, indicating strong statistical confidence in these observed differences. This translates roughly to a 7 percent increase from the benchmark value for working conditions as reported for all supervisors.[9] See Box 1 for insights from GEAR participants, line operators, and managers in participating factories.

▶ Improved Working Conditions: Positive management style

Positive management styles drive better working conditions and well-being. Line operators were asked nine questions about their supervisors' management styles, including how confident and calm they appeared, and how likely they were to motivate operators and to constructively correct mistakes.[10]

▶ BOX 1. VOICES FROM THE FACTORY FLOOR

Focus groups and interviews enabled line operators, factory managers, and GEAR trainees to share their experiences and opinions of the GEAR Program and its broader impact. For example, line operator, Rokeya Begum, said she appreciates the management skills and communication style used by her GEAR-trained supervisor.

"I feel good working with her, and she explains the work well. She always tries to meet the target, and that's why she gives directions repeatedly. She says, 'You have to do this work, and after completing this you can leave' or 'If you cause a delay, another worker will not be able to meet the target'. If there is a male supervisor, he will say the same thing in an aggressive manner. A female supervisor tells us calmly. That is the difference."

GEAR-trained supervisor, Bilkis Khatu, said he believes participation in the program made her more willing to listen to female workers' challenges and provide flexible solutions to accommodate their needs.

"Sometimes women tell me they are not feeling well or they have other problems. I tell them, if the problem is a big one, you can take leave. If they need to leave by five o'clock or if they ask for more time during lunch, I let them. There are times when just a few good words will cheer them up. I try to motivate them in different ways."

---

9   Benchmark mean for trainee supervisors is 30.4 for the work or condition scores.

10   The exact wording can be found in Table F2 in Appendix F.

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

17

▶ BOX 1. VOICES FROM THE FACTORY FLOOR (continued)

Soft-skills training was particularly useful for GEAR-trained supervisor, Tasnia Binte Zakaria.

"When the GEAR soft-skills trainer first started speaking, I realized I had quite a lot of fear in my heart. We did many exercises to eventually understand that this fear is not really fear. She then shared something about the tigers in our hearts and if we awakened those tigers, we girls would never see ourselves as small again. We would not be dependent on men. She gave us instructions to help us become a successful working person. Using what I was taught, I earned my success today."

GEAR-trained supervisor, Yeasmin Rahim, said she tries to motivate line operators who are balancing both household and work responsibilities.

"Women are always thinking about what they should cook once they get home. All the women have other things on their minds while they are working. When women come to work, they feel better, and their quality of work is better, if you talk to them nicely."

Factory managers agreed that GEAR-trained supervisors take a more supportive approach.

"A worker will get more support from a female supervisor. This is what we see in most cases. We get less complaints about female GEAR supervisors not granting leave. We get a lot more complaints from workers that their male supervisors do not grant them leave."
Compliance Manager, Khelafat

"Before, there were operators who would just sit with their machines, and they were not very courageous to speak up. I would say that changed because of the training's impact on their soft skills."
GEAR committee member & Human Resources Manager, Rahim

"I would say female supervisors show more sympathy and support and are more helpful."
Compliance Manager, Hasanul Amin

*Names have been changed to protect the anonymity of the interviewees.

Line operators working for both trainee and comparison supervisors were asked to compare them to a 'typical supervisor' in their factory, using statements such as, *"Compared to the typical supervisor in my factory, the line supervisor I work with most is better at remaining calm in stressful situations."* Respondents could 'strongly agree', 'agree', 'disagree' or 'strongly disagree.' There were no neutral responses, but workers had the option not to answer a question. However, very few chose to do so.

"Whenever I tell her that I am stuck on a job, she helps. Or she brings me thread if my machine is somehow problematic. She reaches out to me before I can reach out to her. That helps us a lot. She is very responsible, and we operators love that."

Line operator

As shown in Figure 7, analysis suggested that line-operators responded more positively to the management style of GEAR-trained supervisors relative to comparison supervisors. More details can be found in Figure A5 in Appendix A.

FIGURE 7: MANAGEMENT PRACTICES:
LINE OPERATOR OPINIONS OF GEAR TRAINEES & COMPARISON SUPERVISORS

Source: GEAR assessment surveys.
Note: The figure shows the differences in the raw index for operators working for the two groups of supervisors, GEAR trainees and comparison supervisors.
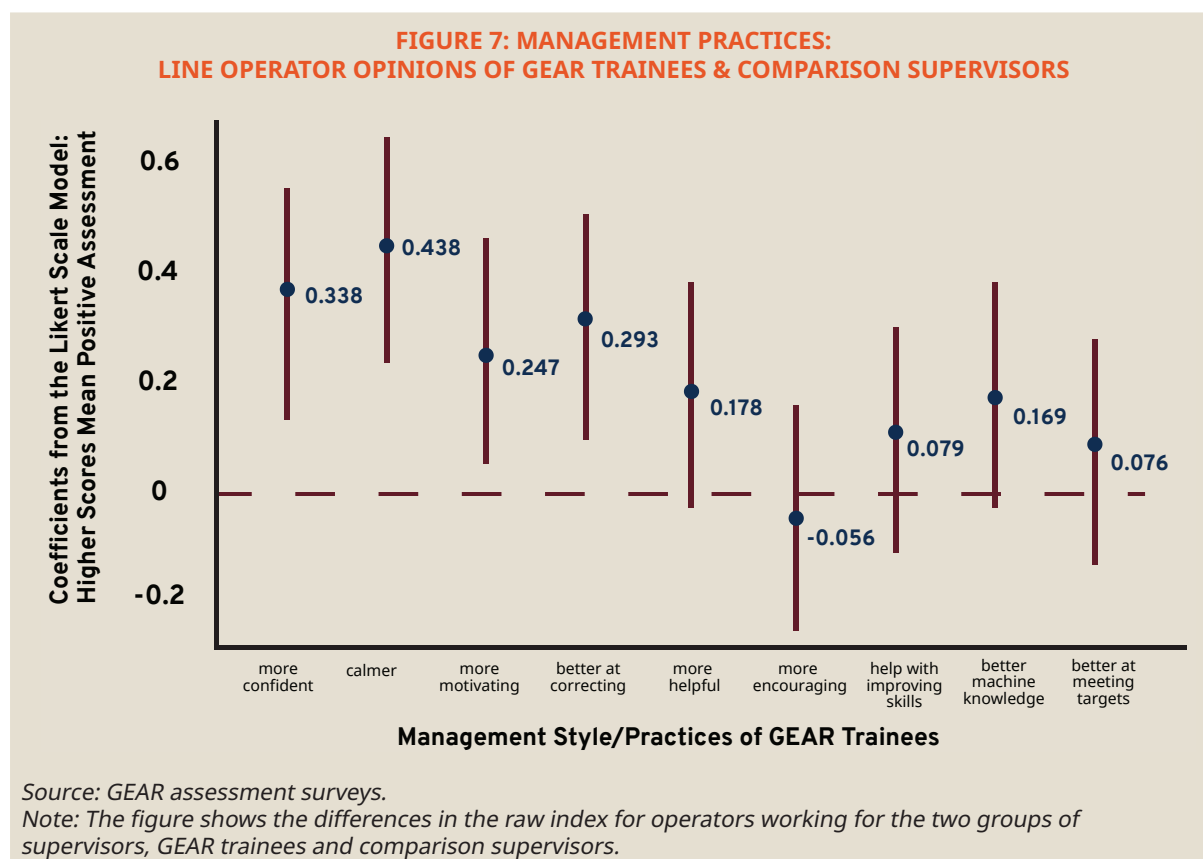
Figure 7 demonstrates that GEAR trainees scored highest in appearing confident, maintaining calm, motivating line operators, and correcting mistakes. Their lowest score related to encouraging line operators to assume more leadership roles, but the result was not statistically significant.

Regression analysis was used to test for an aggregate measure of management style. A 'management style index' was generated by summing up the line operators' responses to the questions in a manner described in the appendix. The regression in Table B4 in Appendix B shows how the management practices of GEAR-trained supervisors differed from the comparison supervisor.

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

19

The regression reported in Table A5 in Appendix A showed that the management practices of GEAR supervisors were, on average, slightly better than those of comparison supervisors. This accounted for characteristics such as age, education level, marital status, and supervisory experience. It found that GEAR-trained supervisors had much better management practices when they began working as supervisors, an effect which is both large and statistically significant. However, over time the comparison supervisors caught up. After a little less than three years, there was no longer any difference between the two groups of supervisors. This pattern suggests that the training allowed the GEAR supervisors to get off to a better start.

The research team also analyzed differences in self-efficacy and goal-setting skills between trainees and comparison supervisors. These self-reported skills were captured in a quantitative survey.[11] The survey responses were used to construct two versions of an index, both containing self-efficacy and goal-setting elements. Regressions showed no significant differences between trainees and comparison supervisors in these areas.

▶ Improved Productivity: Greater efficiency and cost savings

Production lines managed by GEAR-trained supervisors were up to 4.3 percent more efficient than those of comparison supervisors. Administrative data, including line-level production data, was collected from 20 of the 27 factories. This was used to compare the productivity of lines managed by GEAR-trained supervisors relative to lines managed by comparison supervisors.

In the ready-made garment sector, productivity is defined as 'efficiency' and calculated as sewing output minutes divided by the available minutes of labor.[12] Efficiency data was recorded for each line on each day. As with the other results, patterns in raw data were analyzed before using regression analysis. Figure 8 shows the average efficiency on lines managed by GEAR-trained supervisors and those managed by comparison supervisors. All supervisors became more proficient with experience, and the raw data was broken down into six-month intervals.

During their first six months of supervisory work, the GEAR trainees were outperformed by comparison supervisors, but after that the GEAR trainees caught up. For the next 1.5 years, the GEAR-trained supervisors and comparison supervisors operated with similar efficiency. However, after two years the GEAR-trained supervisors notably outperformed more experienced comparison supervisors.

---

11 Survey questions are included in Table F3 in Appendix F.
12 Appendix C provides more detail

FIGURE 8: LINE-LEVEL EFFICIENCY BY MONTHS OF EXPERIENCE AS SUPERVISOR

Source: Productivity data analysis
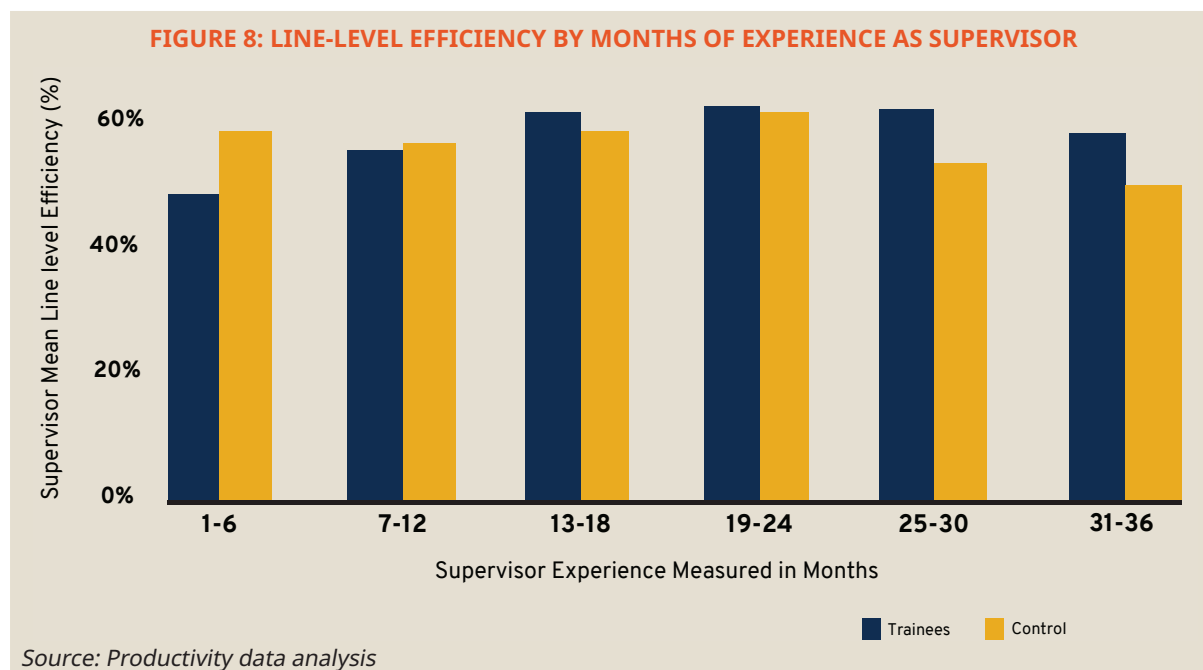
The raw data raised the question of whether the results might be affected by other factors, for example the complexity of the garments being produced on the line. To account for this, regression analysis was subsequently conducted, as it allowed control over other factors and revealed whether differences between GEAR and comparison supervisors were statistically significant or not.

Analysis found that lines managed by the GEAR trainees were 2.5 percentage points more efficient, increasing from 57 percent to 59.5 percent, although the effect is not statistically significant. Further analysis showed that lines managed by female comparison supervisors were significantly more efficient than those managed by male comparison supervisors. When compared with lines managed by male comparison supervisors, lines managed by the female trainees were 4.3 percentage points more efficient, an increase from 57 percent to 61.3 percent, a difference that is significant at the 0.05 level.[13] See Table C1 in Appendix C for more details.

Regression analysis was used to account for different levels of experience, and it reproduced the pattern shown in Figure 8—that efficiency increased with experience at a faster rate for GEAR-trained supervisors than for comparison supervisors.[14] The regression also found that the difference in the experience gradients is statistically significant, showing that the productivity increase of GEAR-trained supervisors relative to comparison supervisors was systematic and of consequential importance.

Efficiency gains directly impact labor costs and could deliver potential savings of up to $182,000 per year for a typical factory. In this sample of factories, a production line had an average of 50 sewing line operators, each paid an average monthly salary of $133 (BDT 14,000). The total monthly wage for the production line was $6,667 (BDT 700,000). Accounting for overtime hours and using the 2.5 percentage point increase in productive efficiency, the savings on each line were close to

---

13   Eleven of the 20 factories represented in the regressions in Table 6 have at least one female comparison supervisor. The results are very similar, though with larger standard errors, when the sample is limited to these 11 factories.

14   See column 3 of Table C1 in Appendix C.

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

21

$400 (BDT 42,000) per month. When using a 4.3 percentage point increase in efficiency, monthly savings on each line amount to around $760 (BDT 80,000), or $9,100 per line, per year.[15]

Applied to a typical factory with 20 production lines, these efficiency increases translate into potential savings of $96,000 to $182,000 per year. These results align with findings from a leading garment manufacturer in Bangladesh that trained and promoted women to supervisory positions, as shown in Box 2.

▶ BOX 2. TRAINING FEMALE SUPERVISORS HELPS DBL GROUP BOOST EFFICIENCY & LOWER COSTS

The DBL group, one of the largest manufacturing groups in Bangladesh's ready-made garment sector, is a leader in promoting women to supervisory positions. It found that female supervisors at its factories were almost 3 percentage points more efficient than male supervisors, translating into a business case of more than $1.2 million per year.

DBL encouraged the promotion of female workers to supervisory roles through a series of training programs, including a program funded by the German development agency GIZ in 2009, a Walmart Foundation funded program from 2012 to 2015, IFC's Work-Progression & Productivity Toolkit pilot from 2016 to 2018, and GEAR from 2019 to 2022. It also made public commitments to increase the proportion of female supervisors in its factories.

In parallel, DBL developed its own in-house training program for female supervisors. A study conducted by DBL estimated the impact of this training on efficiency, productivity, and added value to gross income. It found women were 2.98 percent more efficient than male supervisors on the same line, a result similar to GEAR's findings of a 4.3 percent increase in efficiency. This translated to an estimated $1.2 million worth of additional revenue for the DBL Group per year, as shown below.

150 pieces produced per sewing line per hour x 10 hours = 1500 pieces per day
1500 pieces x 3% = 45 extra pieces per day per female supervisor

45 pieces x 36 female supervisors x 26 days x 12 months = 505,400 extra pieces per year
505,400 pieces x $2.5 = $1.26 million per year

Source: DBL Group

▶ Absenteeism

Attempts to measure the effect of GEAR training on worker absenteeism were unsuccessful, mostly because factories replace absent workers with employees from other lines, but this is not recorded in production reports. Whether due to issues with measuring absenteeism or for other reasons, the analysis showed that the trainees and comparison supervisors had very similar absenteeism rates. See Appendix C for more details.

---

15 7.8 percent of the average efficiency of 57 percent, as shown in column 2 Table C1.

▶ Scaling Impact

This report shows that the GEAR Program succeeded in upskilling women workers for higher-level jobs, narrowed gender gaps, and boosted operational efficiency among participating factories in the ready-made garment industry in Bangladesh.

In July 2022, GEAR's training program was integrated into Better Work's core training offerings in Bangladesh. Better Work Bangladesh has since leveraged the results and lessons from GEAR to develop a program for women supervisors seeking to become line chiefs at garment factories—the next step up the managerial ladder.

FIGURE 9: SCALING THE GENDER EQUALITY AND RETURNS PROGRAM

BANGLADESH	VIET NAM	SRI LANKA	MADAGASCAR	SOUTH AFRICA (AGRIBUSINESS)	CAMBODIA
Launched 2016	Launched 2019	Launched 2022	Launched 2023	Launched 2023	Launched 2025
800+ graduates	148 graduates	108 graduates	25 graduates	30 graduates	40 graduates
100+ factories	34 factories	10 factories	5 factories	6 farms (1 client)	12 factories
Better Work Bangladesh develops line chief training for women supervisors	Training-of-trainers module developed for scale-up and sustainability	New module for supervisors to be promoted to managers	Modules on leadership and soft skills expanded to target junior and middle management	Tailored to industry and cultural context	Modules on line-leader technical skills and soft skills, women factory workers trained to become leaders

Source: IFC/Better Work

The GEAR Program has also expanded beyond Bangladesh to include over 150 apparel factories in key emerging markets. It was adapted and implemented in the ready-made garment sector in Viet Nam in 2019 and in Sri Lanka in 2022 and was piloted in Madagascar in 2023 and Cambodia in 2025. In addition, while GEAR was designed specifically for the ready-made garment sector, IFC has now adapted the training for the agriculture sector, and pilots were successfully conducted on six large blueberry farms in South Africa in 2022 and2023. The results are detailed in Figure 9.

IFC encourages its private sector partners and all stakeholders to build on the results of the GEAR Program and seek out programs and opportunities to upskill women for more senior leadership positions. As this report shows, not only can this drive gains in efficiency, productivity, worker well-being, and earnings, it also creates opportunities for all employees to reach their full potential and contribute to economic growth.

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

25

▶ References

Afros, A. 2023. "Workplace perspectives on empowerment and the Gender Equality and Returns (GEAR) program in Bangladesh." *Better Work Working Paper* No. 15-019. https://betterwork.org/reports-and-publications/discussion-paper-49-mother-wife-and-ambitious-supervisor/

Babbitt, L. 2016. "Training for supervisors: discussion paper on the impacts." *Better Work Working Paper* No. 15-019. https://betterwork.org/reports-and-publications/supervisory-skills-training-impact-evaluation/

BGMEA. Export Performance

DBL group. 2017. *Sustainability Report 2017*. http://www.dbl-group.com/wp-content/uploads/2019/07/DBL-Group-Sustainability-Report-2017-1.pdf

Heath, R., & Mobarak, A. M. 2015. "Manufacturing growth and the lives of Bangladeshi women". *Journal of Development Economics* 115, 1–15. https://www.researchgate.net/publication/271602445_Manufacturing_Growth_and_the_Lives_of_Bangladeshi_Women

International Finance Corporation. 2018. *Cutting Through the Cloth Ceiling*. https://www.ifc.org/wps/wcm/connect/region__ext_content/ifc_external_corporate_site/south+asia/resources/cutting+through+the+cloth+ceiling

Katalyst Initiative. 2024. "Global Garment Workers Count: Estimating the Size and Composition of the Global Garment Workforce." *Building Blocks for Governing Global Value Chains*. Working Paper 4. https://katalystinitiative.org/working-paper-4/

Macchiavello, R., Menzel, A., Rabbani, A., & Woodruff, C. 2020. *Challenges of change: An experiment promoting women to managerial roles in the Bangladeshi garment sector.* National Bureau of Economic Research. https://chriswoodruff.qeh.ox.ac.uk/wp-content/uploads/2020/07/Challanges-of-Change_July2020.pdf

Matsuura, A., & Teng, C. 2020. *Understanding the gender composition and experience of ready-made garment (RMG) workers in Bangladesh*. Geneva: International Labour Organization. https://www.ilo.org/publications/understanding-gender-composition-and-experience-ready-made-garment-rmg

Menzel, A., and Woodruff, C. 2021. "Gender wage gaps and worker mobility: Evidence from the garment sector in Bangladesh". *Labour Economics*, 71, 102000. https://chriswoodruff.qeh.ox.ac.uk/wp-content/uploads/2020/05/GenderWageGaps_200529AM.pdf

Ralph Lauren. 2022. *Global Citizenship and Sustainability Report*. Retrieved on January 26, 2025. https://video.ralphlauren.com/202301/20230124-sustainability-citizenship-hub/2022-RL-GCSReport.pdf

Rahman, S., Khan, W., Shahrier, S, and Akbar, S. 2023. *Study on the Decline of Women Workers in the Textile Industry in Bangladesh.* Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. https://etibd.org/wp-content/uploads/2023/03/ResearchReport-GIZ-ETI-BRACU.pdf

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

27

The Spinoff. "Why the main global sourcing countries are losing ground." September 10, 2024.
https://www.the-spin-off.com/news/stories/The-Materials-Why-the-main-global-sourcing-countries-are-losing-ground-18379

Uckat, Hannah, 2023. "Leaning in at Home: Women's Promotion and Intra-Household Bargaining in Bangladesh." *World Bank Policy Research Working Papers.*10370. https://openknowledge.worldbank.org/entities/publication/6a4ba087-2b62-48e0-b2db-7e7003c53faa

Woodruff C., Khan M., and Rabbani A. 2025. "Pathway to Productivity and Leadership: Evolution of Female Garment Workers in Bangladesh." *Centre for the Study of African Economies Working Paper Series.* https://www.csae.ox.ac.uk/publication/2128907/ora-hyrax

▶ Appendices

▶ Appendix A

TABLE A1: SUMMARY OF QUANTITATIVE AND QUALITATIVE RESPONDENTS

Type of respondent	Total respondents		Total female respondents		Total male respondents	
	Surveys	Interviews	Surveys	Interviews	Surveys	Interviews
GEAR trainee	109	23	109	23	-	-
Comparison supervisor	128	-	31	-	97	-
Line operator	963	13	702	12	261	1
Line chief/Line in- charge/ Line manager	190	-	1	-	189	-
Peer supervisor	29	-	25	-	4	-
Mentor supervisor	-	21	-	2	-	19
Factory manager	-	20	-	4	-	16
Family member	-	7	-	2	-	5

Source: Survey data.
Note: Surveys correspond to quantitative data collection using structured questionnaires. Interviews correspond to qualitative data collection with interview guidelines.

By design, all the GEAR-trained supervisors were women, while about a quarter of the comparison supervisors were women. The percentage of females among the comparison supervisor pool was higher than the industry average, suggesting a general pre-existing commitment of factories to promoting women in supervisory roles. The trainee supervisors were 27 years old on average, while the comparison supervisors were 29 years old. The education levels of both groups were similar, with about one-quarter having less than secondary schooling. Trainees lagged comparison supervisors by 10 percentage points on secondary or higher level of schooling. Over 80 percent of all supervisors were married, with both groups having similar number of children (about 1.3) and family size (about 2.3), as shown in **Table A2.**

Comparison supervisors had spent one more year in the RMG sector, worked in more factories, and spent less time at the current factory compared to trainees. They had longer experience as supervisors and correspondingly earned a slightly higher salary at the time of the survey. **Tables A2 and A3** provide a further breakdown of the differences between trainees and the full sample of comparison supervisors as well as with male and female comparison supervisors respectively.

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

29

TABLE A2: SUMMARY STATISTICS FOR SUPERVISORS

	Trainee supervisor	Comparison supervisor (non-trainee)
	(N = 109)	(N = 128)
Age (years)	27.14 (4.27)	29.30 (5.35)
= 1 if female	1.00 (0.00)	0.24 (0.43)
= 1 if currently married	0.82 (0.39)	0.89 (0.31)
Number of children	1.26 (0.44)	1.28 (0.45)
Family size (number)	2.27 (1.67)	2.31 (1.76)
Years in ready-made garment sector	9.97 (4.45)	11.01 (5.71)
Number of factories worked	1.28 (1.28)	2.60 (2.02)
Year(s) in the current factory	6.11 (3.22)	3.64 (3.21)
Year(s) in the current position	1.85 (1.24)	2.24 (2.24)
Current monthly salary (Bangladeshi Taka)	19,347.80 (2,377.08)	22,059.56 (11,409.37)
Education categories		
Primary or less	8 (7.3%)	4 (3.1%)
Grades 6 to 8	28 (25.7%)	32 (25.0%)
Grades 9-10	19 (17.4%)	15 (11.7%)
Secondary School Certificate	27 (24.8%)	36 (28.1%)
High School Graduate or more	27 (24.8%)	41 (32.0%)
First job in ready-made garment sector:		
Helper	71 (65.1%)	66 (51.6%)
Input person	2 (1.8%)	16 (12.5%)
Line operator	20 (18.3%)	10 (7.8%)
Other	16 (14.7%)	36 (28.1%)

Source: Survey data.

A comparison was also conducted between sewing operators supervised by GEAR trainees and comparison supervisors, respectively. Observed characteristics of line operators from the two groups closely resembled each other. The average age in both groups was approximately 27 years, with about 70 percent being women. Over 80 percent were married with an average of 1.3 children and a family size of three. On average, the line operators had worked in the sector for about eight and a half years, and their education levels were comparable. The majority of line operators initially began as helpers in the sector, which is a prevalent characteristic of the industry, as indicated in **Table A3.**

TABLE A3: SUMMARY STATISTICS FOR LINE OPERATORS

	Line operators (working under trainee supervisor)	Line operators (working under non-trainee supervisor)
	(N = 453)	(N = 510)
Age (years)	27.05 (5.61)	26.95 (6.04)
= 1 if female	0.71 (0.45)	0.74 (0.44)
= 1 if currently married	0.80 (0.40)	0.82 (0.38)
Number of children	1.28 (0.45)	1.31 (0.46)
Family size (number)	3.04 (1.48)	2.92 (1.37)
Years in ready-made garment sector	8.69 (5.45)	8.51 (5.21)
Number of factories worked	1.63 (1.79)	1.41 (1.43)
Year(s) in the current factory	3.39 (3.16)	3.50 (3.67)
Year(s) in the current position	3.11 (2.96)	3.14 (3.40)
Current monthly salary (Bangladeshi Taka)	13,919.75 (11,280.64)	12,555.88 (2,796.10)
= 1 if wants to be Supervisor	0.51 (0.50)	0.45 (0.50)
Education categories		
Primary or less	168 (37.1%)	209 (41.0%)
Grades 6 to 8	174 (38.4%)	190 (37.3%)
Grades 9-10	46 (10.2%)	30 (5.9%)
Secondary School Certificate	45 (9.9%)	57 (11.2%)
High School graduate or more	20 (4.4%)	24 (4.7%)
First job in ready-made garment sector:		
Helper	373 (82.3%)	416 (81.6%)
Input person	5 (1.1%)	3 (0.6%)
Line operator	55 (12.1%)	62 (12.2%)
Other	20 (4.4%)	29 (5.7%)

Source: Survey data.

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

31

TABLE A4: REGRESSION OF TRAINEE STATUS ON OPERATOR REPORTED OUTCOMES OF WORKING CONDITIONS

Variables	Standardized values of working conditions index
	(2)
Trainee status	0.375*** (0.103)
Supervisor's work experience	0.003 (0.002)
Trainee status * Supervisor's work experience	-0.004 (0.003)
Constant	0.456 (0.395)
Control mean	-0.124
Factory fixed effects	Yes
Controls for supervisor and line operator characteristics	Yes
Observations	963
R^2	0.078

*Note: *p<0.1; **p<0.05; ***p<0.01*

1. Outcome variable is the working conditions index.

2. The following control variables are used: Supervisor characteristics – age, education, marital status, and work experience; Line Operator characteristics – age, gender, education, and marital status.

3. Reference categories are: Line operator's gender – male, Supervisor and Line operator's marital status – unmarried.

4. To find doubly robust measures of estimates, 1:1 Nearest Neighbor Matching without replacement is used with two distance metrics: Mahalanobis Distance and Propensity Score.

5. The standard errors are robust and clustered at the supervisor's level.

6. Factory level fixed effects are included in all the models.

7. Columns (1) and (2) show OLS fixed effects regression results before matching.

In addition to all the controls in the first model, the second model includes the interaction between the trainee status and supervisor's work experience.

TABLE A5: REGRESSION OF TRAINEE STATUS OF SUPERVISORS ON OPERATOR REPORTED OUTCOMES OF MANAGEMENT PRACTICES

Variables	Standardized values of management practices index
	(2)
Trainee status	0.224** (0.106)
Supervisor's work experience	0.004** (0.002)
Trainee status * Supervisor's work experience	-0.004 (0.003)
Constant	-0.018 (0.386)
Control mean	-0.053
Factory fixed effects	Yes
Controls for supervisor and line operator characteristics	Yes
Observations	963
R^2	0.055

*Note: *p<0.1; **p<0.05; ***p<0.01*

1. Outcome variable is the management practices index.

2. The following control variables are used: Supervisor characteristics – age, education, marital status, and work experience; Line Operator characteristics – age, gender, education, and marital status.

3. Reference categories are: Line operator's gender – male, Supervisor and Line operator's marital status – unmarried.

4. To find doubly robust measures of estimates, 1:1 Nearest Neighbour Matching without replacement is used with two distance metrics: Mahalanobis Distance and Propensity Score.

5. The standard errors are robust and clustered at the supervisor's level.

6. Factory level fixed effects are included in all the models.

7. Columns (1) and (2) show OLS fixed effects regression results before matching. In addition to all the controls in the first model, the second model includes the interaction between the trainee status and supervisor's work experience.

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

33

▶ Appendix B: Technical Discussion by Research Team

Working conditions are shown in **Figures 6, A1, and B1** as differences in the raw index for trainees and comparison supervisors. The raw data show that operators working for trainees report significantly higher measures of working conditions than operators working for comparison supervisors. This finding is mirrored in the supervisor surveys (two bars on the right in **Figure B1**). One could ask whether these patterns remain unchanged when the research team control for differences between the trainee and comparison supervisors. The research team examined this using a simple OLS regression of the form:

$$Outcome_{ilf} = \alpha Trainee_{lf} + \beta X_{if} + \gamma f + \epsilon_{ilf} \quad (1)$$

where $Outcome_{ilf}$ is the working condition index of worker i on line l in factory f, X is a vector of covariate controls (both at the supervisor and operator level) and γ is factory fixed effects. Interpreting α as the causal effect on trainees on reported working conditions requires believing that the operators are as good as randomly assigned to supervisors and that supervisors are as good as randomly assigned to production lines. Both assumptions appear reasonable in this case, though it is not possible to test them.

FIGURE B1: WORKING CONDITIONS: LINE OPERATOR COMPARISON OF GEAR-TRAINED AND COMPARISON SUPERVISORS
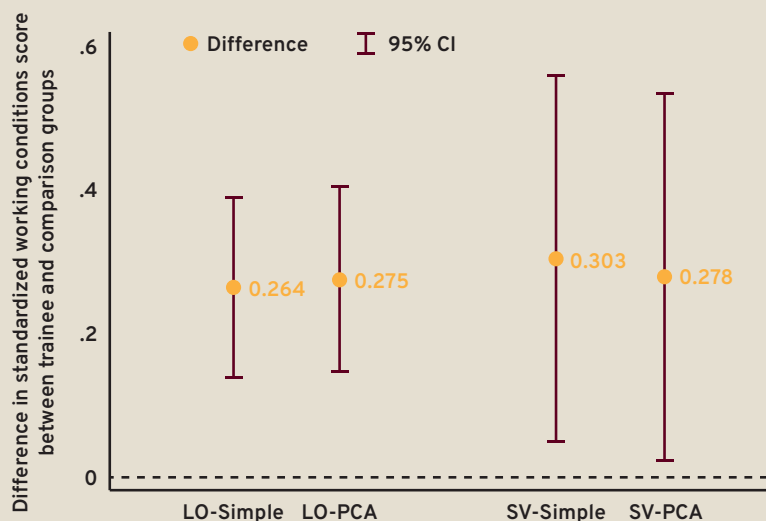
Note: The figure above shows the differences in the raw index for trainees and comparison supervisors as well as the operators working for the two groups of supervisors. The raw data show that operators working for trainees report significantly higher measures of working conditions than do operators working for the comparison supervisors. This finding remains if the research team use an alternative, more conservative index using principal components rather than the standardized index indicating (bar entitled "LO-PCA" above). This finding is mirrored in the supervisor surveys (bar entitled "SV-PCA" above).

▶ Appendix C: Notes

Efficiency

In a typical factory, a team of industrial engineers (IEs) breaks the production of each style of garment into a series of steps. The IEs then calculate the time it should take a fully efficient sewing machine operator to complete each step. This is the Standard Minute Value (or SMV) for the step. The SMV for the garment is the sum of the SMVs for each of the steps required to produce the garment. The SMV for a style (e.g., a dress shirt or a pair of trousers) multiplied by the number of pieces produced (completed) on a given day yields the *output minutes* for a line for the day. Efficiency is calculated as the *output minutes* divided by the available minutes – the total number of workers involved in sewing times and the number of minutes the production line operated. Generally, in the industry, efficiency is well below 100 percent for a variety of reasons; among factories in our sample, the average efficiency was typically between 45 and 70 percent on a line on any given day. Supervisors can affect the efficiency of the line by, for example, motivating workers, limiting machine breakdowns, improving production flow (limiting bottlenecks), and making sure that there are no input shortages on the line.

The research team matched the trainees and comparison supervisors to the line on which they worked on the day of the survey. The sample for analysis contains the lines managed by either a trainee or a comparison supervisor. The research team restricted the sample for the analysis to data collected within a 120-day timeframe centered around the survey date. In practical terms, this meant the research team focused on the 120-day period leading up to the survey day, as the research team collected administrative data around the same time the surveys were conducted. The research team have production data for supervisors on 159 production lines in 20 factories and the attendance data for all workers from 142 lines in 19 factories. The research team use an ANCOVA specification, taking the window 150 to 180 days prior to the survey as the baseline period.

Columns (1) through (4) in **Table C1** below show results from regression analysis with the efficiency measure on the left-hand side and a variable indicating the line is managed by a trainee. Since the sample is lines managed by either a trainee or a comparison supervisor, the coefficients should be read as the outcome for the trainee compared to the outcome for the comparison supervisor. Column (1) shows that lines managed by the trainees are 2.5 percentage points more efficient, though the effect is not statistically significant. The 2.5 percentage point increase means that efficiency increased by 5 percent from around 57 percent to 59.5 percent. The research team saw in **Table A2** in Appendix A that almost a quarter of the comparison supervisors are female. The regression in Column (1) compares trainees with a comparable group of supervisors. In Column (2), the research team separate the comparison supervisors by gender, adding a control indicating that the comparison supervisor is female. When the research team do this, the data shows that lines managed by female comparison supervisors are significantly more efficient than those managed by male comparison supervisors. Once the research team add the control for female comparison supervisors, the research team find that the lines managed by the female trainees are 4.3 percentage points (about 7.5 percent given average efficiency of 57 percent) more efficient than the lines managed by male comparison supervisors, a difference that is significant at the 0.05 level.[16] This change implies that female-led lines produced 61.3 pieces in the same time that male-led lines produced 57 pieces, increasing the number of pieces produced by nearly 8 percent.

16   Eleven of the 20 factories represented in the regressions in Table 6 have at least one female comparison supervisor. The results are very similar, though with larger standard errors, when the sample is limited to these 11 factories.

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

35

TABLE C1: REGRESSION OF TRAINEE STATUS OF SUPERVISORS ON EFFICIENCY AND ABSENTEEISM OF LOs

Variables	Line-level efficiency				Line-level absenteeism			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Trainee	0.0251 (0.020)	0.043** (0.021)	-0.036 (0.031)	-0.034 (0.031)	-0.003 (0.0028)	-0.004 (0.0027)	0.00002 (0.0042)	0.0001 (0.0042)
Comparison supervisor = female		0.089*** (0.025)				-0.0018 (0.0047)		
Supervisor experience (months)			-0.0003 (0.0005)	-0.0003 (0.0005)			0.00004 (.000006)	0.00004 (.000006)
Trainee * experience			0.0028** (0.0011)	0.0028 (0.0010)			-0.00013 (0.00016)	-0.00013 (0.00016)
Baseline dependent variable	0.621*** (0.055)	0.594*** (0.054)	0.613*** (0.059)	0.616*** (0.059)	0.719*** (0.077)	0.717*** (0.078)	0.708*** (0.112)	0.707*** (0.112)
Observations	8548	8548	8548	8548	6349	6349	6349	6349
# of lines	159	159	159	159	142	142	142	142
R^2	0.239	0.253	0.250	0.248	0.191	0.192	0.192	0.191
Mean dependent variable	0.572	0.572	0.572	0.572	0.0304	0.0304	0.0304	0.0304

Robust standard errors in parenthesis.

*** p<0.01, ** p<0.05, * p<0.1

Notes: Regressions also include controls of characteristics of the supervisor (tenure in the factory, age and level of education), as well as date fixed effects. Columns 1 to 3 also control for factors related to the style being produced (complexity, measure by SMV and number of days the style has been produced on the line). Standard errors are clustered at the factory level. Columns 3 and 6 weight the observations with a propensity score estimated using the variables included in the regression. The sample is 120 days leading up to the date of the factory survey; the baseline dependent variable is from the month six months prior to the survey.

In Column (3), the research team account for possible learning effects. The research team include a variable measuring the number of months the individual has worked as a line supervisor and examine the effect of being a GEAR trainee at different levels of experience (as measured by months working as an SV). The results suggest that the lines managed by GEAR trainees are initially less efficient than those managed by comparison supervisors, though as in Column (1) this difference is not statistically significant, *and* that the trainees become significantly more efficient over time. The lines managed by trainees become one percentage point (or almost 2 percent) more efficient within every three-month period, a pattern consistent with the raw data shown on Figure 8 in the text. Finally, Column (4) repeats the specification in Column (3), but correcting for the possible selection bias by using propensity score weights. Since the trainees and comparison supervisors are quite well matched (see **Table A2**), it is not surprising that the propensity score weighting has little effect on the results.

Absenteeism

Most factories report the total number of workers present and absent on the line. The absenteeism rate is simply the number of absent workers divided by the sum of absent and present workers. Columns 5 through 8 in **Table C1** repeat the same three regression specifications with the absenteeism rate as the dependent variable. No significant differences were found in the absenteeism rates on lines managed by GEAR trainees and comparison supervisors.

▶ Appendix D: Description of Qualitative Respondents

GEAR Trainees

The research team used in-depth interviews with 23 trainees to explore challenges faced by GEAR trainees during their transition to supervisory roles and to determine the factors that facilitated their success. Open-ended interviews allowed the research team to assess the impact of a training program on the well-being and career outlook of trainees who either were not promoted or were promoted but later decided to return to their positions as line operators.

Sewing Operators or Line Operators (LOs)

The research team conducted 13 in-depth interviews with female line operators who had worked under trainee supervisors for at least six months. The primary objective of these interviews was to determine whether there was any difference in the respondents' aspirations and ambitions while working under trainee supervisors and whether there was any difference in the working conditions compared to working under non-trainee supervisors. The research team focused on understanding the experiences of the female line operators who worked under trainee supervisors and sought to determine if these experiences had any lasting impact on their work lives.

Mentor Supervisors

The research team conducted focus group discussions of line chiefs and supervisors who managed or mentored the GEAR trainee supervisors. Five focus group discussions in five factories involving 21 mentor-supervisors took place. The respondents are referred to as mentor-supervisors (M-SV). The mentor-supervisors were already working as supervisors when the trainee supervisors were assigned to their lines to work alongside them for 3 to 6 months. These interviews focused on the perceptions and attitudes of mentor-supervisors towards the training program and trainees. The discussions also examined the perceptions of mentor-supervisors regarding trainee supervisors' contributions to line efficiency and productivity.

Managers

The research team conducted 20 interviews with a range of managerial personnel. These interviews specifically targeted those occupying higher-level production management positions, including production managers and assistant production managers, as well as industrial engineers, quality control experts, and human resource managers. The primary objective of these interviews was to learn whether the production lines managed by female trainees exhibited levels of productivity equivalent to those overseen by contemporary male or female non-trainee supervisors.

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

37

▶ Appendix E: Survey Overview and Methodology Details

Factory Survey

The assessment focused on a representative sample of factories that produce light knit and woven products. The largest share of participating factories was in the capital of Dhaka, with the remainder in surrounding districts of Dhaka and Chittagong: specifically, 12 were in Gazipur, seven in Savar, two in Tangail, two in Chittagong, and one each in Manikganj, Mirpur, Mymensingh, and Narayanganj, as shown in **Figure E1.** All exported to large western buyers (brands) and were sponsored by buyers to be part of the GEAR training program. From an initial list of 50 factories, 27 factories were included in the survey (six supplier factories of M&S, six supplier factories of Levi's, five supplier factories of Ralph Lauren, three supplier factories of VF Corporation, and seven supplier factories of H&M).

FIGURE E1: LOCATIONS OF FACTORIES SURVEYED IN THIS STUDY.
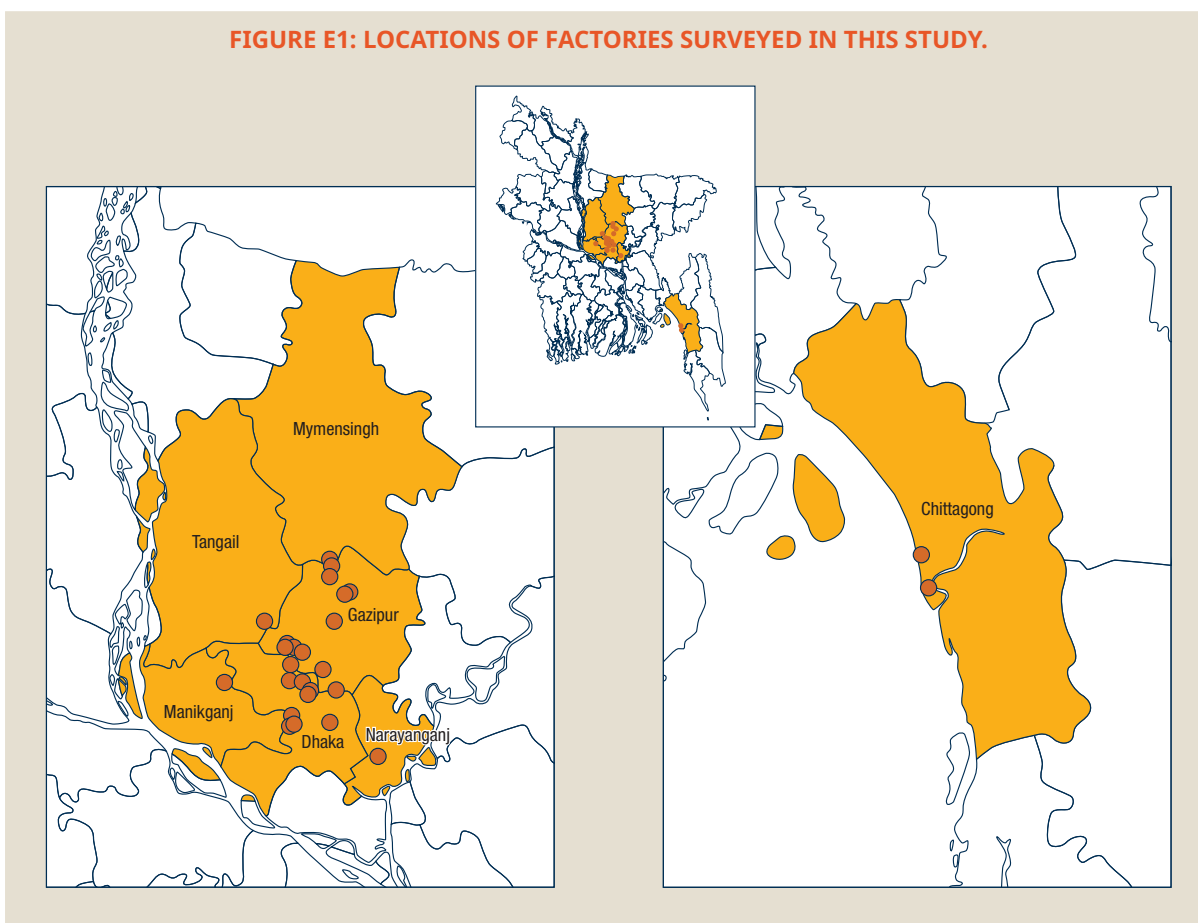
The survey was initiated to compare the performance of GEAR-trained supervisors with a matched sample of supervisors who had similar experience levels but did not receive GEAR training. The research team worked with the 27 participating factories to carefully identify groups of supervisors with similar experience levels to those of the trainees.

The research team set out to obtain a representative sample of five GEAR-trained supervisors and five comparison supervisors. The research team surveyed five trainee supervisors in 14 factories.

The 110 trainee supervisors the research team interviewed represented an average of more than four per factory.

The research team aimed to survey at least five comparison supervisors and achieved that goal in 19 of the 27 factories. The research team surveyed four comparison supervisors in seven of the remaining eight factories.

The research team sought to gather data from two female and two male operators working on a line or section of a line managed by one of the supervisors. The research team interviewed 963 operators, with an average of over 35 per factory.

The research team sought to conduct surveys of the line chiefs and line-in-charge who directly oversaw the work of trainees and comparison supervisors. In some factories, the research team encountered difficulties in accessing the designated line chiefs and line-in-charge. In such situations, the research team conducted surveys with supervisors who were working on the same line and had closely observed the supervisors in question. These supervisors were specifically designated as peer supervisors (PS). Ultimately, the research team was able to survey a total of 190 line-chiefs/line-in-charge and 33 peer supervisors across all factories.

Administrative Data

In addition to the quantitative surveys, the research team collected administrative records from all 27 factories participating in the study. The administrative data provide daily line-level production and attendance records. Each factory organized their data in a different manner and the data were harmonized across factories.

Sample for Qualitative Interviews

To complement quantitative data, the research team used qualitative interviews to explore the challenges of implementing the GEAR training from the perspective of the factory managers, and the challenges the GEAR trainees faced transitioning to the role of supervisors. The research team conducted open-ended interviews that allowed participants to express their opinions and experiences in their own words.

The research team conducted qualitative interviews in 14 factories, including factories where there were no existing GEAR supervisors and factories where GEAR supervisors had shifted back to the role of line operators.

The research team conducted 20 key informant interviews (KIIs) of factory managers and eight focus group discussions of line-chiefs who had mentored the GEAR trainees. Of the 20 managers the research team interviewed, four were women. The research team interviewed 13 line operators, of which 12 were women, and six family members of trainees. A summary is provided in **Table A1,** and a full description of the respondents is provided in Appendix D.

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

39

▶ Appendix F: Selected Survey Questions

TABLE F1: SURVEY QUESTIONS TO INDICATE WORKING CONDITIONS

Questions for line operators	Questions for supervisors	Score - Answer
Compared to the typical supervisor in your factory, to what extent did or does [ADD NAME] give extra support to less skilled operators?	Compared to the typical supervisor in your factory, to what extent do you give extra support to less skilled operators?	1 - Much more 2 - Somewhat more 3 - Equally 4 - Somewhat less 5 - Much less -97 - Don't know -98 - Refused to answer
Compared to the typical supervisor in your factory, to what extent did or does [ADD NAME] use praise to motivate operators?	Compared to the typical supervisor in your factory, to what extent do you use praise to motivate operators?	
Compared to the typical supervisor in your factory, to what extent did or does [ADD NAME] use shouting or abusive language to motivate operators?	Compared to the typical supervisor in your factory, to what extent do you use shouting or abusive language to motivate operators?	
Compared to the typical supervisor in your factory, to what extent did or does [ADD NAME] involve sewing operators in solving problems on the line?	Compared to the typical supervisor in your factory, to what extent do you involve sewing operators in solving problems on the line?	
Compared to the typical supervisor in your factory, to what extent did or does [ADD NAME] practically demonstrate tasks in front of operators so that they understand what to do?	Compared to the typical supervisor in your factory, to what extent do you practically demonstrate tasks in front of operators so that they understand what to do?	
Compared to the typical supervisor in your factory, to what extent did or does [ADD NAME] sit down and sew herself if an operator is absent or needs to go to the washroom?	Compared to the typical supervisor in your factory, to what extent do you sit down and sew yourself if an operator is absent or needs to go to the washroom?	
Compared to the typical supervisor in your factory, to what extent did or does [ADD NAME] communicate the skills you need to acquire to be promoted?	Compared to the typical supervisor in your factory, to what extent do you communicate the skills an operator needs to acquire to be promoted?	
Compared to the typical supervisor in your factory, to what extent did or does [ADD NAME] help you gain the skills you need to be promoted?	Compared to the typical supervisor in your factory, to what extent do you help operators gain the skills they need to be promoted?	

TABLE F2: QUESTIONS TO INDICATE MANAGEMENT PRACTICES OF SUPERVISORS (LINE OPERATOR SURVEY)

sa_3 — **Now we ask you some questions where we ask you to compare your line supervisor to a typical supervisor. Do you agree or disagree with the following statements:**

sa_3a	Compared to the typical supervisor in my factory, the line supervisor I work with most is more confident as a supervisor.	1 2 3 4	Strongly disagree Disagree Agree Strongly agree
sa_3b	Compared to the typical supervisor in my factory, the line supervisor I work with most is better at remaining calm in stressful situations.	1 2 3 4	Strongly disagree Disagree Agree Strongly agree
sa_3c	Compared to the typical supervisor in my factory, the line supervisor I work with most is better at motivating operators and making others feel like they want to do their best and making them feel like they can do more.	1 2 3 4	Strongly disagree Disagree Agree Strongly agree
sa_3d	Compared to the typical supervisor in my factory, the line supervisor I work with most is better at correcting mistakes and ensuring product quality.	1 2 3 4	Strongly disagree Disagree Agree Strongly agree
sa_3e	Compared to the typical supervisor in my factory, the line supervisor I work with most is better at helping operators if they have problems at their workstations.	1 2 3 4	Strongly disagree Disagree Agree Strongly agree
sa_3f	Compared to the typical supervisor in my factory, the line supervisor I work with most is better at encouraging operators to take leadership positions.	1 2 3 4	Strongly disagree Disagree Agree Strongly agree
sa_3g	Compared to the typical supervisor in my factory, the line supervisor I work with most is better at helping operators improve their skills.	1 2 3 4	Strongly disagree Disagree Agree Strongly agree
sa_3h	Compared to the typical supervisor in my factory, the line supervisor I work with most has a better understanding of which machines are appropriate for which tasks, and knowing when machines are not functioning properly.	1 2 3 4	Strongly disagree Disagree Agree Strongly agree
sa_3i	Compared to the typical supervisor in my factory, the line supervisor I work with most is better at meeting production targets.	1 2 3 4	Strongly disagree Disagree Agree Strongly agree

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

41

TABLE F3: SELF-EFFICACY AND GOAL SETTING AS REPORTED BY SUPERVISORS

Panel A

segs_1	On a scale of 1-10, with 1 being you never feel this way, 5 being you sometimes feel this way and sometimes do not feel this way, and 10 being you always feel this way, please rank the following statements:		
segs_1a	If someone opposes me, I can find the means and ways to get what I want.	1	Never feel this way
		10	Always feel this way
segs_1b	I am confident that I can deal efficiently with unexpected events.	1	Never feel this way
		10	Always feel this way
segs_1c	I can solve most problems if I invest the necessary effort.	1	Never feel this way
		10	Always feel this way
segs_1d	I can remain calm when facing difficulties because I can rely on my coping abilities.	1	Never feel this way
		10	Always feel this way
segs_1e	When I am confronted with a problem, I can usually find solutions.	1	Never feel this way
		10	Always feel this way

Panel B

segs_2	Please rate how much you agree/disagree with the statement below. "I can always manage to solve difficult problems if I try hard enough."	1	Fully agree
		2	Somewhat agree
		3	Somewhat disagree
		4	Fully disagree
		-97	Do not know
		-98	Refused to answer
segs_3	Please rate how much you agree/disagree with the statement below. "I am confident that I can deal efficiently with unexpected events."	1	Fully agree
		2	Somewhat agree
		3	Somewhat disagree
		4	Fully disagree
		-97	Do not know
		-98	Refused to answer
segs_4	Please rate how much you agree/ disagree with the statement below. "Workers tend to confide in me about personal issues."	1	Fully agree
		2	Somewhat agree
		3	Somewhat disagree
		4	Fully disagree
		-97	Do not know
		-98	Refused to answer
segs_5	Please rate how much you agree/ disagree with the statement below. "When I see someone who is stressed or anxious, I can easily calm them down."	1	Fully agree
		2	Somewhat agree
		3	Somewhat disagree
		4	Fully disagree
		-97	Do not know
		-98	Refused to answer
segs_6	Please rate how much you agree/ disagree with the statement below. "I am good at sensing what others are feeling."	1	Fully agree
		2	Somewhat agree
		3	Somewhat disagree
		4	Fully disagree
		-97	Do not know
		-98	Refused to answer

▶ Appendix G: Research Terms and Additional Information

Terms	Definitions
Absenteeism	Number of days worker was absent this month
Attendance	Days attended
Attendance bonus	Attendance bonus amount
Available minutes	Actual manpower total * hours * 60min
Basic	Basic salary
Buyer	Buyer of garments produced
BWB enterprise advisor	Better Work Bangladesh enterprise advisors are involved in supervising, advising and assessing compliance with labor standards and act as the bridge between workers and managers in factories. In the GEAR program they helped in the consultation process with management to select, promote, and support female talent at the enterprise level.
Career progression	Professional growth and opportunities with various steps, experiences, and learning opportunities to enhance skills, acquire new knowledge, and achieve higher levels of responsibility and job satisfaction.
Days paid	Days salary is paid for
Department	Department to which worker is assigned
Designation	Job position of worker
Earned leave	Earned/annual leave (Law: 1 day per 18 days of work in previous year if tenure >1yr)
Floor	Floor where worker is assigned
GEAR advisory committee	GEAR advisory committee consists of four members from the factory's departments - human resources, administration, production and industrial engineering. The committee plays a key role in coordinating with other relevant factory management to support the GEAR team to implement the program successfully.
Gender	1=male, 2=female (gender of the respondent)
Grade	Worker's grade
Gross income	Gross income (usually this is the basic salary (wages) and may include additional allowances)
Hours	Line operating hours
Item	Type of garment
In-house training	Factories providing training to the workers through their own initiative
Line	Line name
LO	Line operator
Machines	Number of machines on the line
Management style	The approach, behavior, and strategies employed by supervisors to guide, motivate, and oversee the workforce, including interacting with employees, making decisions, allocating resources, and fostering a positive and productive work environment.
Maternity leave	Maternity leave (Law: 16 weeks if tenure >6 months)

CREATING BETTER JOBS FOR WOMEN AND BOOSTING PRODUCTIVITY IN BANGLADESH'S
GARMENT FACTORIES: AN ASSESSMENT OF THE GENDER EQUALITY AND RETURNS PROGRAM

43

Terms	Definitions
Month	Month (from date)
Name	Worker's name
Output minutes	Daily output * SMV
Overtime	Extra overtime amount paid
PCA	Principle Components Analysis – PCA is a type of statistical analysis that enables researchers to check the validity of indexed measures by preserving the maximum amount of information, while also reducing the dimensions of the data. So, in this case, it allowed us to average and standardize the sets of questions used to describe working conditions into a single, simplified index.
Process	Name of sewing process/operation
Reject	# of pieces rejected (will not be fixed)
Running days	# days producing the current style
Section	Section where worker is assigned
Sick leave	Sick leave (Law: 14 days/year with full pay)
SMV	Standard Minute Value reported by factory
Spot	# of pieces with one or more spots
Stamp	Deduction for stamping salary paper with official seal
Style	Type of product
Standardize/ Standardization	Standardization of a variable refers to the process of transforming the values of a variable to have a specific mean and standard deviation. This is a common technique used in data analysis to compare variables that may have different scales or units. After calculating the mean and variance, we subtracted the mean from each value of the variable, which centers the value around zero and then divided this by the standard deviation.
Target minutes	Target * SMV (Standard Minute Value reported by factory)
Total absent	From HR data: # helpers and operators assigned to line absent on the day
Total number of workers	Actual number of helpers and operators on-line on the day
Qc pass	Number of pieces passing quality check
Unit	Unit/area of factory
Worker wellbeing	The holistic state of physical, mental, and social welfare experienced by workers that contributes to the overall quality of life and satisfaction of workers, aiming to create a supportive and empowering work environment.
Working conditions	The overall environment, circumstances, and arrangements encompass aspects that directly impact the physical, psychological, and social well-being of workers, ensuring their safety, health, and dignity.
Year	Year (from date)

For further information about the GEAR assessment in Bangladesh, please contact:
- Professor Christopher Woodruff: christopher.woodruff@economics.ox.ac.uk
- Professor Atonu Rabbani: atonu.rabbani@du.ac.bd
- Dr Mahreen Khan: mahreen.khan@oxfordmartin.ox.ac.uk

For further information about GEAR training in Bangladesh, please contact:
- Nabeera Rahman: nrahman1@ifc.org
- Mohammad Shamsul Hoque: hoque@ilo.org