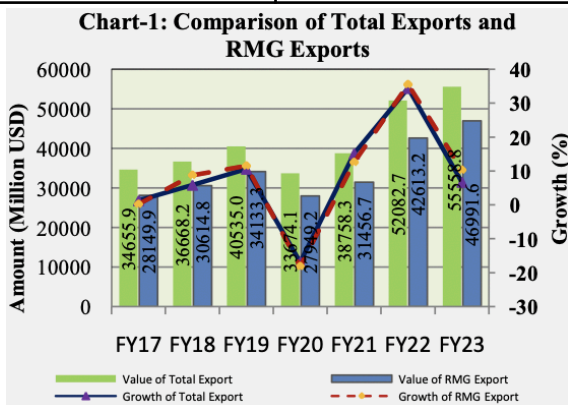


Automation in RMG sector: Impact on Employment through a Gender Lens

Munzeleen Sarwar, Ananya Raihan

A. Labour Force in Bangladesh RMG Sector and Significance in the Economy

RMG's Contribution to National GDP in FY 23 ¹	Contribution to Export (USD Million)
10.35%	USD 46991.61 million (84.5%) Increased by 10.27% compared to the last fiscal year ¹



Raw Material Imports: RMG

- Imports dropped **17.3%** in the first half of FY24 and **22%** for the entire previous year (FY23)
- Bangladesh's raw cotton imports plunged in FY24 (down **39%** in the first half).
- Fabric imports in Bangladesh also fell in FY23, dropping over **20%**.
- Man-made cotton fiber (MMF) dipped by more than **7%**.²

No. of RMG Factories in Bangladesh

> 4000

Legal Minimum Wage for Garment Workers

Tk 12,500

Hours Worked by Garment Workers

A 2018 survey³ revealed that **62% of RMG workers** work on average **12-hour** days, exceeding legal limits.

Foreign Employment

Around **15%** of Bangladesh RMG factories employ foreign staff (roughly 2,200 total), primarily in **management and merchandising roles**.⁴

Vocational Training Participation

15.71% in RMG
(Second-highest after computer training)⁵

Recommendation

CPD recommends a real-time database containing full information on all the RMG factories and employment figures.⁶

¹ <https://www.bb.org.bd/pub/quarterly/rmg/rmg%20april-june%20fy23.pdf>

² <https://businesspostbd.com/economy/rmg/rmg-exports-up-despite-dip-in-raw-material-imports>

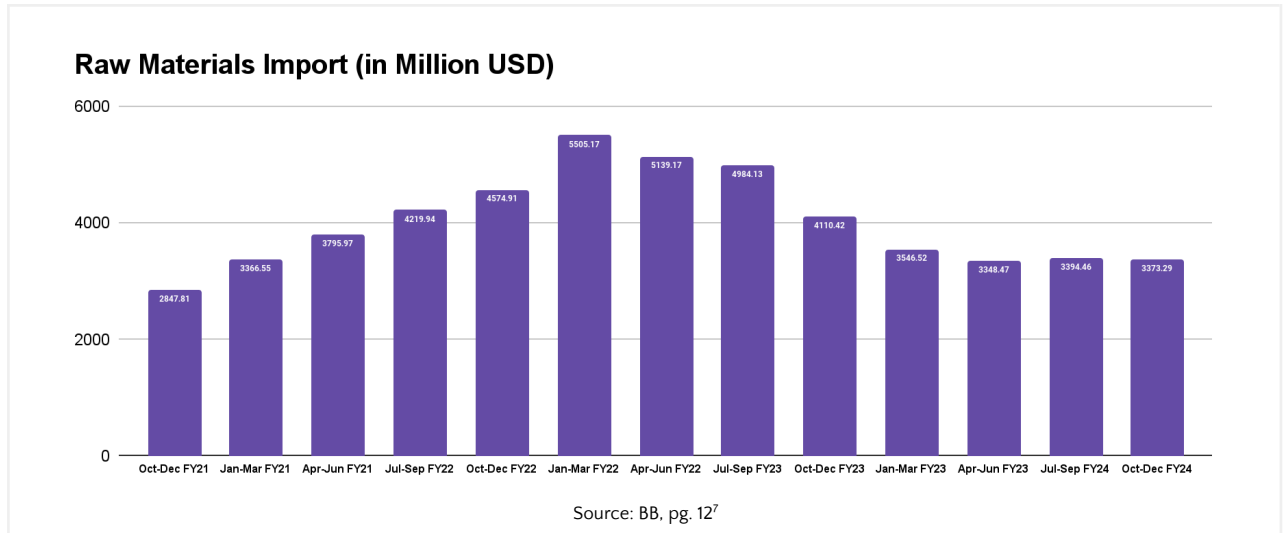
³ Hasan (2018) https://books.google.com.bd/books/about/Readymade_Garments_Industries_in_Banglad.html?id=xeA5zAEACAAJ&redir_esc=y

⁴ ACD Survey 2020

⁵ LFS 2022, BBS

⁶ https://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/b343a8b4_956b_45ca_872f_4cf9b2f1a6e0/2023-10-25-07-38-4304abd7a3f3d8799fbc59ff91007b1.pdf

⁶ <https://cpd.org.bd/resources/2019/01/CPD-Working-Paper-123-Data-Universe-of-Bangladesh's-RMG-Enterprises.pdf>



Total RMG Employment Figures (ACD, 2020) ⁸	Male Employment Figures in RMG (ACD, 2020)	Female Employment Figures in RMG (ACD, 2020)
4.22 million	1.72 million	2.50 million

Bangladesh's RMG workforce grew modestly (1.07% annually) from 2015 to 2020 (ACD Survey 2020). While **male** workers saw a **positive 4%** increase, the **female** workforce dipped **negatively by -0.7%**.

Fewer Women in Bangladesh Garment Factories:

- Women's share of the workforce has dropped significantly, from **80% in the 1980s** to **less than 66% now** (BRAC & ETI, 2023)⁹.
- This decline is due to both women's career preferences and recruitment practices in garment factories.¹⁰
- The number of women leaving Bangladesh's garment industry is on the rise (**51% in 2021 vs. 49% in 2015**). **89%** of leavers did so voluntarily.
- **Childcare** was the top reason for women leaving as women found it difficult to balance paid work with unpaid care responsibilities.
- *Upward mobility for women within the industry is limited*, where about **86%** of women garment workers joined the factory as helpers, **66%** left as operators and **only 1% as supervisors**.
- The increasing number of skilled women workers leaving the industry is likely to impact productivity, lead to delays, and increase subcontracting risks.
- 12% females are less likely to leave if they receive **training for automation** (ETI¹¹).

⁷ <https://www.bb.org.bd/pub/quarterly/rmg/rmg%20quarterly%20oct-dec%20fy24.pdf>

⁸ ACD Survey (2020) <http://acdonline.org/wp-content/uploads/2021/03/ACD-Report-on-garment-workers2020.pdf>

⁹ <https://etibd.org/wp-content/uploads/2023/03/ResearchReport-GIZ-ETI-BRACU.pdf>

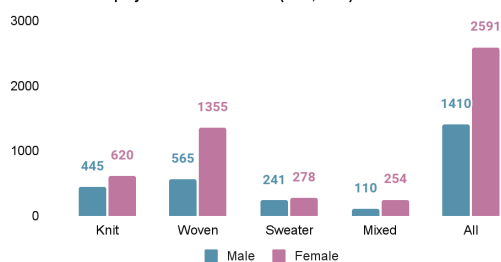
¹⁰ https://www.ethicaltrade.org/sites/default/files/shared_resources/ETI_GIZ%20Study%20on%20Women%20Workers.pdf

¹¹ https://www.ethicaltrade.org/sites/default/files/shared_resources/ETI_GIZ%20Study%20on%20Women%20Workers.pdf

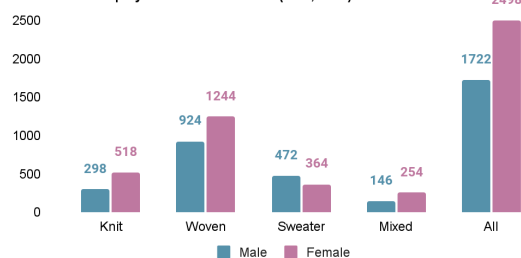
Factory type	2020			2015		
	Male	Female	Total	Male	Female	Total
Knit	2,98,000	5,18,000	8,16,000	4,45,000	6,20,000	10,65,000
Woven	9,24,000	12,44,000	21,68,000	5,65,000	13,55,000	19,20,000
Sweater	4,72,000	3,64,000	8,36,000	2,41,000	2,78,000	5,19,000
Mixed	1,46,000	2,54,000	4,00,000	1,10,000	2,54,000	3,64,000
All	17,22,000	24,98,000	42,20,000	14,10,000	25,91,000	40,01,000

Data Source: ACD Survey 2020

Gender-wise Employment in RMG Sectors (ACD, 2015) in thousands



Gender-wise Employment in RMG Sectors (ACD, 2020) in thousands



The ACD surveys (2015 vs. 2020) show a decline in female employment within the knit and woven segments of the RMG industry.

B. Role of Human Labour in the RMG Industry

Bangladesh's RMG industry thrives on its human capital driving efficiency, social impact, and economic growth. As it evolves, technology and innovation **complement** this human foundation, ensuring competitiveness and sustainability.

Employment Generation and Skill Development

The industry's labor-intensive nature creates job opportunities at various skill levels, fostering skill development and contributing to overall poverty reduction.

Economic Growth Contribution

The RMG sector is the backbone of our exports, thanks to the tireless efforts of its workers. This role of human labour translates to **increased exports, foreign currency inflow, and government revenue.**

Social Impact and Empowerment

The RMG boom empowered many women, especially from rural areas, by offering financial independence, source of income, healthcare, and a **path to social mobility.** Before this, female labor participation was very **low**, according to World Bank¹².

C. Challenges related to Workforce in RMG Industry

¹²

<https://www.worldbank.org/en/news/feature/2012/03/08/womens-day-2012-empowering-women-in-bangladesh#:~:text=The%20garment%20industry%20accounted%20for,stopping%20more%20girls%20from%20coming.>

Lack of Skilled Workforce	The RMG sector lacks up-to-date training resources and qualified instructors, setting back skilled workforce development. Bangladesh's National Employment Policy (NEP) 2022 outlines 11 key challenges in building a skilled workforce.
Job Creation	Despite a massive surge in garment exports, Bangladesh's RMG industry hasn't seen a significant increase in jobs (stuck around 3.5-4 million). Industry experts often point to automation and the use of labor-saving technologies for this lack of job creation. ¹³
Payment	Bangladeshi garment factories supplying British fashion brands are reportedly underpaid (below the cost of production) , according to a joint study by the University of Aberdeen and Transform Trade ¹⁴ . Factories often also delay months of wages and festival bonuses to the workers. ¹⁵
Informal Contract	A vast majority (92%) of Bangladeshi garment workers lack written contracts, compared to neighboring countries (Pakistan: 90%, India: 65%). Registered factories often rely on unregistered subcontractors with limited government or brand oversight, leading to concerns about exploitation. ¹⁶
Women in informal garment work are particularly at risk due to:	<ul style="list-style-type: none"> • Job insecurity: Fear of losing jobs due to informality. • Age discrimination: Difficulty finding work after 35. • Abuse: High prevalence of unfair practices. • Unsafe work environments: A staggering 91% reported unsafe conditions (GFEMS 2022).¹⁷
Nature of Work	<ul style="list-style-type: none"> • Nearly a third (29%) of RMG workers stand while working. • More men (21%) than women (13%) stand or sit at work.¹⁸ • Automation and higher wages led to higher expected output from workers (200-250 pieces per day) but feasible output was much lower (100-150 pieces per day)¹⁹.

D. Automation and AI (Artificial Intelligence) have arrived in the RMG Industry²⁰

Automation in Fabric Inspection: Invention of online automated inspection systems has mitigated the major issues related to quality control as human error has often led to inaccuracies and inefficiencies in the inspection process	Design and Prototyping: 3D scanners can help create better fitted clothes using digital models to modify garment designs and quick sampling.
---	--

¹³ <https://www.thedailystar.net/business/economy/news/robust-growth-rmg-not-reflected-job-creation-3353631>

¹⁴ <https://rmgbd.net/2022/12/73-rmg-workers-want-new-machines-for-efficiency-quality-sanem/>

¹⁵ <https://www.tbsnews.net/economy/rmg/one-fourth-factories-delay-march-salaries-eid-bonus-outstanding-462-826131>

¹⁶ https://asia.floorwage.org/wp-content/uploads/2024/03/AFWA_Threaded_Insecurity.pdf

¹⁷ Global Fund to End Modern Slavery (GFEMS 2022), Forced Labour Among Informal Apparel Workers in Apparel Hubs of Bangladesh: A Prevalence Estimation Report.

¹⁸ ACD Survey (2020)

¹⁹ https://www.ethicaltrade.org/sites/default/files/shared_resources/FTI_GIZ%20Study%20on%20Women%20Workers.pdf

²⁰ <https://nibmehub.com/opac-service/pdf/read/Automation%20in%20Garment%20Manufacturing.pdf>

<p>Fabric Handling and Cutting: Automated machines can now precisely spread fabric layers and cut out garment pieces with minimal waste.</p>	<p>Sewing: Sewing is mostly manual, but some factories use robots for speed. New robots handle specific tasks, while others aim to sew entire garments. These robots have limitations in fabric types and require special techniques. 3D sewing might be the future for complex, high-quality clothes. Example: Sewbo robot, developed by Zornow (which costs \$35,000), can make a T-shirt in just 4 minutes.²¹</p>
<p>Pressing: Ironing clothes in garment factories is a tough, manual job usually done by men with high turnover. While some fancy pressing robots exist, most factories haven't adopted them.</p>	<p>Use of radio-frequency identification: Clothes tags with chips (RFID) can track garments real-time. This helps factories manage inventory better by streamlining supply chain management using automated sorting systems. For instance, tags on fabric bundles can show what kind of fabric it is, the style, and color.</p>

As more tasks are automated, respondents from a **McKinsey report** expect to see growing demand for new skills. **Training and reskilling is important to automation success.** Simply pursuing automation technologies to reduce expenses is not sufficient.²²

E. Advantages of Human Labour and Automation in RMG:

Human Labour Advantages	Automation & AI Advantages
<p>Manual Manufacturing Processes: Production relies on manual skills, especially with the hands of workers for tasks like cutting, sewing, and finishing clothes.</p>	<p>Increase in productivity: It is estimated that 40 to 70 percent of labor time can be reduced through automation²³.</p>
<p>Technical Proficiency: Proficiency in garment manufacturing techniques, such as stitching, embroidery, and pattern-making, as well as knowledge of industry-specific processes and standards.</p>	<p>Increased inventory turnover: Rapid production cycle of fast fashion, growing a competitive edge over other manufacturers.²⁴</p>
<p>Adaptability: Human labor offers flexibility in responding to changing market demands, fashion trends, and production requirements, adjusting to variations in garment styles, sizes, and specifications.</p>	<p>Replacement of repetitive and monotonous work: New machines shape, cut, and attach belt loops simultaneously, which was a slow and manual task before consisting of multiple steps, saving time, labor costs, and reducing errors.</p>
<p>Emotional Intelligence and Communication: Needed to navigate diverse people coming to work in the industry from different socio-economic backgrounds and age groups.</p>	<p>Achieving Manufacturing Consistency: Minimizing product and batch variability leading to higher quality standards and a reduction in the need for rework activities.</p>
<p>Cost-Effectiveness: Bangladesh's point of advantage comes from its large production capacity at a low price and acceptable quality.</p>	<p>Performing jobs beyond human capability: Juki offers sewing machines that are capable of automatically sewing buttons and creating buttonholes.²⁵</p>
<p>Quality Control: Human workers can visually inspect and assess the quality of finished products with precision and accuracy, ensuring that only high-quality garments are shipped to customers.</p>	<p>Reduction of direct human labor costs and overheads: In some cases, automation has reduced the number of laborers by almost 50-60% and in some cases up to 90%²⁶.</p>
<p>Socio-economic Considerations: Employing human labor in the RMG industry contributes to job creation and poverty reduction in Bangladesh, and an</p>	<p>AI can help in predicting the fabric properties and fabric fault detection: A new method breaks down the fabric image into "cartoon"</p>

²¹ [This new sewing robot will put 168 million children out of work](https://www.311institute.com/this-new-sewing-robot-wi...)^{311institute.com}<https://www.311institute.com/this-new-sewing-robot-wi...>

²² <https://www.mckinsey.com/capabilities/operations/our-insights/your-questions-about-automation-answered>

²³ <https://www.mckinsey.com/featured-insights/asia-pacific/boosting-vietnams-manufacturing-sector-from-low-cost-to-high-productivity>

²⁴ [The Role of Automation in Apparel Logistics](https://www.rovaleinternational.com/2023/08/the-ro...)^{Rovale International}<https://www.rovaleinternational.com/2023/08/the-ro...>

²⁵ <https://www.fibre2fashion.com/industry-article/9797/revolution-in-garment-industry-advancement-in-cutting-and-sewing>

²⁶ [Automation and Robotics are Blessings in Apparel Industry](https://textilefocus.com/.../Tech&Machinery)^{Textile Focus}[https://textilefocus.com/.../Tech & Machinery](https://textilefocus.com/.../Tech&Machinery)

overall socioeconomic development.

(smooth areas) and "texture". Defects show up clearly in the texture, allowing for easy detection and classification based on size, shape, and intensity²⁷.

F. Challenges of Adoption of Automation in Bangladesh's RMG

Lagging Adoption	Limited Investment	Focus on Low Cost	Skills Gap in Automation
<p>About 62% of the RMG workers in Bangladesh operate machines at work²⁸. Financial payback on automation is around five years in Bangladesh (in comparison to around 1.5 years in China²⁹). Competitors are way ahead:</p> <ul style="list-style-type: none"> • India with SewBot technology³⁰ • Vietnam with Cobots for repetitive tasks³¹. Global brands like Uniqlo are implementing robotic cutting technology in Vietnam. • China with smart clothing, manufacturing and robotic arms.³² 	<p>The high upfront costs of advanced technologies like 3D printing and Augmented Reality might make them less accessible for Bangladeshi manufacturers compared to competitors with potentially larger budgets.</p>	<p>Bangladesh's RMG industry has traditionally focused on being a low-cost producer.</p> <p>This might lead to hesitation in adopting expensive automation solutions.</p>	<p>Workers lack expertise due to continuous advancements in machinery. While 68% of RMG workers received training, nearly half (44%) had only 1 day, and just 13% trained for 6 months³³.</p> <p>Automation is also not strategically planned, new machines are acquired based on immediate needs³⁴.</p>

G. Automation in Bangladesh's RMG ³⁵

Automated Knitting and Yarn Management

- **Mohammadi Group's** knitting process is fully automated³⁶.
- **Envoy Textiles**, a denim manufacturer, leverages robotics to boost production and product quality for effective yarn management³⁷.

Precision Dyeing and Chemical Dispensing

- **DBL Group** has adopted automated systems for dyeing and chemical dispensing, ensuring accurate use and minimizing waste. In the sewing lines, they use energy-efficient servo motors

²⁷ <https://www.textiletoday.com.bd/artificial-intelligence-on-fashion-and-textiles-in-2023>

²⁸ ACD Survey (2020)

²⁹ <https://rmgbd.net/2023/07/automations-role-in-rmg-production-remains-uncertain/>

³⁰ [Leading in the Digital Age Readymade GarmentsSSRNhttps://papers.ssrn.com/sol3/Delivery.cfm/S...](https://papers.ssrn.com/sol3/Delivery.cfm/S...)

³¹ <https://swissep.org/our-impact/success-stories/apico-robotics-leading-the-way-in-robot-manufacturing-in-vietnam#:~:text=In%20Vietnam%2C%20cobots%20have%20found,from%20monotonous%20and%20repetitive%20jobs>

³² <https://rmg-study.cpd.org.bd/china-upgrading-industrial-production-smart-technology/>

³³

³⁴ [https://www.fibre2fashion.com/news/apparel-news/poor-productivity-in-bangladesh-rmg-leather-sectors-due-to-skill-gaps-287713-newsdetails.htm#:~:text=of%20foreign%20currency,A%20substantial%20gap%E2%80%94ranging%20between%2045%20per%20cent%20and%2070,Studies%20\(BIDS\)%20have%20revealed](https://www.fibre2fashion.com/news/apparel-news/poor-productivity-in-bangladesh-rmg-leather-sectors-due-to-skill-gaps-287713-newsdetails.htm#:~:text=of%20foreign%20currency,A%20substantial%20gap%E2%80%94ranging%20between%2045%20per%20cent%20and%2070,Studies%20(BIDS)%20have%20revealed)

³⁵ <https://www.lightcastlebd.com/insights/2023/11/securing-jobs-in-apparel-industry/>

³⁶ <https://www.lightcastlebd.com/insights/2023/07/4ir-in-the-apparel-industry/>

³⁷ <http://rmg-study.cpd.org.bd/automation-threatens-jobs-garment-workers-bangladesh/>

³⁷ <https://textileexcellence.com/single-news/2097/bangladeshi-denim-manufacturer-envoy-textiles-embraces-robotics-to-raise-output>

rather than conventional clutch motors and an Eco Booster, a cutting-edge heat recovery device that cleans itself automatically. They also use AutoDosing for controlled measures of chemicals to achieve optimum results³⁸.

AI-powered Fabric Optimization

- **Beximco Group** utilizes ThreadSol software with AI to optimize fabric utilization, reducing waste.³⁹

Advanced Printing Technology

- **Robintex Group**, a German-Bangladesh joint venture, boasts the world's fastest single-pass digital printing machine for high-quality AOP printing, which has reduced lead time by 2-3 weeks, and the company can ship orders within 4-5 weeks.⁴⁰

Productivity

- **Team Group**, with their LEED-certified factory implemented a semi-automated production line. This approach has resulted in a significant boost of 10-15% in productivity, time management, and cost-effectiveness.
- **Masco Knitting**, part of the Masco Group, utilizes a combination of advanced software-supported circular and rib-knit machines. This ensures their production capabilities remain up-to-date and meet the ever-changing demands of the industry.

H. Is Automation Causing Job losses?

According to World Bank data, the number of new jobs added by the garment and textile industry has fallen to **60,000 a year**, from over 300,000 annually between 2003 and 2010⁴¹. In Bangladesh, **the pace of job creation has fallen too**⁴². According to BBS, total employment in the manufacturing sector fell from 9.5 million in 2013 to 8.6 million in 2016, shrinking the employment by 1 million despite adding more than 450 billion BDT output.

One significant factor that **slowed down job creation** is the **automation of low-skilled repetitive and dangerous jobs** in the ready-made garments (RMG) sector, according to ILO⁴³.

Rising wages for low-skilled workers incentivize automation. Bangladesh's dependence on RMG makes this a major concern, as the industry might not always absorb the same number of workers, according to ADB⁴⁴.

Possible Number of Job Loss by 2041 in RMG Sector:

³⁸ https://cms.dbl-group.com/document/view/39/DBL_Sustainability_Report_2022.pdf/

³⁹ <https://ibtbd.net/threads-of-future/>

⁴⁰ <https://textiletoday.com.bd/buyers-confidence-overall-business-process-leads-get-30-order-pandemic>

⁴¹ <https://www.wsj.com/articles/the-robots-are-coming-for-garment-workers-thats-good-for-the-u-s-bad-for-poor-countries-1518797631>

⁴² <https://www.worldbank.org/en/news/feature/2017/09/27/bangladesh-development-update-more-better-and-inclusive-jobs-can-boost-growth>

⁴³ <https://www.ilo.org/publications/bangladesh-country-assessment-and-priorities-caps-skills-strategy>

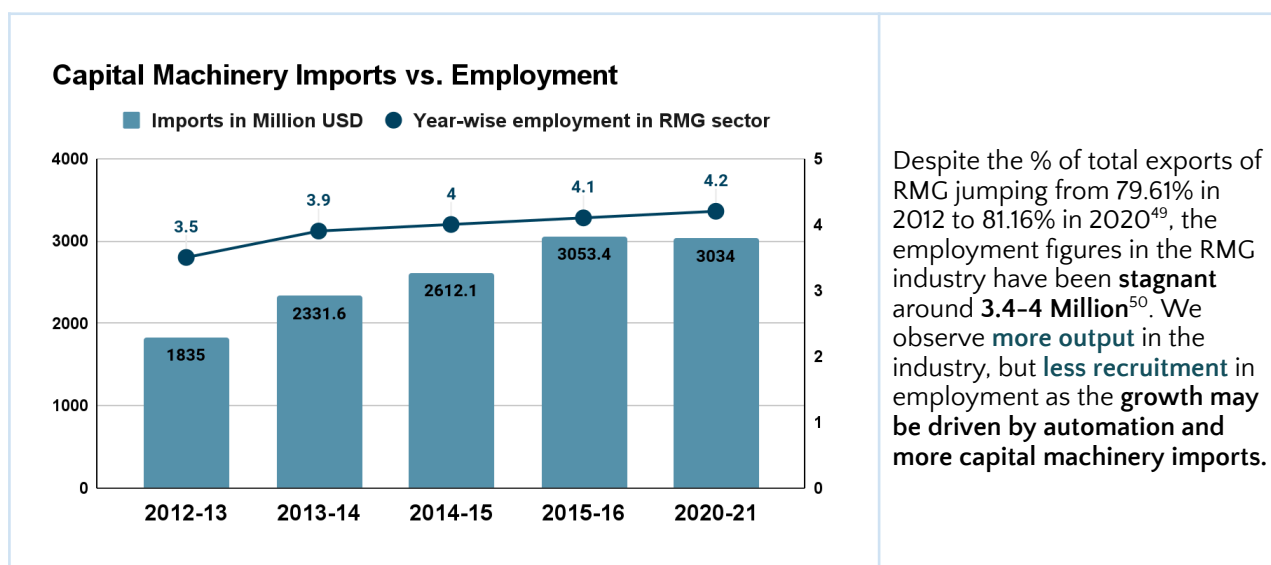
⁴⁴ <https://www.adb.org/sites/default/files/publication/190589/ban-beyond-garments-eds.pdf> pg. 48

Occupations	Possible Number of Job Loss by 2041
Sewing operators who operate single needle lockstitch machine, double needle lockstitch machine, single and double needle chain stitch machine, Sewing Machine Mechanic (Level 1): Skills which can be acquired with short modular and focused intervention and thereby enhancing the employability of those with minimal education.	500,000
Floor Supervisor, Pattern Maker (Level 2): Skills which require technical training inputs, knowledge of complex operations and machinery, skills of supervision, floor supervisor, pattern maker fall under this category	10,000
Pattern Making for Knitwear, Quality Control, Production Planner, Merchandiser (Level 3): Skills which requires long drawn preparation as demonstrated by the acquisition of degrees and involve highly technical capabilities	10,000
Fashion Designer, CAD-CAM Operator, Portfolio Developer, Production Planner and Controller (Level 4): Skills which are highly specialized and require research and design.	5,000

SOURCE: - A2i PROGRAMME, GOVERNMENT OF BANGLADESH, 2019⁴⁵

While RMG has spearheaded the growth of formal, paid jobs, especially for women, **its share in total employment is static or declining**. Hence, while the share of manufacturing employment is steadily increasing, it is still far too low to ensure any structural transformation⁴⁶.

I. Stagnant or Declining Job Growth due to Automation



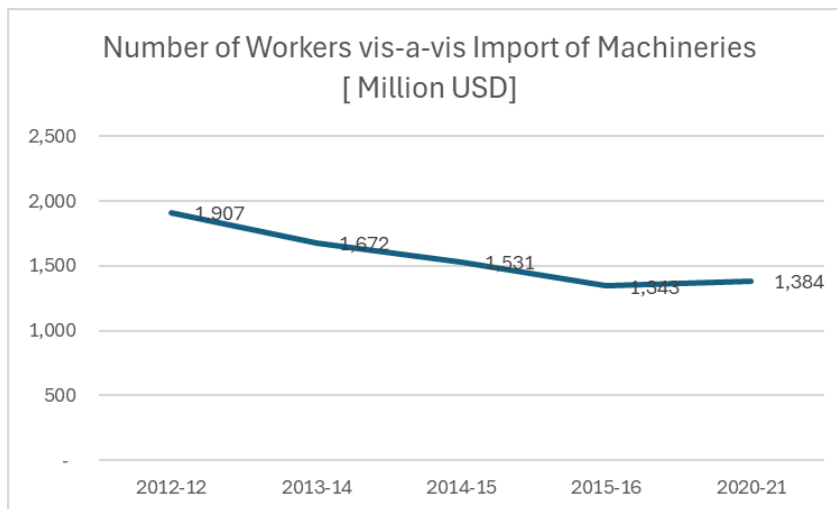
⁴⁵ <https://a2i.gov.bd/wp-content/uploads/2022/08/4IR.pdf>

⁴⁶ <https://cpd.org.bd/resources/2018/08/CPD-Working-Paper-118-Growth-of-Employment-in-the-Manufacturing-Sector.pdf>

⁴⁹ https://www.bgemea.com.bd/page/Export_Performance

⁵⁰ <https://rmgbd.net/2023/06/robust-growth-in-rmg-not-reflected-in-job-creation/>

Source: Imports of Capital Machinery: BB | Employment in RMG: Figure 2.^{47, 48}

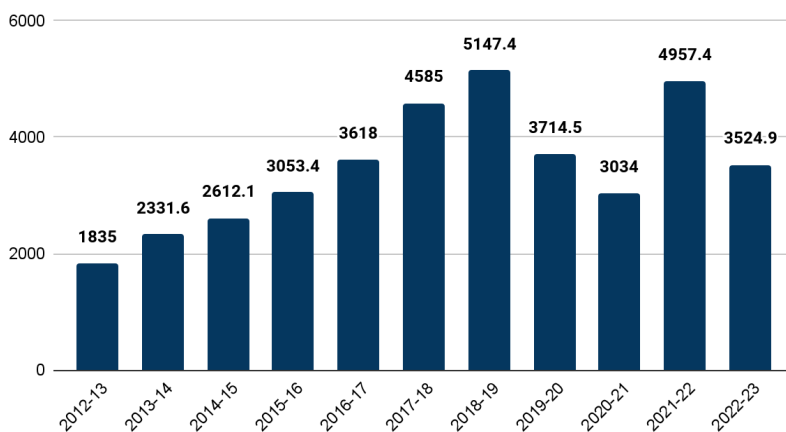


A decreasing ratio of workers vis-a-vis capital machinery import shows that the RMG industry is likely to be becoming less labour-intensive over the years. The need for official employment figures over more years of the RMG industry is still crucial in understanding the trend.

Import of Machinery and Number of Jobs per Million USD Ratio

After dividing the RMG Employment Data in Millions by Capital Machinery Imports, the ratio can help us deduce whether the industry is becoming more labour-intensive or capital-intensive.

Capital Machinery Imports (In million USD)



On another note, a decline in capital equipment imports means a decline in new investment in the industry. It brings down industrial production and hits the employment sector hard. When there is no increase in industrial investment, no new employment will be generated⁵³.

Source: Bangladesh Bank: 2.2.7 Historical imports by commodity⁵¹

Research shows that capital machinery import and private sector credit can significantly promote industrial output growth⁵².

J. Predictions for the Role of Human Labor and AI

Technology adoption and upgradation will need to be incentivised and encouraged. Additionally, support should be provided for the development of robust backward linkages in the non-cotton apparel sector⁵⁴.

⁴⁷ https://www.researchgate.net/publication/316840587_Readymade_Garment_Industry_in_Bangladesh_Growth_Contribution_and_Challenges

⁴⁸ https://www.researchgate.net/figure/Year-wise-employment-in-RMG-sector_fig2_316840587

⁵¹ <https://www.bb.org.bd/en/index.php/econdata/impindex>

⁵² https://www.researchgate.net/publication/336847180_Capital_Machinery_Import_and_Industrial_Output_Growth_in_Bangladesh_A_Co-integration_Analysis

⁵³ <https://en.prothomalo.com/business/local/01on71fioh>

⁵⁴ <https://cpd.org.bd/intra-rmg-diversification-the-next-frontier/>

While automation may lead to job losses, it can also create new opportunities. Machines will require operators, repair technicians, and maintenance personnel. New job titles that will emerge include **"bot trainer," "bot farmer," and "bot curator"**. Higher-order skill jobs will continue to be performed by humans, and workers can acquire these skills to earn higher wages⁵⁵.

The Bangladeshi government's Skills for Employment Investment Program (SEIP) aims to enhance Technical and Vocational Education Training (TVET) and Technical Training Centers (TTC) infrastructure to prepare workers for automation⁵⁶.

What's ahead?

- **Data Analytics and Forecasting:** Analyze data from various sources, including sales trends, customer preferences, and production efficiency, to optimize decision-making processes.
- **Sustainable Practices:** Automated cutting systems can minimize fabric wastage, while energy-efficient machinery and processes contribute to reducing the environmental footprint of garment production.
- **E-commerce Integration:** Enabling efficient order processing, inventory management, and fulfillment for e-commerce retailers.

K. Defeminization due to Automation

Economists Sheba Tejani and William Milberg identified a **global defeminization trend due to industrial upgradation**. Their research shows that capital intensity in production, as evidenced by shifts in labour productivity, is negatively and significantly related to shifts in the female share of employment in manufacturing⁵⁷.

“Women in repetitive tasks are particularly **vulnerable**, while new jobs created might favor men with technical skills.

A study by CPD found automation in garment factories is **reducing female worker participation** (from 64% in 2015 to 60.8% in 2016). Factory owners see them as *less suited for new machinery*. Female workers are **proportionately less knowledgeable about operating different machines compared with their male counterparts**, according to the study prepared by surveying 193 garment enterprises and 2,123 workers⁵⁸. Except single needle and double needle machines, female workers are behind male workers in operating machines.

ETI study also found that the percentage of women workers decreased in cutting and sewing processes, whilst the **average number of machines increased**⁵⁹.

0.5%

of managers in RMG enterprises are female
(Grade I)

9.3%

of HR managers in RMG enterprises are
female
(Grade II)

⁵⁵ <https://www2.deloitte.com/content/dam/Deloitte/de/Documents/human-capital/2018-Global-%20Human-Capital-Trends-AL-%20robotics-automation.pdf>

⁵⁶ <https://doi.org/10.1097/01.HS9.0000890704.84054.de>

⁵⁷ [PDF | Global Defeminization? Industrial Upgrading and ... ResearchGate](https://www.researchgate.net/publication/29051047...)<https://www.researchgate.net/publication/29051047...>

⁵⁸ <https://rmgbd.net/2018/03/women-losing-more-jobs-to-automation-cpd-study/>

⁵⁹ https://www.ethicaltrade.org/sites/default/files/shared_resources/ETI_GIZ%20Study%20on%20Women%20Workers.pdf

L. What do RMG Industry leaders have to say about Automation?

	<h3>Belayet Hossain</h3> <p><i>Chairman at Eurotex Knitwear Ltd.</i></p> <p>Over the past four years, we've embraced automation in 30% of our processes, achieving greater efficiency without a single layoff. Our philosophy? Reskilling, not replacement. By investing in continuous training for our employees, we empower them to adapt and thrive alongside automation. In fact, automation creates opportunities for us to build capacity and take on more complex tasks.</p>
	<h3>Shams Mahmud</h3> <p><i>Director, BGMEA & Managing Director, Shasha Garments Ltd.</i></p> <p>While automation's impact on overall employment hasn't been significant yet, it has affected the sweater industry. The upcoming years are likely to see a disruption with the rise of process automation and Enterprise Resource Planning (ERP) software adoption. These advancements will streamline corporate tasks, potentially leading to job losses in administrative and data entry roles.</p> <p>Our current curriculum training for RMG workers, based on UK textbooks, focuses heavily on machinery. However, leading competitors in Turkey and India prioritize understanding cotton properties and invest heavily in R&D. This outdated approach puts us at a disadvantage.</p> <p>We need a radical overhaul of the curriculum to focus not just on machinery but in-depth knowledge of cotton, along with increased investment in R&D to compete effectively in the global market.</p>

⁶⁰ <https://rmg-study.cpd.org.bd/only-0-5-managers-in-bangladeshi-rmg-enterprises-are-female/>