

Automation and Its Impact on Employment of RMG Sector: The Case of Bangladesh

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Research Question:

Is implementation of automation and artificial intelligence in the RMG Sector of Bangladesh the greatest threat of job displacement? Does automation would likely to impact and sack employees from their job?

Introduction:

Automation has been the key driver of economic progress in the modern world, as businesses adopt automated processes to enhance efficiency. This is the fourth wave of the technological revolution; like other revolutions, it creates chances of job displacement. It's a concerning issue for Bangladesh since unemployment is always one of the major issues. More than 4.22 million workers are employed in the RMG sector in Bangladesh. [1].

In recent years, Bangladesh has become a major player in the global economy, mostly because of the RMG industry. Which contributes to both employment and exports from the nation. Bangladesh continued to have the second largest global ranking in RMG exporter countries with \$38 billion export amount in 2023. Vietnam ranked in 3rd place in RMG exporter countries with \$31 billion. China ranked at the top with \$165 billion. Bangladesh's share in global RMG exports was 7.9%, the share of China and Vietnam was 31.64% and 5.96%, respectively, in global RMG exports [2].

Keeping pace with the time, developing nations that are ranked top in RMG exporter country rankings are adopting technologies, whereas, the RMG sector in Bangladesh is labor intensive. When it comes to the productivity in RMG sector, Bangladesh is still lagging behind. The hourly productivity in China is \$11.10 and in Bangladesh it is \$3.40 per hour [3].

This research aims to find out the effect of implementing automation on employment in the RMG sector of Bangladesh. Analysing the issue is important because a huge number of people are employed in the RMG sector, and the impact on their job affects not only them as individuals but also their family and society as a whole.

Literature Review:

The Ready-Made Garments (RMG) sector in Bangladesh is one of the primary contributors to the nation's economy, holding the position as one of the world's largest garment exporters. The RMG supply chain is complex, involving multiple stakeholders and causing inefficiencies. AI and IoT can optimise supply chain aspects, such as demand forecasting and inventory management, reducing operational complexities like delays in lead time and a decline in product quality [4].

The effects of automation on the clothing business have not been thoroughly studied empirically. In the near future, automation may replace many human workers for simple clothing items, while human interventions will dominate the sewing of stylish and complex apparel products, according to this study. Twenty-seven semi-structured in-depth interviews were used to gather primary data. In each given industrial area, automation first reduces human interaction [5].

Automation primarily replaces low-skilled labour, but overall, it does not result in a loss of jobs. Even though training is thought to be essential for automation success, most of the factories in the sample lack (effective) in-house training facilities. Management is primarily motivated by foreign customers and compliance needs while taking human issues into consideration. Face-to-face interviews employing a semi-structured questionnaire are used to collect data, which is then subjected to manual interpretive content analysis. A convenience sampling method is pursued; nonetheless, a proper mix of varied levels of garment factories is assured [6].

Bangladesh's government has taken the 7th Five Year plan to implement Sustainable Development Goals (SDGs) by promoting favourable trade policies along with industrialisation, digitisation, and inclusive development. Here, the ready-made garment (RMG) is the most influential trading sector to contribute enormously in the export earnings. In recent times, the sector has been facing massive changes due to the automation of the Fourth Industrial Revolution (FIR). To sustain in this digitally competitive trade market has become a major challenge for the small RMG industries. A huge number of small and medium enterprises (SMEs) in our country have already been shut down due to automation. The large factories are also changing their manufacturing system by installing automation to cope with the demand for global competition. These are creating an unstable condition for RMG trade. The government needs to take a strategic and integrated plan immediately to gain the competitive advantage of FIR. Otherwise, Bangladesh will lose the international market for the RMGs of the country [7].

This research will focus on fear of job displacement as well as the actual threat of job losing in RMG sector and will find whether the automation makes betterment for the RMG sector of Bangladesh.

Research Methodology:

This study applies a mixed method approach.

Quantitative Phase:

In the quantitative phase, some answers of the selected respondents will be explained using Likert scale. Regression data analysis as well as numerical values with graphs and charts will be used to evaluate the comparison of situations before implementing automation and after implementing automation in the RMG sector.

Qualitative Phase:

Garments based on their sizes—small, medium, and large will be selected for the sample. 6 to 9 garments will be selected for collecting data. A face-to-face interview using a questionnaire or schedule method will be followed up. From each garment, 5 to 10 respondents will be selected for answering the questionnaire. The 5 respondents, from employee level who are working in the automation sector, and other respondents will be from HR/Admin/Managerial level. The questionnaire will explore the type of automation the garments implemented, total workers employed before automation and total employers working after automation, total production before automation and total production after implementing automation, which type of skill or training is needed to operate the automation, and average labour cost productivity before and after automation. Thematic analysis will be used to extract important themes and patterns from the qualitative data.

Data Analysis:

In data analysis, the answers will be transcribed, thematic analysis, and data from previous and after of implementing automation will be compared to find the depth of the following issue by qualitative data approach.

Project Practicalities:

Data collection will take over three weeks to two months from getting the permission to collect data in the RMG's to getting the answers needed from the respondents, and it will be followed by regression data analysis.

This study will be conducted fairly, and all the collected information will be kept safe. Guidelines of this study will be adhered to to ensure that the participants or respondents who will participate in this research understand that their information is avoided from being shared with others excluded from this research.

The time has been set carefully to prepare the questionnaire, the collection of the data, and gathering all the information needed. Comparing the impact of automation on production, wage, and the average cost of labour in production will give a clear idea about the effect with a focus on keeping the information of the respondents private.

Specialised methods will be used to protect data. Only those related to this research or authorised persons will get access to the data. Since the information is confidential, it is important to keep the names of respondents who are working as employers in the RMG sector private. This will make statements and studies more reliable.

Roadblocks and Potential Limitations:

Some potential issues could be that the RMGs may not share their information, as some RMGs want to keep their data private. So, we have to be careful in the time of sample selection. Another issue could be that people might not always give accurate or honest information because they're worried about their privacy. Due to the small sample size, not all the different respondents might represent all. Since there are various types of RMG sectors involved in producing traditional clothes to western clothes. Additionally, the time decided to collect information may vary due to depending upon permissions and uncertain circumstances. The respondents may also answer positively in favour of keeping the image of RMG high. Such bias can create problems in conducting the research. Some roadblocks and limitations can be controlled by handling the situations quite carefully in the time of research design, and some can be eliminated in the time of data collection by ensuring the respondents information will be kept private. This will do a big help in ensuring accurate and reliable results.

Post Program Plan:

Once the research is completed, research findings will be published through academic publications, industry presentations, journals, and relevant organizations. The reason is to share the information so that the potential impact in job displacement of automation in the RMG sector can be understood. These insights will offer valuable information to be prepared for future situations, understanding the depth of the issue and, if the job displacement takes place, how to overcome or solve this issue. Technological change can't be denied; potential possibilities for job displacement arises, so the findings will help to understand how to use automation for the overall betterment of society. Furthermore, the study will remain open to further investigations to address any possible gaps or discover new findings.

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