



## Unleashing Ethiopia's Garment Sector Potential: Enhancing Work-Related Soft Skills with Game-Based Training

Number 01/23

July 2023

By Emmanuel Estrellado, Pimmada Charoensilp, Shoko Yamada

<http://skills-for-development.com/>

### Key Messages

- The SKY Project's game-based training using board games grounded on behavioral modeling theory effectively develops participants' work-related skills. Soft skills training simulates work scenarios and encourages participants to create unique solutions.
- The training's effectiveness is supported by the proven success of behavioral modeling theory in soft skills development, forming the basis for the SKY project's game-based approach.
- Based on the workplace analysis and inputs from industrial production experts, our boardgames are designed to improve soft skills in the following five domains: occupational health and safety (OHS); tidiness and cleanliness; workplace efficiency; product quality control; and teamwork.
- The SKY project game-based training demonstrated effectiveness in all five work-related soft skill domains.
- The training program is practical and cost-efficient, requiring only a day to complete, making it suitable for workers in developing countries with limited access to technology.
- Women, newly hired and less experienced workers benefit the most from game-based training interventions, highlighting the importance of targeting these groups to enhance their skills and contribute to their career growth and development.

### Background and Context

In recent years, Ethiopia's garment and textile industry enjoyed rapid growth at both national and global levels. However, the workforce lacks the necessary soft skills for sustaining and maximizing the development in this industry (Schaefer and Oya, 2019; Yamada et al., 2018). Work-related soft skills such as occupational health and safety, tidiness and cleanliness, workplace efficiency, product quality control, and teamwork are crucial for workers to succeed in the dynamic and competitive garment industry. Traditional soft skills training programs based on lectures often struggle to connect abstract concepts with real work situations. As a result, workers find it challenging to apply their acquired skills effectively in their work environment.

In response to the need for an innovative training approach,

game-based training emerged as a promising approach to developing and teaching soft skills in an engaging and practical manner. Combining a game-based training approach with behavioral modeling principles inspired by Bandura's (1977) theory creates a powerful training method. Our developed training program allows workers to learn modeled behaviors, engage in hands-on activities, and practice the modeled behaviors in a simulated work environment. This combined approach to training will ultimately bridge the gap between theory and practice, ensuring the application of the worker's newly acquired skills in their work environments.

This policy brief explores what a game-based training program grounded in behavioral modeling theory and its impact on work-

related soft skills development in Ethiopia's garment sector. The Policy brief aims to provide evidence-based insights for

## Training Program Design

A lot of thought and consideration was put in the design and development of the game-based training. Previous research primarily employed online and mobile games for behavioral modeling training (BMT). However, we found that Africans are more familiar with board games and that there is a need for offline access due to unreliable internet connections. We then consulted international and Ethiopian garment production

policymakers and industry stakeholders to enhance work-based soft skills training to promote sustainable industrial growth.

experts. Afterward, we identified four critical domains of work-related soft skills: occupational health and safety (OHS), tidiness, efficiency, and quality control, woven together by teamwork that will be embedded and contextualized in our games. As a result, we devised a training program centered around two physical board games.

We crafted two board games: **Garment Factory Fun 1** and **Garment Factory Fun 2** (Figure 1). *Garment Factory Fun 1* uses illustrated cards to model soft skills, boosting retention. *Garment Factory Fun 2* replicates factory challenges, enabling behavior rehearsal and skills transfer. Participants assume various roles inside the firm, collaborating to meet orders while overcoming obstacles. Post-game discussions after each game reinforces learning.

Our games integrate BMT elements proven to enhance skills transfer: rule codes, mental rehearsals, workplace simulation, and social reinforcement. Game rules encode learning goals. Soft skills cards promote the mental practice of soft skills. Lastly, the game design mirrors the factory setting, and players can monitor their progress, enhancing motivation.

Through our board game training program, we can effectively cultivate work-related soft skills, aligning with real-world requirements by utilizing established BMT principles. By offering offline accessibility and context-specific training, we address challenges African populations face, contributing to skill enhancement in the garment industry.



**Figure 1.** The developed board games used in behavioral modeling training.

## Methods

The paper employed a quasi-experimental design to analyze the impact of game-based soft skills training on workers' work-related soft skills development, collecting data from 501 participants in 21 garment firms on the outskirts of Ethiopia's capital city, Addis Ababa through pre- and post-training questionnaires. The questionnaires were designed to capture the changes in work-related soft skills of occupational health and safety (OHS), tidiness and cleanliness, workplace efficiency, product quality control, and teamwork. Variables for each work-related soft skill were constructed from 15 psychometric scale items the SKY Project team developed. Questions about

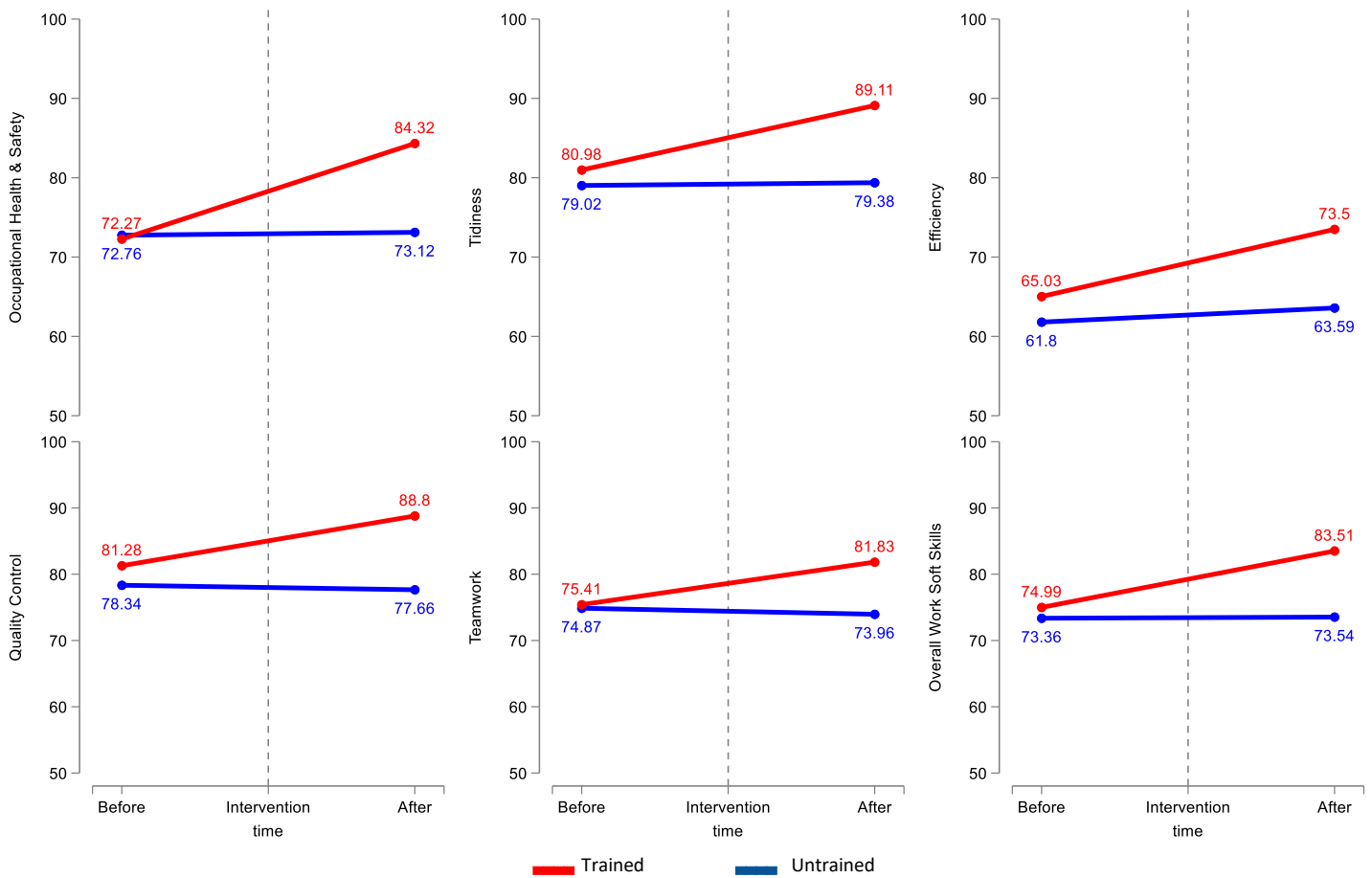
participants' educational and demographic backgrounds and work experiences were also included. Firm-level data was captured using questionnaires provided to human resources managers of the firms that participated in the study. The participants were divided into intervention (trained) and comparison (untrained) groups, with the former receiving game-based training. Data analysis utilized a difference-in-differences approach which controlled for individual and firm-level factors such as gender, age, education, wage, position, and factory size, to assess the training's impact on participants' self-reported work-related soft skills.

## Findings

Figure 2 shows the changes in each work-related soft skills before and after the implementation of game-based training for both trained and untrained workers. Before the training, the values of the various work-related soft skills and their average are comparable between the two groups. We can see that work-related soft skills for the trained group increased significantly after the training, while the work-related soft skills of the comparison group remained relatively the same. The results indicate that the game-based training intervention had a statistically significant effect on all five domains of work-related

soft skills. The participants in the intervention group demonstrated percentage point gains ranging from 6.42 to 12.1 percent compared to the untrained group.

Notably, the domains of OHS and quality control showed significant improvements. This suggests that prior to the training, participants had limited exposure to the concepts of personal responsibility for health, workplace safety, and quality control. The game-based training provided behavior models and rehearsal opportunities that helped participants internalize these concepts, resulting in substantial gains in these areas.



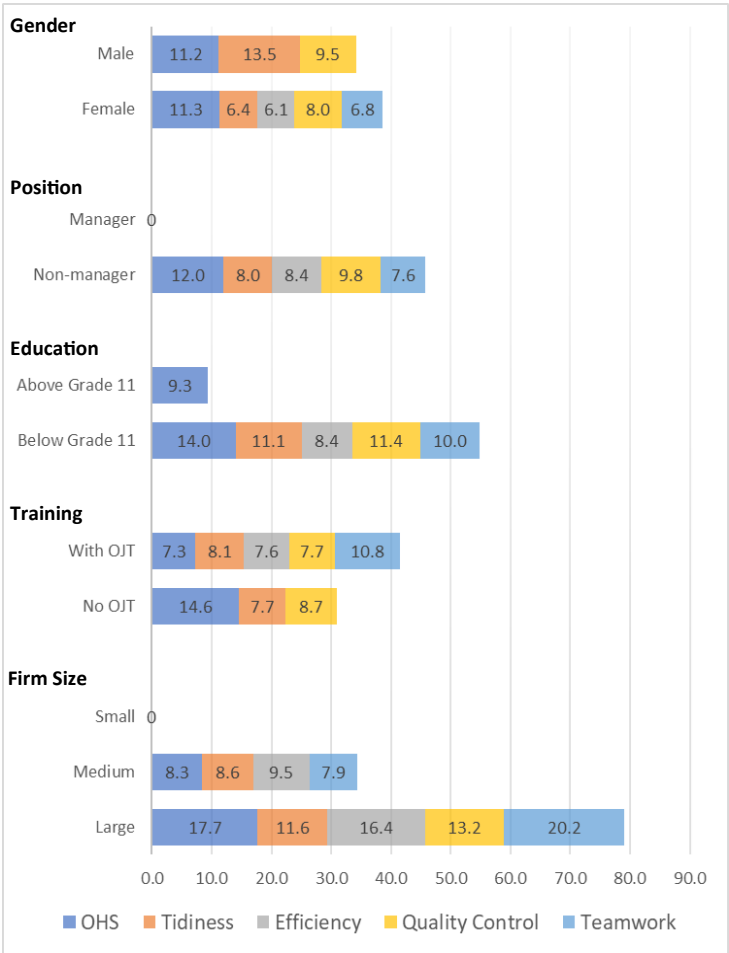
**Figure 2.** Changes in OHS, tidiness, efficiency, quality control, teamwork, and average work-related soft skills between the trained and untrained groups

The domains of tidiness and cleanliness and workplace efficiency also showed significant improvements. Keeping workstations tidy and clean, as well as performing tasks efficiently, are considered fundamental soft skills in the garment sector. The study findings highlight the effectiveness of the game-based training intervention in enhancing these skills among workers.

Figure 3 shows the percentage point gains in work-related soft skills disaggregated by gender, position, education, training, and factory size. We see that non-manager female workers without higher education from medium and large firms would benefit the most from our BMT game-based training program.

Overall, the study's findings provide empirical evidence that game-based training grounded in behavioral modeling theory can effectively enhance work-related soft skills among garment sector workers. The results highlight the importance of incorporating contextualized training interventions and providing opportunities for rehearsal and skill transfer in the workplace.

These findings have significant implications for policy and practice in the garment sector and beyond. By recognizing the value of game-based training and its impact on soft skill development, policymakers and training providers can design and implement effective training programs that address the specific needs of workers in various industries. The study underscores the potential of game-based training approaches in developing countries, where access to computers and the internet may be limited.



**Figure 3.** Percentage gains in work-related soft skills disaggregated by gender, position, education, training, and factory size

Policy Lessons and Suggestions

Based on the results, we suggest policymakers and industry stakeholders to consider the following policy actions to promote the development of work-related soft skills, for production line workers in manufacturing sectors in developing economies:

- **More participatory training in the environment closer to the actual workplace is important for improving soft skills.** Prioritize more participatory training situated in environments closely resembling the actual workplace to enhance soft skills. Even when workers received in-house training, those who underwent training still exhibited gains comparable to their untrained peers. This underscores the limitations of traditional training methods, such as lecture-style presentations, which lack hands-on learning components. The following are suggestions to improve Ethiopia's current soft skills training program:
  1. Incorporate game-based training grounded in behavioral modeling theory into existing soft skills training initiatives.
  2. Encourage collaboration between training providers, industry associations, and garment firms to integrate game-based behavioral modeling training into existing on-the-job training to enhance workers' soft skills development further.
  3. Allocate resources for developing and distributing board games that simulate workplace environments for soft skills development.
- **Target the training for women, less skilled and inexperienced population in SMEs.** The study has shown population subgroups that had significant gains when using a game-based behavioral training approach. The following are suggestions for different population subgroups to develop a more motivated and skilled workforce:
  1. **Women.** Developing targeted game-based training programs for women in the garment sector will address the gender disparity in work-related soft skills.
  2. **Non-managers.** Training programs tailored explicitly for non-managerial workers with low educational attainment will

provide them with the necessary soft skills for professional growth and development.

3. **Workers from medium and large firms.** Game-based training is effective, particularly in medium and large firms. Focusing on this subgroup will ensure the development of the necessary soft skills across the industry.

- **Collaboration and sharing are the keys to soft skills improvement.** The game-based behavioral model training effectively develops the work-related soft skills of garment sector workers. This training method can also be used in different industrial contexts. We suggest the following measures in order to achieve this:

1. Create a platform for sharing best practices in game-based training approaches and their application in different industrial contexts.
2. Establish industry-wide forums or networks to encourage knowledge exchange among garment firms, trainers, and policymakers.
3. Establish partnerships between training institutions, providers, industry associations, and garment firms to ensure alignment between training curricula and industry requirements.

By implementing these policy recommendations, stakeholders can enhance the work-related soft skills of garment sector workers in Ethiopia, improve their employability, and contribute to the overall growth and productivity not just of the garment industry but also of other industries as well.

References:

Bandura A, 1977. *Social Learning Theory*. Prentice Hall, Englewood cliffs.

Schaefer, F., Oya, C., 2019. *Employment patterns and conditions in construction and manufacturing in Ethiopia: A comparative analysis of the road building and light manufacturing sectors*. London.

Yamada, S., Otchia, C.S., Shimazu, Y., Taniguchi, K., Nigussie, F., 2018. *Bridging the Supply-Demand Gaps of the Industrial Workforce: Findings from a Skills Assessment of Garment Workers in Ethiopia*. Nagoya, Japan.

This policy brief is based on the paper “The effects of game-based soft skills training: A quasi-experiment with Ethiopian garment workers,” published in the journal International Journal of Educational Development on June 13, 2023, at DOI: 10.1016/j.ijedudev.2023.102823.

THE EFFECTS OF GAME-BASED SOFT SKILLS TRAINING:  
A QUASI-EXPERIMENT WITH ETHIOPIAN GARMENT WORKERS

The Problem

- Ethiopia's labor force lacks the necessary soft skills for work.
- Interventions to improve soft skills are not well-developed, and most existing training is lecture-based.



The Intervention

Training based on **behavior modeling theory** using **board games** was developed to help participants connect and apply soft skills to their work contexts.



The Results

**30.6%** increase in work-related soft skills of **occupational health and safety, tidiness and cleanliness, workplace efficiency, product quality control, and teamwork.**



Reference: Estrellado, E., Charoensilp, P., Yamada, S., 2023. The effects of game-based soft skills training: A quasi-experiment with Ethiopian garment workers. International Journal of Educational Development.

