

GLOBAL INFORMATION SOCIETY WATCH 2019

Artificial intelligence: Human rights, social justice and development



ASSOCIATION FOR PROGRESSIVE COMMUNICATIONS (APC),
ARTICLE 19, AND SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY (SIDA)

Global Information Society Watch

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Global Information Society Watch 2019

Artificial intelligence: Human rights, social justice and development

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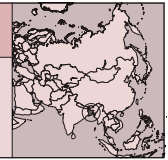
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Introduction

Artificial intelligence (AI) can enhance productivity through automation, machine learning and precision. But to automate tasks through an intelligent system that can reduce time, costs and the need for labour also has the potential to diminish jobs. This is the case in the ready-made garments (RMG) sector in Bangladesh. As commentators have put it:

Changes to the garment industry's business model are threatening the livelihoods of millions of people in low- and middle-income countries, and how these economies adapt will have far-reaching implications.¹

In particular, female workers, who are at the bottom of the production process and are often engaged in repetitive tasks, are at the greatest risk of losing their jobs in this sector.

Bangladesh is the world's second-largest exporter of garments (after China). The RMG sector in Bangladesh employs 2.5 million female workers in around 4,000 factories across the country² and generates 80% of total exports in Bangladesh,³ contributing approximately 16% to the GDP.⁴ As a result, any technology disruption in this sector will have a long-term impact, not only on the sector's production processes and outputs, but also on the workforce employed in the sector. This report explores the impact of AI on the RMG sector in Bangladesh from a rights and development perspective.

Context

Female workers in the RMG sector are mostly involved in the labour-intensive tasks of product development, such as marking and spreading fabric, cutting, sewing, ironing, finishing, tagging and packaging. A study done by the Manusher Jonno Foundation⁵ on garment workers in Dhaka and Gazipur found that 72.7% of them do not have any signed contract with their employer. The same study also found that more than 50% of the workers do not even get a salary on time (by the 7th of each month, as per the labour code of Bangladesh).⁶ RMG factories in Bangladesh are also known for their unsafe working environments. The collapse of buildings, factory fires, and other incidents in the sector claimed at least 1,512 workers' lives between 2005 and 2013, while 1,691 workers were killed between 1990 and 2013.⁷

Different RMG factories in Bangladesh currently use different advanced technologies for production and supply chain processes. For example, computer-aided design (CAD) tools are being used to expedite product design and development processes, to maximise the use of fabric and to reduce laundry costs. CO₂ dyeing technology uses reclaimed CO₂ in the dyeing of fabrics, eradicating the need for chemicals and water and resulting in a massive reduction in the consumption of energy.⁸

Around 70% of the total manufacturing cost of an apparel product is fabric. The use of tools such as CAD can bring the production cost down by almost 10%.⁹

Technology adoption is directly related to factory size. According to a study by the Centre for Policy Dialogue, the use of advanced technologies in the

- 1 Deegahawathura, H. (2018, 8 June). The Garment Industry's Technology Challenge. *CPD RMG Study*. <https://rmg-study.cpd.org.bd/the-garment-industrys-technology-challenge>
- 2 Uddin, M. (2018, 10 September). Artificial Intelligence in RMG: What's in store for Bangladesh? *The Daily Star*. <https://www.thedailystar.net/opinion/perspective/news/whats-store-bangladesh-1631515>
- 3 LightCastle Partners. (2018, 27 September). RMG and textile sectors in Bangladesh. *DATABD.CO*. <https://databd.co/stories/rmg-and-textiles-sector-in-bangladesh-526>
- 4 Uddin, M. (2018, 10 September). Op. cit.

- 5 www.manusherjonno.org
- 6 The Daily Star. (2018, 17 July). The situation of women workers in the RMG sector in Bangladesh. *The Daily Star*. <https://www.thedailystar.net/round-tables/the-situation-women-workers-the-rmg-sector-bangladesh-1606447>
- 7 Mobarok, F. (2014, 24 April). 1,841 workers killed in 12 yrs. *The Daily Star*. <https://www.thedailystar.net/1-841-workers-killed-in-12-yrs-19973>
- 8 Uddin, M. (2019, 23 March). Technology and Sustainability in RMG. *Dhaka Tribune*. <https://www.dhakatribune.com/opinion/op-ed/2019/03/23/technology-and-sustainability-in-rmg>
- 9 Ovi, I. H. (2017, 27 November). RMG factories turn to technology to maintain competitive advantage. *Dhaka Tribune*. <https://www.dhakatribune.com/feature/tech/2017/11/27/rmg-sector-software-cutting-technology>

RMG sector is prevalent in 47% of large-scale RMG enterprises, compared to 25% of medium-scale RMG enterprises.¹⁰

AI and automation technologies are also slowly being adopted by RMG factories, not only because of AI's time-, cost- and resource-saving properties, but also because of its game-changing nature in the RMG business model, as many garment factory owners have said. For example, as a representative of the RMG sector explained:

AI's powerful vision and image recognition system can easily help in identifying and grading textile fibres. AI can enable accurate performance during cutting, spreading and sewing. CAD and pattern-making, production planning and control, shop floor control systems – all these can be performed at a much higher level of productivity and accuracy with AI technology.¹¹

Artificial neural networks (ANN) are also used in different garment manufacturing facilities, including for the prediction of fabric mechanical properties, the classification and grading of fabrics, and the identification and analysis of faults.

Labour rights and the impact of AI

Given that the productivity benefits of AI are becoming evident, it is important to see how it is likely to affect the existing labour force and will have far-reaching implications for the Bangladesh economy. A study done by Access to Information (azi) in Bangladesh and the International Labour Organization (ILO) estimated that more than two million or 60% of jobs in the RMG sector in Bangladesh may disappear by 2040 due to automation.¹² This study identified the RMG sector as one of the most affected sectors due to AI and automation. Another study from a think tank in Bangladesh, the Centre for Policy Dialogue, shows that the automation of manufacturing reduced the participation ratio of female workers in the garment sector to 60.8% in 2016 from 64% in 2015. The study also shows that the factory owners think female workers are not able to handle modern machinery properly.¹³

Bangladesh still does not have any formal policy on AI implementation in any sector, let alone the RMG sector. Recently, the government's Information and Communications Technology (ICT) Division took steps towards formulating a national strategy for AI, and a draft outline of that strategy has been released. The strategy¹⁴ has identified eight strategic pillars for the future implementation of AI in Bangladesh, from 2020 until 2025: AI in the government; the industrialisation of AI technologies; data and digital infrastructure; skilling the AI workforce; research and development; funding and accelerating the AI ecosystem; inclusive and diverse AI; and ethics, data privacy and security. The strategy tries to explain key issues raised by the implementation of AI in different areas, including AI in citizen service delivery, AI in manufacturing, AI in agriculture, AI for smart mobility and transportation, AI for skills and education, AI for finance and trade, AI for health, and AI for the environment, water and renewable energy. Interestingly, the strategy does not touch upon the issue of job losses and how and when the existing workforce who may lose their jobs due to the implementation of AI would be compensated or redeployed through training or skills development. Apart from this, aspects such as data privacy, security, and the need for regulations identified in the strategy are crucial for AI.

There are different opinions in the country with regard to AI and automation. For example, Dr. Atiur Rahman, ex-governor of Bangladesh Bank, the central regulatory bank in Bangladesh, says that the "collaboration of humans and robots could integrate technological innovation into the apparel industry in Bangladesh."¹⁵ He thinks AI is a pathway to integrate a great number of unskilled production workers into a structurally difficult labour market that depends on foreign investment.

Some also argue that any new technology advancement, while it may make some jobs redundant, may also bring in new types of jobs that did not exist before which nevertheless may require new skill sets. As traditional factory jobs evolve, technology-servicing roles will become more important. Just as sewing machines break and need calibration, so, too, will the apparel printers and packaging systems of the future.¹⁶ There is also an emphasis on technology companies

10 Saadat, S. Y. (2019, 19 January). Employment in the age of automation. *The Daily Star*. <https://www.thedailystar.net/opinion/perspective/news/employment-the-age-automation-1689487>

11 Uddin, M. (2018, 10 September). Op. cit.

12 The Daily Star. (2018, 21 December). Automation to cut 53.8 lakh jobs by 2041: study. *The Daily Star*. <https://www.thedailystar.net/business/news/automation-cut-538-lakh-jobs-2041-study-1676683>

13 The Daily Star. (2018, 4 March). Women losing more jobs to automation: CPD study. *The Daily Star*. <https://www.thedailystar.net/business/women-losing-more-jobs-automation-cpd-study-1543222>

14 Alam, S. (2019, 12 April). Development of National Strategy for Artificial Intelligence, Bangladesh. *Medium*. <https://medium.com/@shofialalam/development-of-national-strategy-for-artificial-intelligence-bangladesh-57bcf09ccaf>

15 Fibre2Fashion. (2018, 12 February). Slowly adopt AI in Bangla RMG sector: ex-central bank chief. *Fibre2Fashion*. <https://www.fibre2fashion.com/news/apparel-news/slowly-adopt-ai-in-bangla-rmg-sector-ex-central-bank-chief-240555-newsdetails.htm>

16 Deeghawathura, H. (2018, 8 June). Op. cit.

working more collaboratively with the apparel industries to manage AI and automation platforms. The question is obviously to understand whether new jobs will match the rate of worker lay-offs and whether or not the country can keep pace with the skills gaps and training required to acquire new skills.¹⁷

Labour standards and labour rights at the RMG factories in Bangladesh paint a very dismal picture. There are three core concerns: wages, access to unions and workplace safety. According to a 2016 ILO survey, the highest number of suppliers who felt compelled to accept orders below production costs came from Bangladesh. This directly affects workers' wages and other working conditions.¹⁸ Union membership among Bangladeshi garment workers is low – estimations range from 5% to 10% – while unionisation is banned entirely in the few export processing zones.¹⁹

The amended Labour Act of 2013²⁰ in Bangladesh incorporated provisions including the right for workers to form trade unions without getting the approval of owners, establishing safety measures for employees in the workplace, creating safety committees, establishing workplace health centres, and enabling inspectors to visit factories to assess compliance and to penalise owners if necessary.²¹ With the introduction of this amended law, more than 300 trade unions were registered in the RMG sector by April 2015.

The government created another amendment to the Labour Act in 2018, which has already been approved by cabinet. It reduces the requirement of worker participation to set up a trade union from 30% to 20%. It also suggests that the working hours of labourers in general should not be more than 10 hours a day, excluding meal and rest time, and introduces mandatory maternity leave and other leave for expectant mothers.²²

In an official circular, the Ministry for Labour and Employment announced the increase of minimum

wages for garments workers to 8,000 taka (about USD 95) a month – it was 5,300 taka (USD 63) previously. This is also far less than the 16,000 taka (USD 200) that the workers' unions have been asking for.²³ The 2006 Labour Act – which as discussed above was amended in 2013 and 2018 – deals with issues such as job termination, lay-offs and the responsibilities of workers in the workplace. These provisions may be important in the context of technology in the workplace.

As per this Act, workers have some rights in cases where they are laid off by the employer. Whenever a worker whose name is on an employer's master roll of workers, and who has completed at least one year of continuous service, is laid off, they need to be paid compensation by the employer for the days when they are without work. The amount of compensation needs to be equal to half of the total of the basic wage received plus dearness allowance²⁴ and ad hoc or interim pay if any. Any worker whose name is not on the master roll would not receive anything. Re-employment of retrenched workers is also possible depending on whether the worker is asked to do the same job or a job in the same category within a year. Retrenched workers, according to their length of service, will have higher priority for re-employment over other workers, such as non-contractual and casual workers.²⁵

Recent research²⁶ into the sector found that RMG factories provide few training and development opportunities for their workers outside of the immediate demands of their job. Only 5% of respondents confirmed that they have training facilities for their employees. Training for supervisors is nevertheless common (70%). Worker development depends to a great extent on learning on the job. General workers are recruited as non-skilled workers and learn the necessary work techniques under close supervision of the floor supervisors. As a result, the companies use the supervisors to develop the workers and ensure quality. Skill training institutes for garment workers are rare and, as a result, workers in many cases feel frustrated: 86% of worker respondents reported that there are no training institutes available for developing their knowledge and capability.²⁷

17 Uddin, M. (2018, 10 September). Op. cit.

18 Kashyap, A. (2019, 1 May). Rights makeover overdue in Bangladesh garment industry. *The Daily Star*. <https://www.thedailystar.net/opinion/human-rights/news/rights-makeover-overdue-bangladesh-garment-industry-1737301>

19 Ashraf, H., & Prentice, R. (2019). Beyond factory safety: labor unions, militant protest, and the accelerated ambitions of Bangladesh's export garment industry. *Dialectical Anthropology*, 43(1), 93-107. <https://doi.org/10.1007/s10624-018-9539-0>

20 https://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=94286&p_classification=01.02

21 Mausumi, N. (2016, 15 December). Recent developments in 'labor rights' and 'safety at workplace' of Bangladesh RMG industries. *Textile Today*. <https://www.textiletoday.com.bd/recent-developments-labor-rights-safety-workplace-bangladesh-rmg-industries>

22 The Daily Star. (2018, 4 September). Govt eases trade union rules. *The Daily Star*. <https://www.thedailystar.net/news/city/bangladesh-labour-act-amendment-2018-cabinet-approved-banning-child-labour-1628449>

23 Paul, R. (2018, 13 September). Bangladesh raises wages for garment workers. *Reuters*. <https://www.reuters.com/article/us-bangladesh-garments/bangladesh-raises-wages-for-garment-workers-idUSKCN1LT2UR>

24 https://en.wikipedia.org/wiki/Dearness_allowance

25 https://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=94286&p_classification=01.02

26 Akter, S., & Alam, R. (2016). HR Practices in Selected RMG Factories in Dhaka. *Journal of Business*, 1(4), 39-42. https://www.researchgate.net/publication/316027572_HR_Practices_in_Selected_RMG_Factories_in_Dhaka

27 Ibid.

Conclusion

Regardless of potential benefits, AI and automation pose a great risk of job losses for workers, particularly female workers who are at the bottom of the production process. The RMG sector in Bangladesh is already known for its precarious working environment, wage discrimination, lack of formal contracts, massive workload, etc. Even the attempts to unionise workers are made harder by legal restrictions (despite the recent amendments to the Labour Act), intimidation against organisers, and the threat of corporate flight; but local unions also struggle to meet the complex needs of workers employed in the garments sector.²⁸ AI and automation are one of these complex things that labour unions in Bangladesh are yet to comprehend.

In many countries, trade unions remain one of the major voices to share worker concerns, demand rights and negotiate on job losses, but this is not the case in Bangladesh's RMG sector. This is particularly important because AI will certainly create new types of jobs (for example, machines will require operators, repair technicians, etc.) to which the existing workforce, with appropriate training, can be redeployed and accommodated as a priority.

Bangladesh policy makers and private sector bodies also need to understand that the dependence on cheap labour to gain competitive advantage will not work any longer, as in the longer term this advantage is offset by lower productivity due to lack of skills development. This approach is clearly reflected in the hiring of workers without raising wages in Bangladesh. Available data indicates that real wages in the manufacturing sector in Bangladesh have not increased over the last decade and a half.²⁹ Education policy and skills development are two important areas that need attention in the context of a game-changing technology such as AI being implemented in the RMG sector, as in other sectors in the country.

Action steps

The following steps are necessary in Bangladesh:

- Civil society in Bangladesh is yet to take into cognisance the emergence and effects of AI, particularly in the RMG sector, a sector where workers are among the most vulnerable and which includes a large number of women in the workforce. A national conversation on the issue is

already overdue, as AI technologies have already started to be used in some factories. There is no evidence-based research available with data, facts or figures that could inform the policy-making process. Trade unions in the RMG sector are weak and often are not allowed to operate, let alone make demands for workers' rights. Therefore, civil society has a role to sensitise policy makers about the topic and bring about a change of attitude in addressing the issue. A more human, public good approach to AI implementation will be a win-win situation for everyone.

- A research and evidence-based policy intervention in education and skills development policy is an imperative to minimise the risks posed by AI and automation. As traditional factory jobs evolve, technology-servicing roles will become more important. Just as sewing machines break and need calibration, so, too, will the apparel printers and packaging systems of the future. To help ease the transition from manual to modern manufacturing, businesses and governments must begin improving the tech literacy of current employees. If today's workforces are to remain relevant in the economies of tomorrow, employees will need the skills to contribute.³⁰ All trade and labour policy may also need to be revisited in order to accommodate AI-specific shocks to society. For example, policy may need to dictate trade agreements that cushion the impact when manufacturing jobs are lost, while laying the groundwork for the transition to more tech-heavy industries.³¹
- Civil society also needs to start paying attention to other issues to do with AI including ethics, data privacy, security, and best practices in regulatory frameworks. For example, the European Union has unveiled ethics guidelines that illustrate that any AI technologies that are to be implemented on an industrial scale need to be accountable, explainable and unbiased. Around 30 countries in the world have already created or drafted an AI framework for the generic application of AI, as well as dealing with specific issues.³² Bangladesh civil society should formulate a position paper on AI, and this research from Bytesforall Bangladesh can be an important first step in that direction.

28 Ashraf, H., & Prentice, R. (2019). Op. cit.

29 Mahmood, M. (2017, 15 November). Industrial automation: a challenge for Bangladesh's manufacturing future. *CPD RMG Study*. <https://rmg-study.cpd.org.bd/industrial-automation-challenge-bangladeshs-manufacturing-future>

30 Deeghawathura, H. (2018, 8 June). Op. cit.

31 Ibid.

32 Adeb, A. (2019, 13 May). Artificial intelligence, real progress. *Dhaka Tribune*. <https://www.dhakatribune.com/opinion/op-ed/2019/05/13/artificial-intelligence-real-progress>

Artificial intelligence: Human rights, social justice and development

Artificial intelligence (AI) is now receiving unprecedented global attention as it finds widespread practical application in multiple spheres of activity. But what are the human rights, social justice and development implications of AI when used in areas such as health, education and social services, or in building “smart cities”? How does algorithmic decision making impact on marginalised people and the poor?

This edition of Global Information Society Watch (GISWatch) provides a perspective from the global South on the application of AI to our everyday lives. It includes 40 country reports from countries as diverse as Benin, Argentina, India, Russia and Ukraine, as well as three regional reports. These are framed by eight thematic reports dealing with topics such as data governance, food sovereignty, AI in the workplace, and so-called “killer robots”.

While pointing to the positive use of AI to enable rights in ways that were not easily possible before, this edition of GISWatch highlights the real threats that we need to pay attention to if we are going to build an AI-embedded future that enables human dignity.

GLOBAL INFORMATION SOCIETY WATCH
2019 Report
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