

RESEARCH

The impact of compliance on the ready-made garments sector in Bangladesh: a descriptive analysis

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Ensuring compliance within the ready-made garments (RMGs) sector is one of the primary concerns for international buyers and global institutions. Bangladesh's RMG factories must enhance compliance within their workplaces to maintain a strong position in the global market. This research highlights the impact of compliance issues identified by international stakeholders on the working environment of the RMG industry in Bangladesh. The study employed an interview method along with a simple random sampling technique to gather information from 318 respondents in Dhaka City. Collected data were analyzed using statistical methods, including frequency distributions, and the research hypothesis was examined through the application of the chi-square test. The investigation's outcomes indicate that factories adhering to compliance guidelines are more likely to uphold workers' rights according to international labor standards, and their workplace environments are of higher quality than those of factories that are not compliant. After practical observation, it is clear that compliance has influenced the working environment of the RMG industry in Bangladesh, as the accidents that occurred in garment factories were a direct consequence of the inadequate working conditions in RMG factories. Following these incidents, international actors initiated several measures related to workers' safety. Currently, the situation in both RMG factories is better than before. Although non-compliant RMG factories are still failing to protect workers' safety rules properly, some rights have now been ensured that were previously unavailable. Therefore, matters related to the advancement of the RMG sector must be effectively addressed to ensure sustainability in the global market.

Keywords: compliance, ready-made garments (RMGs), workplace safety, working environment, Bangladesh

Introduction

The ready-made apparel industry of Bangladesh is known as an international market-oriented industry with the help of globalization, which acts as a leading role in the economic progress of Bangladesh. It has achieved a suitable position in the world market within a short time due to the Multi-Fibre Agreement (MFA) of the General Agreement on Tariff and Trade (GATT) and collaborative measures of the Government of Bangladesh (GoB) (1). Though the quota system was removed in 2005, the flourishing of the ready-made garments (RMGs) sector could not be stopped. In FY 2013–2014, the export of RMGs products to foreign markets increased by around 22,053.8 million in comparison to FY 1984–1985 (2). The apparel industry of Bangladesh

is passing a challenging phase for not ensuring the rules and regulations given by international stakeholders, in their factories. Bangladeshi RMG products are exported to the international market especially the buyers are from the European Union (EU) and North America. A great part of the international stakeholders is involved in the clothing sector of Bangladesh.

The RMG industry stands as one of the central pillars of Bangladesh's economy, generating the highest portion of export income and employing a vast labor force. Yet, its rapid growth has also exposed persistent challenges related to labor rights, workplace safety, and environmental compliance. Although scholars have increasingly engaged with these concerns, several dimensions of the debate remain insufficiently addressed.

Objectives of the study

The main objective of the research is to evaluate the impact of compliance issues identified by international stakeholders on the working environment of the RMG industry in Bangladesh.

The study has the following objectives:

1. To examine the improvement of the working environment in compliant and non-compliant factories in the RMG sector of Bangladesh.
2. To explore factory workers' perceptions of compliance practices in their factories.

Research questions

1. To what extent is the workplace of the apparel industry of Bangladesh influenced by international pressure?
2. Which international stakeholders are dealing with compliance issues?
3. To what extent is the security of garment workers ensured through compliance?

Significance of the study

This research is significant because it addresses critical issues concerning compliance in Bangladesh's RMG sector, which remains a cornerstone of the country's economy. By evaluating the impact of compliance issues identified by international stakeholders, the study provides valuable insights into how global standards influence local working environments. Understanding these effects is crucial for ensuring that both workers' welfare and factory operations are aligned with international expectations.

The first objective, examining improvements in compliant and non-compliant factories, helps identify tangible differences in workplace conditions. This information can guide policymakers, factory management, and industry regulators in targeting interventions where they are most needed and ensuring that labor standards are effectively implemented across all factories. The second objective, exploring factory workers' perceptions of compliance practices, adds a human dimension to the study. By capturing workers' experiences and views, the research highlights gaps between formal compliance measures and their actual implementation on the ground. This perspective is essential for developing strategies that are both practical and worker-centered, ultimately enhancing workplace safety, satisfaction, and productivity.

Overall, the study contributes to a better understanding of the real-world impact of compliance initiatives, providing guidance for industry stakeholders to foster

safer, more equitable, and globally competitive RMG workplaces in Bangladesh.

Literature review

The RMG industry has become the backbone of Bangladesh's economy, accounting for the largest share of export revenue and providing employment to millions, particularly women. With its rapid growth, however, the sector has faced persistent challenges concerning compliance with labor standards, workplace safety, and environmental regulations. Scholars have increasingly examined these issues, yet debates remain about the extent to which compliance measures have transformed the sector. Alam et al. (3) studied the influence of social compliance factors on employee productivity, identifying variables such as wages, leave policies, and workplace environment. Their findings suggest that adherence to labor standards not only improves workers' well-being but also enhances efficiency and organizational output. In contrast, managerial systems and environmental conditions showed weaker associations with productivity. Bristi et al. (4) expanded this discussion by exploring corporate social responsibility (CSR) practices in the garment industry, emphasizing that responsible initiatives strengthen global reputation and contribute to sustainability. Nevertheless, they observed that CSR adoption is inconsistent across factories, leading to uneven outcomes.

The role of external stakeholders has also been highlighted. Fontana (5) revealed tensions between global buyers' strict audit requirements and the limited resources available to Bangladeshi manufacturers, showing that compliance often becomes a contested process. Similarly, Chowdhury (6) pointed out that post-Rana Plaza reforms, such as the Accord on Fire and Building Safety, have brought noticeable improvements in occupational safety, though enforcement remains uneven between large and small factories.

Globalization increases competition among nations economically, socially, and politically. Every state wants to capture the world market, emphasizing the trade sector. As a result, Bangladesh is also influenced by those aspects of globalization (7). Globalization connects the EU and North America with Bangladesh. According to the "Quarterly Review on RMG (April–June 2022)," Bangladesh earned around 82% of its total export revenue from the garments sector, especially from woven and knitwear exports. Chowdhury et al. (8) opine that by improving the RMGs industry, Bangladesh can increase its foreign currency reserve and develop its economic sector.

Due to an unhealthy working atmosphere in the RMG factories, Bangladesh has been denounced for a long time. RMG factories are not following international labor rules properly. After the tragic event of the "Rana Plaza collapse (24 April 2013) and the Tazreen Fashions fire (24 November 2012)," Bangladesh has been continuously pressured by

development partners, and they have been doing several projects to reorganize the RMG sector (9). On the other hand, Khan and Wichterich (10) said that compliant factories are taking several steps to change the image of RMG industries. On the contrary, there is no visible change in the non-compliant garment factories because these factories are not directly involved with international customers.

As per the literature review, owners of the Bangladesh clothing factories are not ensuring workers' rights properly, as they are not accountable to international buyers for the transgressions of workers' rules. The right of trade unions is also banned in the textile sector. To follow international labor law, international organizations such as the International Labor Organization and International Finance Corporation are frequently pressuring the Bangladeshi government to confirm labor rules within their factories. At present, the main focus of global institutions, western customers, and international buyers is the healthy working environment for garment workers (11). Bangladesh has lost the Generalized System of Preferences (GSP) facility, which helps more than 5,000 products in Bangladesh to enter the US market without tax (12). As international buyers are mainly responsible for their customer's satisfaction, they are observing the RMG factories continuously before purchasing any products (13).

Previous studies showed that workers are facing several health issues, such as body pain, backache, headache, heart problems, etc., due to unhygienic workplace (14–16, 17). On the other hand, some researchers observed that congested areas in the factory and heavy workload accelerate health issues of the laborers (14, 18). Factory proprietors do not drive their factories according to international rules and regulations, though they are bound to maintain those conventions (19). Garment workers lead a vulnerable life due to the lack of facilities in their workplace. Ahamed (1) said that garment workers don't know about their rights and what they will get from their factory owners. Women are the victims of workplace violence by their supervisors (20). As a member of the "UN Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)," Bangladesh should ensure labor rules, but it is not maintained in the RMG factories (21).

The accident at "Garib and Garib" (garments factory) due to vulnerable working conditions, on February 25th, 2010, was one of the prominent examples of the garments industry (22). Due to this unfortunate event, the RMG industry of Bangladesh was forced by international buyers to ensure workplace safety. The garment sector of Bangladesh was also pressurized by a workers union, named "South Asian Alliance for Poverty Eradication (SAAPE)," to ensure workers' safety (23). Due to an unsafe working environment, on December 14th, 2010, another tragedy happened at "That is It Sportswear (Ha-Meem group)." As a result, several international organizations raised their voices for ensuring workplace safety in the RMG factories. Those

organizations are the "International Labor Rights Forum," "Workers' Rights Consortium," and "Maquila Solidarity Network," etc. (24).

International Labor Organization (ILO) is financed by the United Kingdom with a large amount of money to develop the workplace of the RMG factories in Bangladesh (25). Garment workers must have insurance facilities provided by factory owners as per ILO convention, but it is not maintained in Bangladesh (26). If international rules are maintained, workers' situation will improve. According to the opinion of the leaders of the workers, factory owners took many initiatives as per ILO proposals, but those had not been implemented properly. The rules determined by international buyers are hard to follow properly (27).

Initiatives of international actors

Activities of ILO. Several functions have been done by ILO with other development partners, international agencies, and several countries. Almost 20 projects, under the supervision of ILO and other organizations, are ongoing (9). To ensure labor rights, the RMG factories of Bangladesh are inspected by ILO. According to the ILO, workers' rights must be internationally standard, and the GoB should ensure it through their domestic rules (28).

The initiatives of the EU. The EU, together with other organizations such as the ILO and the GoB, agreed in July 2013 to ensure a healthy working environment (10). As per the "Fourth Monitoring Report of the Centre for Policy Dialogue," under this contract, a project named Better Work and Standard (BEST) has been carried out (9).

Role of the accord and the alliance. The Accord and the Alliance were the treaties made in 2013 for the refinement of the RMG field. From the quarterly report, the Accord inspected 1,288 factories out of 1,531. On the other hand, safety training for the workers and preventive action measures have been taken under the Accord initiative. It has also spread its activities to workplace safety (9). Other initiatives were conducted by the Alliance for the Safety of the garment workers. 587 factories have been inspected by the Alliance, and among them, modification of 50% of the factories was ongoing (29).

Role of the government of Bangladesh. To secure a safe and supportive job environment, the GoB, together with other ministries and administrations, has been performing several functions to maintain the international guidelines in the RMG sector. 25 functions are ongoing, and among those activities, 16 have been fully completed (10).

Code of conduct selected by international buyers. Code of Conduct means several rules and regulations that apply to the RMG industry, and those laws are made by the international organization, which must be obeyed by member states. The

RMG sector of Bangladesh is also controlled by international buyers. As the garment factories' working environment is not up to the mark, international buyers designed a guideline for the RMG factories to ensure workers' rights. As per Hossain and Arefin (30), a set of rules and regulations identified by international buyers are given below:

1. Child labor is not acceptable at work.
2. Use of force to work more should be strictly prohibited.
3. Ensuring transport service for the employees.
4. Duration of work should be maintained at an acceptable level.
5. Setting up a union, mostly called a trade union, is essential to protect workers' rights.
6. Some other facilities that are necessary for workers' safety. Such as filtered drinking water, a germ-free environment, healthcare opportunities, safety tools, eating houses, or canteens for the workers, recreation amenities, etc.

Research gap

Despite the contributions of existing scholarship, certain gaps are evident. Much of the research tends to provide broad discussions of compliance or focuses on narrow aspects such as CSR or labor issues, with relatively few studies comparing the working environment of both compliant and non-compliant factories. Moreover, while the influence of global stakeholders is frequently acknowledged, little empirical work has examined how international requirements translate into tangible improvements at the factory level. Addressing these gaps will provide a more comprehensive understanding of compliance practices and their significance for the sustainability of the RMG sector and Bangladesh's global competitiveness.

Methodology

Study design and participants

This research followed a qualitative and descriptive method. This study was designed as a cross-sectional investigation to assess the impact of compliance practices on the working environment in the RMG sector of Bangladesh (31). The study was conducted over a period of one year, from January 2023 to December 2023. The population included workers from both compliant and non-compliant factories located in Dhaka City especially the areas of Tejgaon, Dakkhinkhan, Kawlar, Mirpur, Khilkhet, and Uttara. A total of 318 participants were selected using a simple random sampling technique to ensure representativeness (32). From these particular areas of Dhaka city, six compliant RMG

factories and another five non-compliant RMG factories were selected purposively. For the purpose of collecting data, the high-level workers, including the operator, helper, swing, and finishing from the garment factories, were taken. They have been selected as respondents for interviewing.

Data collection

Primary data were collected through a combination of structured interviews and questionnaires. The instrument focused on workers' perceptions of compliance practices, labor standards, and workplace conditions (33). The interviews were conducted face-to-face to capture detailed qualitative insights, while the questionnaire provided standardized quantitative responses.

Ethical approval

The research was reviewed and approved by the Institutional Review Board (IRB) of Dhaka University. Prior to participation, all respondents provided informed consent, and their privacy and confidentiality were strictly maintained in accordance with ethical guidelines. This study was conducted in accordance with the Declaration of Helsinki guidelines (34).

Data analysis

The collected data were analyzed using descriptive and inferential statistical techniques. Frequency distributions summarized the responses, and a chi-square test was applied to test the relationship between compliance practices and improvements in the working environment (35). Findings were presented using tables and graphs to enhance clarity.

Hypothesis

There is no association between compliance with labor standards and the RMG sector in Bangladesh.

Results

Demographic information of the respondents

Interpretation of the graph

Figure 1 shows the percentage of male and female participants in the study. A higher number of the

Distribution of respondents by Gender

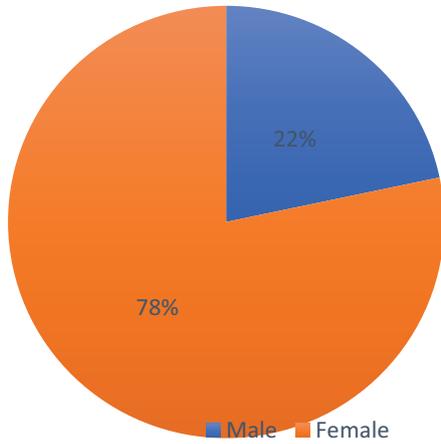


FIGURE 1 | Distribution of respondents by gender. Source: Gathered and analyzed by the researcher.

respondents were female, which aligns with the predominance of women in Bangladesh’s RMG workforce.

Interpretation of the graph

Figure 2 illustrates the age composition of the study participants. The largest segment, 38%, falls within the 18–24 years range, indicating that a significant portion of the workforce in the surveyed RMG factories is young. The 24–30 years group follows closely with 33%, while 18% of respondents are aged 30–36. A smaller proportion, 8%, are between 36 and 42 years, and only 3% fall into the “Others (Upper)” category. This finding indicates that the RMG sector workforce is dominated by younger age groups.

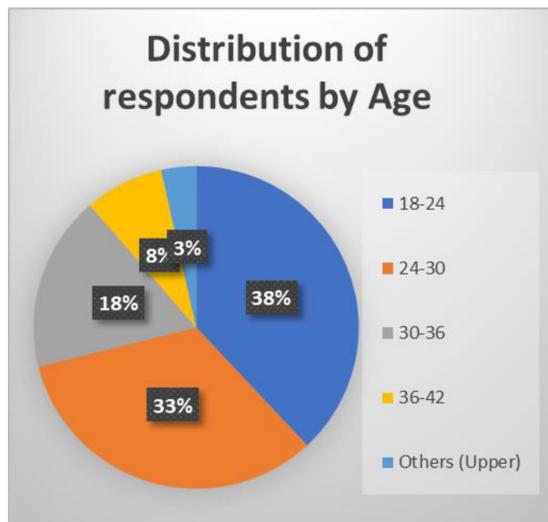


FIGURE 2 | Distribution of respondents by age. Source: Gathered and analyzed by the researcher.

Interpretation of the graph

Figure 3 illustrates the occupation distribution of the study participants. The largest segment, 30%, belongs to the operator area, and the second largest segment, 22%, belongs to the finishing section. Another 21% are taken from the helper section. On the other hand, 19% and 8% of respondents are taken from swing and other upper levels.

Compliance concerns determined by ILO and international buyers

The working time regulation, 1919 (no. 1) of the ILO

Q.1: Do you work long hours at your factory every day?

Interpretation of the graph. **Figure 4** shows that 85% of the workers stay at their workplace for 8–10 hours per day. On the other hand, as per the opinion of 15% of the workers, they work 11–13 hours at their factory daily. That means the maximum compliant RMG factories’ working hour are limited to 8–10 hours per day. So, it is acceptable that compliant factories are trying to comply with the working time regulation, 1919 (no. 1) of the ILO.

Interpretation of the graph. **Figure 4** shows that 63% of the workers stay at their workplace for 11–13 hours per day. Not only that, but sometimes their workload exceeds the normal hour. On the other hand, as per the opinion of 28% of the workers, they work 14–16 hours at their factory daily. That means the working hours of non-compliant RMG factories are not limited to 8 hours every day. So, it is acceptable that the working time regulation, 1919 (no. 1) of the ILO is not maintained by the non-compliant RMG factories.

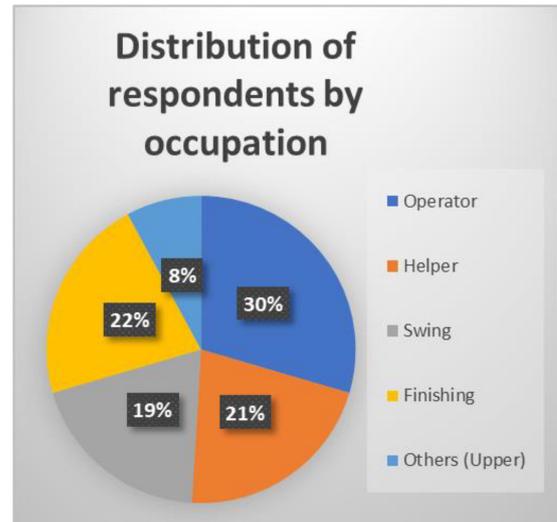


FIGURE 3 | Distribution of respondents by occupation. Source: Gathered and analyzed by the researcher.

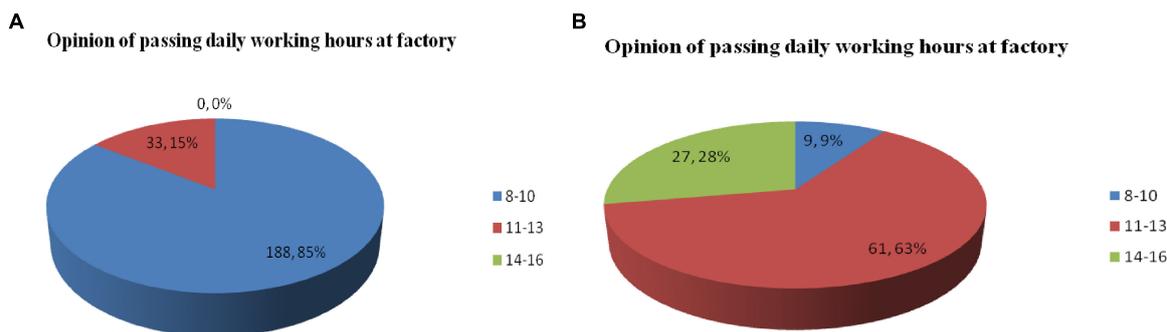


FIGURE 4 | Respondents’ perception of daily working hours at compliant and non-compliant ready-made garments (RMGs) factories (A, B). Source: Gathered and analyzed by the researcher.

The office hour regulation, 1930 (no. 30) of the ILO

Q.2: Does your factory provide an extra salary for the overtime work?

Interpretation of the graph. According to **Figure 5**, 68% of the respondents strongly agree with the question that their factory provides extra salary for overtime work. Additionally, 22% of respondents also agree with this opinion. On the other hand, 6% of workers disagreed and only 4% of workers strongly disagreed with this idea. It spells out that most of the compliant RMG factories support the office hour regulation, 1930 (no. 30) of the ILO.

Interpretation of the graph. **Figure 5** describes that 57% of the respondents strongly disagree with the idea of providing extra salary for overtime work. Additionally, 29% of answerers also dissent from this point of view. Contrarily, 7% of informants agreed, and another 7% of workers strongly agreed with this idea. So, it is evident that most of the non-compliant RMG factories do not support the office hour regulation, 1930 (no. 30) of the ILO.

Workplace safety guidelines 1981 (no. 155) of the ILO

Q.3: Does the existing safety system of your factory please you?

Interpretation of the graph. **Figure 6** denotes that 62% of the surveyed workers strongly agree that they feel secure at their workplace. In addition, 38% of the interviewed workers also gave positive feedback about their workplace safety system, and no workers selected the criteria of disagree or strongly disagree. So, it is obvious that compliant RMG factories support the workplace safety guidelines 1981 (no. 155) of the ILO.

Interpretation of the graph. **Figure 6** explains that 25% of the interviewees, who take part in the interview session, strongly agree with the statement that they feel secure at their workplace. Alternatively, 44% of the interviewed workers also gave positive feedback about their workplace safety system. Conversely, 20% of interviewees disagreed, and only 11% of respondents strongly disagreed with this subject. So, there is no doubt that non-compliant RMG factories are trying to follow the Workplace Safety guidelines 1981 (no. 155) of the ILO.

Q.4: Does your factory provide enough training that will ensure your security?

Interpretation of the graph. As per **Figure 7**, 49% of the surveyed workers strongly agree that they feel secure as they get enough training that is related to their security issues. On the contrary, 42% of the respondents also agree with this topic. Conversely, only 9% of interviewees disagree, and

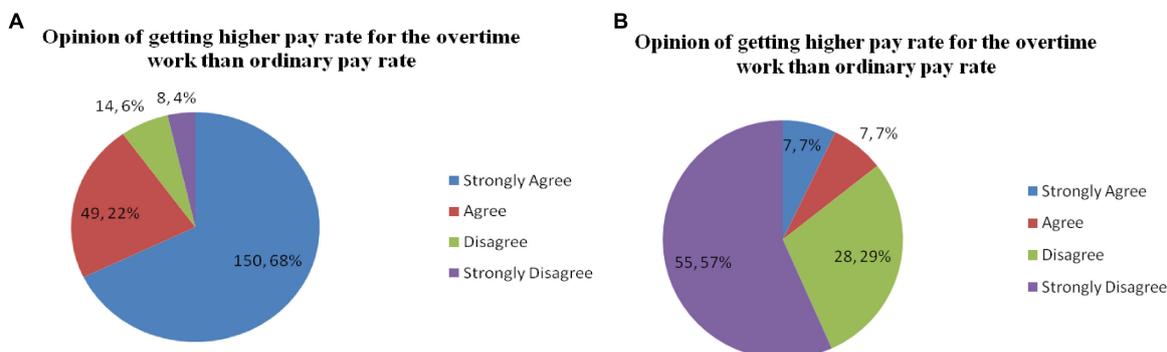


FIGURE 5 | Respondents’ perception of overtime payment at compliant and non-compliant RMG factories (A, B). Source: Gathered and analyzed by the researcher.

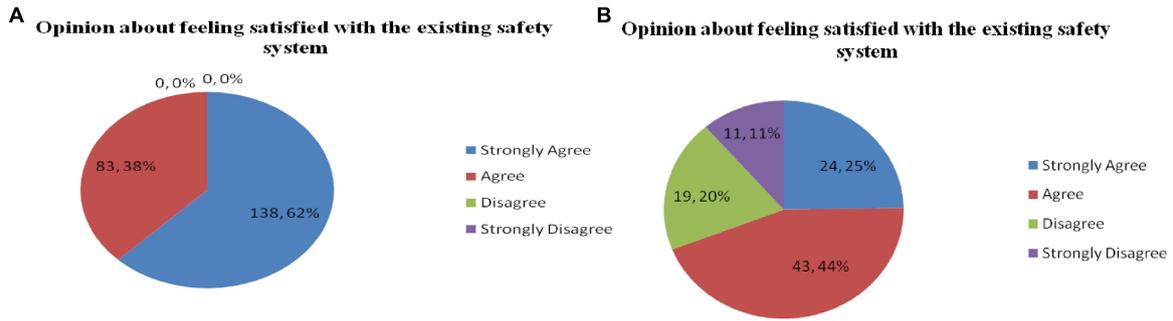


FIGURE 6 | Respondents' perception of safety system at compliant and non-compliant RMG factories (A, B). Source: Gathered and analyzed by the researcher.

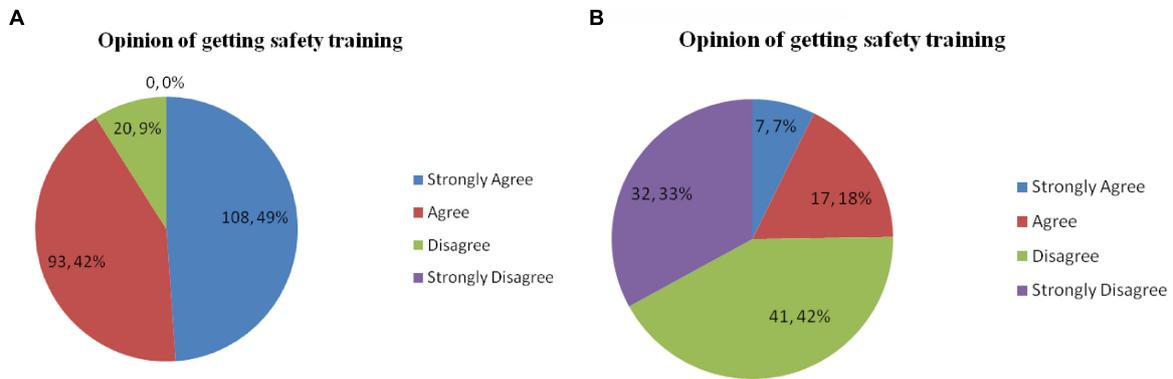


FIGURE 7 | Respondents' perception of safety training at compliant and non-compliant RMG factories (A, B). Source: Gathered and analyzed by the researcher.

no respondents strongly disagree. So, it is undeniable that almost all of the compliant RMG factories are following the workplace safety guidelines 1981 (no. 155) of the ILO.

Interpretation of the graph. Figure 7 describes that, around 25% of the interviewees agree that they feel secure as they get enough training that is related to their security issues. On the other hand, 75% of the interviewees disagree. This explains that most of the non-compliant RMG factories are not following the workplace safety guidelines 1981 (no. 155) of the ILO.

Q.5: Is the fire safety equipment available in your factory?

Interpretation of the graph. Considering Figure 8, 98% of the interviewed workers positively express their opinion that there is available fire safety equipment at their factory. Conversely, only 2% of interviewees negatively respond. This indicates that almost all of the compliant RMG factories are ensuring the workplace safety guidelines of 1981 (no. 155) of the ILO.

Interpretation of the graph. Considering Figure 8, 34% of the interviewed workers strongly express their opinion that there is available fire safety equipment at their factory, and 53% of the interrogated workers also agree regarding this issue. Besides, only 13% of interviewees didn't agree to this

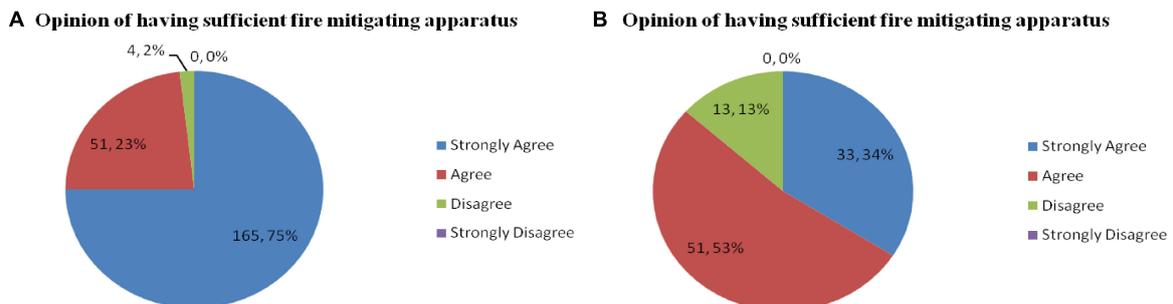


FIGURE 8 | Respondents' perception of fire mitigating apparatus, at compliant and non-compliant RMG factories (A, B). Source: Gathered and analyzed by the researcher.

matter. This represents that most of the non-compliant RMG factories are also conserving the workplace safety guidelines 1981 (no. 155) of the ILO.

Q.6: Do your factory's ventilation, illumination, and room temperature favor the workers?

Interpretation of the graph. Figure 9 indicates that 88% of the respondents positively responded to these criteria and said that their working atmosphere is pleasant and well-ordered. Only 12% of interviewees gave a negative response. So, it is unavoidable that most of the compliant RMG factories maintain the workplace safety guideline 1981 (no. 155) of the ILO.

Interpretation of the graph. Figure 9 indicates that almost 65% of the interviewee's response was positive regarding a well-organized environment. On the other hand, another 35% of interviewees denied this matter negatively. So, it is apparent that most of the non-compliant RMG factories are also trying to preserve the workplace safety guideline 1981 (no. 155) of the ILO.

Health care guidelines for the workplace, 1985 (no. 161) of the ILO

Q.7: Does your factory provide healthcare services? What are they?

Interpretation of the graph. Figure 10 illustrates that 75% of the surveyed interviewees express that their factories provide advanced medical care if they are in a risky situation at work. Contrarily, 25% of the respondents express that they are given only primary health support from their industries. So, there is no doubt that most of the compliant RMG factories support the health care guidelines for the workplace, 1985 (no. 161) of the ILO.

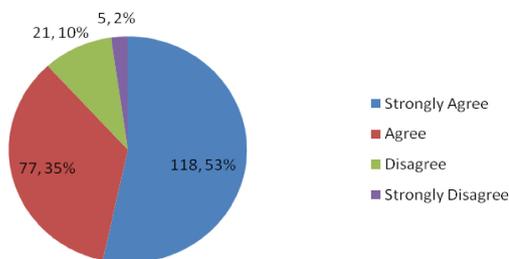
Interpretation of the graph. From Figure 10 it is apparent that non-compliant RMG factories do not follow the health care guidelines for the workplace, 1985 (no. 161) of the ILO regarding health care issues, as 88% of respondents express that they are given only first aid medical treatment from their factories.

Q.8: Do you think the existing hygienic system at your workplace satisfies you?

Interpretation of the graph. According to Figure 11, almost 96% of the respondents positively said that their factories maintain hygiene properly. On the contrary, only 4% of interviewees gave a negative response. So, it is acceptable that almost all of the compliant RMG factories are preserving the health care guidelines for the workplace, 1985 (no. 161) of the ILO.

Interpretation of the graph. Considering Figure 11, 34% of the respondents say that their factories do not maintain

A Opinion about well-organized ventilation, illumination and room temperature monitoring system



B Opinion about well-organized ventilation, illumination and room temperature monitoring system

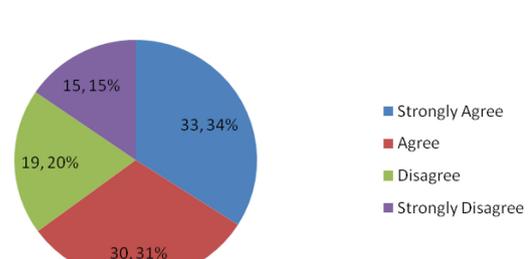
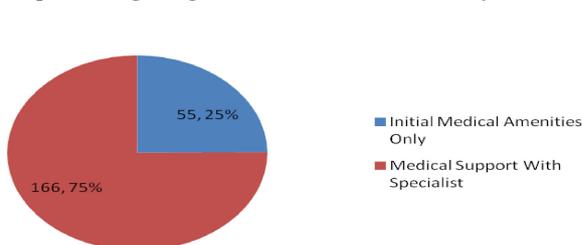


FIGURE 9 | Respondents' perception of well-organized ventilation, illumination, and room temperature system at compliant and non-compliant RMG factories (A, B). Source: Gathered and analyzed by the researcher.

A Opinion of getting healthcare services at factory



B Opinion of getting healthcare services at factory

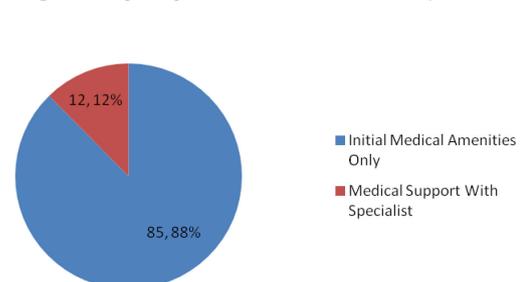


FIGURE 10 | Respondents' perception of healthcare services at compliant and non-compliant RMG factories (A, B). Source: Gathered and analyzed by the researcher.

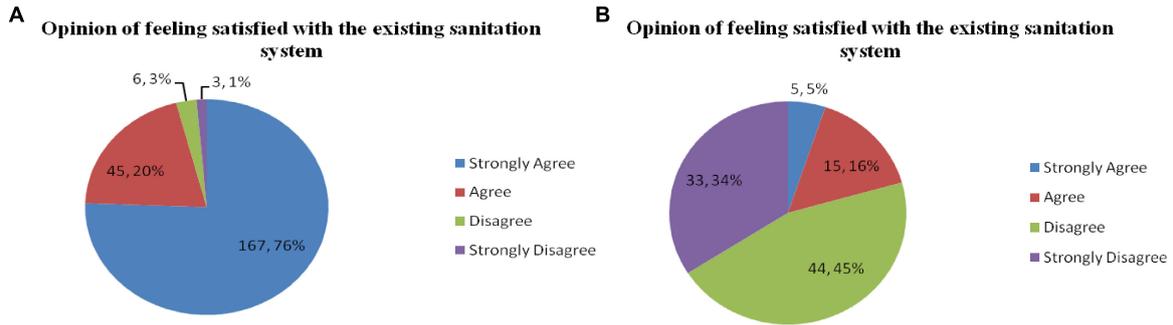


FIGURE 11 | Respondents’ perception of sanitation system at compliant and non-compliant RMG factories (A, B). Source: Gathered and analyzed by the researcher.

hygiene properly, and they strongly support it. On top of that, 45% of the interviewed individuals also gave a negative response, and on the contrary, only 16% of interviewees gave a positive answer and said that their sanitation system is good. Another 5% of workers also said the same thing. So, it is acceptable that non-compliant RMG factories are not preserving the health care guidelines for the workplace, 1985 (no. 161) of the ILO.

Q.9: Do you have washroom and cafeteria facilities at your workplace?

Interpretation of the graph. Figure 12 illustrates that 48% of the individuals who take part in the interview session strongly agree with the statement that their factories have washroom and cafeteria facilities. On top of that, 39% of individuals also agree with this opinion. Alternately, only 13% of interviewees gave negative responses. From their perspective, it is beyond doubt that most of the compliant RMG factories are preserving the health care guidelines for the workplace, 1985 (no. 161) of the ILO to this point.

Interpretation of the graph. Figure 12 illustrates that 82% of individuals who participated in the interview session expressed a negative response regarding the lack of washroom and cafeteria facilities in their factories. Conversely, only 2% strongly agree that such facilities are available, while another 16% report having washroom and

cafeteria amenities. Based on their feedback, it is clear that non-compliant RMG factories are not adhering to the health care guidelines for workplace, 1985 (no. 161) of the ILO to this point.

The prohibition of child labor, 1999, of the ILO

Q.10: Do the workers below 18 or less than that receive a low salary?

Interpretation of the graph. As per Figure 13, almost 77% of the individuals who take part in the interview session strongly disagree with this point. On top of that, 23% of respondents also disagree and no workers agree with this question. That signifies child labor is not permitted at compliant RMG factories. Compliant RMG factories is adequately preserved the prohibition of child labor, 1999 of the ILO to this point.

Interpretation of the graph. As per Figure 13, only 20% of the individuals who take part in the interview session strongly disagree with this point. Furthermore, 16% of interviewed workers also disagree and 28% of workers strongly agree with the given question. Additionally, 36% of interviewed workers also uphold this question. From their perspective, there is the presence of underage labor at non-compliant RMG factories. As per their opinion, most of the non-compliant

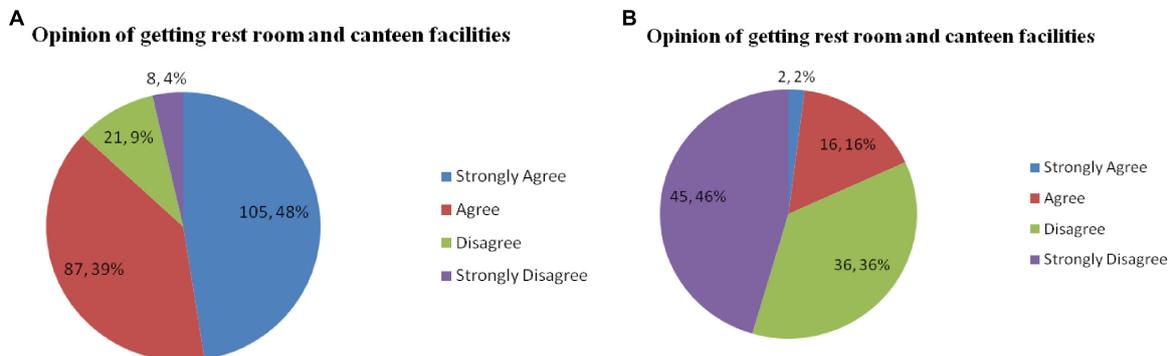
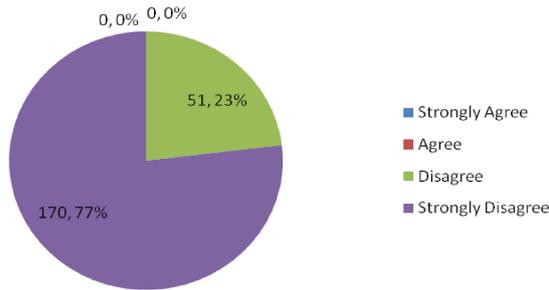


FIGURE 12 | Respondents’ perception of washroom and cafeteria facilities at compliant and non-compliant RMG factories (A, B). Source: Gathered and analyzed by the researcher

A Opinion of giving low salary to the child worker



B Opinion of giving low salary to the child worker

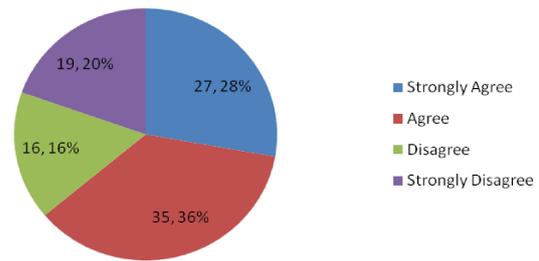


FIGURE 13 | Respondents' perception of child labor at compliant and non-compliant RMG factories (A, B). Source: Gathered and analyzed by the researcher.

RMG factories are failing to maintain the prohibition of child exploitation, 1999 of the ILO to this point.

The right to freedom of association rule 1948 of the ILO

Q.11: Do the workers have the right to negotiate any problem unitedly with their factory proprietor?

Interpretation of the graph. Figure 14 explains that 41% of the interviewees vehemently disagree and 30% of the interviewees also disagree with this question. It means that workers don't have the right to form an organization to ensure their rights. They said that without a worker's organization, they could not explain their problem properly. On the other hand, 13% of interviewees agree and 16% of interviewees concur wholeheartedly with this idea. It can safely be said that all compliant RMG factories are not conforming to the right to self-organization regulation 1948 of the ILO.

Interpretation of the graph. Figure 14 explains that 57% of the interviewees vehemently disagree, and 37% of the respondents also oppose this question. It means that garment workers don't have the right to form an independent organization to ensure their rights. They said that without a worker's organization, they could not explain their problem properly. On top of that, 3% of interviewees agree and 3% of interviewees concur wholeheartedly with this idea. It can

safely be said that all non-compliant RMG factories are not conforming to the right to self-organization regulation 1948 of the ILO.

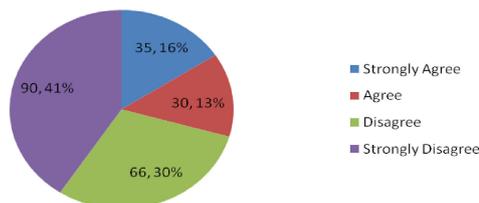
The rule of prohibition of involuntary labor, 1957

Q.12: Do you face extra pressure in the delivery time?

Interpretation of the graph. Considering Figure 15, it is evident that, 72% of the surveyed workers vehemently oppose with the question of facing extra pressure in the delivery time. In addition, 14% of interviewees also disagree. Alternatively, only 15% of interviewees have given negative feedback on this issue. Based on their interpretation, it is noticeable that most of the Compliant RMG factories are following the rule of prohibition of involuntary labor, 1957.

Interpretation of the graph. Figure 15 express that, 8% of the surveyed workers totally disagree with the question of facing extra pressure in the delivery time. In addition, 10% of interviewees also disagree. Alternatively, another 82% of interviewees have given negative feedback on this issue. They admit that they are forced to do extra work during the delivery period. Based on their interpretation, it is noticeable that most of the non-compliant RMG factories are not following the rule of prohibition of involuntary labour, 1957.

A Opinion of discussing everyone combindly with factory proprietor for ensuring rights



B Opinion of discussing everyone combindly with factory proprietor for ensuring rights

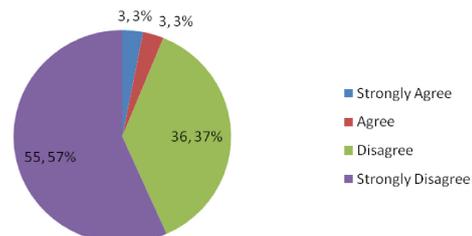


FIGURE 14 | Respondents' perception of workers' organization at compliant and non-compliant RMG factories (A, B). Source: Gathered and analyzed by the researcher.

Test of hypothesis

Null hypothesis. There is no association between compliance with labor standards and the RMG sector in Bangladesh.

After performing the calculation, the chi-square calculated value is 172.81. The result of degrees of freedom is $(r-1) * (c-1) = (2-1) * (2-1) = 1$. The chi-square table value is 3.841. According to the chi-square test, at a 5% level of significance and 1 degree of freedom, the chi-square table value is 3.841. So, chi-square Cal > Cal table value. As we know, if the calculated chi-square value exceeds the critical chi-square value from **Table 1**, the null hypothesis, that is refuted. So null hypothesis, there is no association between compliance with labor standards and the RMG sector in Bangladesh, is disapproved. So, there is a substantial relationship between compliance with labor standards and the RMG sector in Bangladesh (36).

Discussion

This study explored the impact of compliance on workplace conditions in Bangladesh’s RMG sector, focusing on labor standards, safety measures, and workers’ rights. The findings provide a comprehensive picture of the differences between compliant and non-compliant factories, highlighting the crucial role of compliance in shaping the overall well-being of workers.

TABLE 1 | Compliance vs the RMG sector in Bangladesh.

Level of compliance	Improved	Not improved	Total
High compliance	209	12	221
Low compliance	23	74	97
Total	232	86	318

Here, chi square test has been used for calculation.

Expected value:

High compliance	161.26	59.74	221
Low compliance	70.74	26.26	97
Total	232	86	318

Source: Gathered and analyzed by the researcher.

One of the important findings is the gender distribution of workers, where female participation is higher. This demographic reality emphasizes the need for compliance policies that are gender-sensitive and prioritize occupational safety for women. Younger age groups, particularly those between 18 and 30 years, dominate the workforce, reflecting the sector’s reliance on a physically active and easily trainable labor pool. This demographic reality underscores the need for compliance policies that are gender-sensitive and designed to safeguard the rights of younger workers who may lack awareness or bargaining power.

Occupational distribution shows that operators form the largest segment, followed by finishing and helper positions. This confirms the structural hierarchy within factories, where the majority of workers are concentrated in low-skilled roles with limited opportunities for upward mobility. The lack of significant representation in supervisory positions suggests that compliance initiatives should also focus on training and career development to enhance workers’ long-term prospects.

Comparative findings between compliant and non-compliant factories reveal stark contrasts. In compliant factories, working hours were generally maintained within 8–10 hours per day, with overtime compensated in line with international labor standards. Workers also expressed strong satisfaction with workplace safety, access to sanitation, healthcare facilities, and welfare services. Fire safety equipment, ventilation, and illumination were reported to be adequately maintained. These outcomes suggest that compliance not only fulfills external buyer requirements but also directly contributes to a healthier and safer working environment for employees.

By contrast, non-compliant factories were characterized by extended working hours, lack of proper overtime payments, inadequate safety systems, and insufficient access to healthcare and welfare facilities. Respondents frequently highlighted violations such as poor sanitation, absence of cafeteria and washroom facilities, and failure to ensure workplace safety training. The persistence of child labor and forced labor in some non-compliant factories further underscores the seriousness of these violations and the urgent need for enforcement. These conditions point to systemic weaknesses in monitoring mechanisms and raise questions about the effectiveness of regulatory oversight.

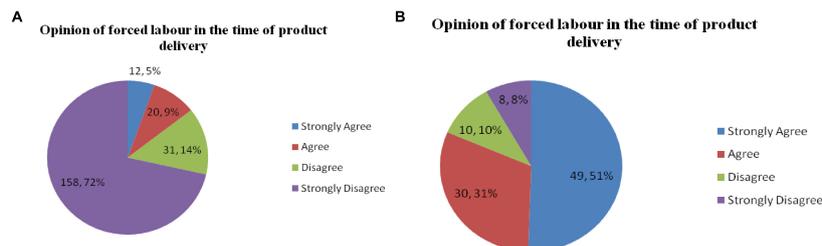


FIGURE 15 | Respondents’ perception of forced labor at compliant and non-compliant RMG factories (A, B). Source: Gathered and analyzed by the researcher

An important insight from this research is the association between compliance practices and workers' perception of safety and dignity in the workplace. Chi-square test results confirmed a significant relationship, reinforcing the idea that compliance is not merely symbolic but an effective tool for improving workplace standards. Rejecting the null hypothesis indicates that compliance is not an incidental or irrelevant factor but rather a critical determinant shaping workplace conditions, workers' welfare, and the sustainable growth of the industry. It implies that compliance is not limited to fulfilling buyer requirements but plays a transformative role in creating a healthier and more equitable workplace environment.

Workers in compliant factories consistently reported greater satisfaction across multiple indicators, suggesting that adherence to labor regulations creates measurable improvements in working conditions.

The findings also highlight the gap between formal compliance requirements and practical enforcement. While compliant factories demonstrate the benefits of following ILO conventions, the presence of non-compliant factories reveals that enforcement remains inconsistent. Strengthening institutional capacity and increasing accountability mechanisms are essential to bridge this gap.

The strength of this study lies in its focus on workers' perspectives from both compliant and non-compliant factories, providing a comparative understanding of the issue. However, some limitations must be acknowledged. The study relied on cross-sectional data, which restricts causal inferences. In addition, the research was conducted only in Dhaka City, limiting the generalizability of the findings to other regions. Future studies could expand the geographical scope and adopt a longitudinal design to better capture long-term changes.

Overall, the study contributes to the growing body of evidence that emphasizes the critical role of compliance in shaping labor standards in Bangladesh's RMG sector. Ensuring consistent enforcement of compliance policies can help address the gap between regulation and practice, thereby safeguarding workers' welfare and promoting the sector's sustainable development.

Conclusion

This study provides a brief overview of the impact of compliance with labor standards on the working environment of Bangladesh's RMG sector. The findings show that factories adhering to compliance guidelines offer better workplace conditions, including regulated working hours, proper safety measures, access to healthcare, and improved welfare services, compared to non-compliant factories. These outcomes demonstrate that compliance is not only a regulatory formality but also plays a central

role in ensuring workers' well-being and enhancing overall industry standards.

The study also highlights important demographic considerations, such as the predominance of female and younger workers, which underscores the need for gender-sensitive policies and protections for less experienced laborers. The association between compliance practices and workers' perception of safety and dignity was further confirmed through statistical analysis, reinforcing the central objective of the research to evaluate the practical effects of labor compliance in the RMG sector.

Some limitations of this study include the use of cross-sectional data, which restricts causal interpretations, and the focus on factories in Dhaka, limiting the generalizability of the findings.

Future research should aim to broaden the geographical scope beyond Dhaka, including other industrial hubs and rural areas where RMG factories operate, to capture a more representative understanding of labor compliance across the country. Longitudinal studies would be valuable to track changes in workplace conditions and compliance practices over time, providing insights into the sustainability and long-term impact of labor standards. Additionally, further studies could examine the effectiveness of specific compliance interventions, such as worker training programs, gender-sensitive policies, and enforcement mechanisms, to identify best practices that can be scaled or adapted. Investigating the perceptions of different stakeholders—including factory management, international buyers, and policymakers—could also enhance understanding of the systemic challenges and opportunities in improving labor standards. Collectively, these research efforts would contribute to a deeper, evidence-based understanding of how compliance affects workers' welfare, factory productivity, and the sustainable development of the RMG sector.

Overall, the study confirms that consistent enforcement of labor standards is essential for safeguarding workers' rights and promoting sustainable development in the RMG sector, fulfilling the main objectives of this research.

Equation

In this study, all equations have been inserted using the Equation Editor in editable format. The main statistical test applied in this study is the chi-square test, which is used to examine the relationship between compliance with labor standards and the RMG sector in Bangladesh. The chi-square formula is expressed as:

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

O_i = Observed frequency in each category

E_i = Expected frequency in each category

Author contributions

AA: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Interpretation, Writing – original draft, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

List of abbreviations

BGMEA, Bangladesh Manufacturers and Exporters Association; BKMEA, Bangladesh Knitwear Manufacturers and Exporters Association; DIFE, Department of Inspection for Factories and Establishments; EU, European Union; FSCD, Department of Fire Service and Civil Defence; GoB, Government of Bangladesh; ILO, International Labor Organization; IFC, International Finance Corporation; MoLE, Ministry of Labor and Employment; NTPA, National Tripartite Plan of Action; OSH, Occupational Safety and Health; UN, United Nations; WTO, World Trade Organization.

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