



Industrial Accidents in Bangladesh Apparel Manufacturing Sector: An Analysis of the Two Most Deadliest Accidents in History

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Abstract

The purposes of this study are, firstly to investigate the two recent industrial accidents: the collapse of Rana Plaza and the fire at Tazreen Fashions, and secondly, to find out the reasons behind these accidents. The study particularly focuses on the readymade garment (RMG) sector in Bangladesh. It is qualitative in nature and follows an interpretivist and constructivists philosophical paradigm. Data were collected through triangulation method which uses two deviant cases (Rana Plaza and Tazreen Garments), and responses from a qualitative questionnaire. The questionnaire sample includes 16 male participants from 8 RMG factories located in Dhaka. All the participants were top-level executives at those factories (i.e. owners and general managers). The study finds that non-compliance with the occupational health and safety (OHS) provisions and the evasive nature of the factory owners were the main causes of the accidents. The study also discovers that there is a significant difference in the OHS practice among the factory owners of the outsourced and the subcontracted factories. The study further explains the rationale behind this difference.

Keywords: Occupational health and safety, Readymade garment, Industrial accident, Negligence, Evasion.

JEL Classification: J28.

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1. Introduction

Workplaces in lower cost emerging economies have undergone continuous and substantial changes due to the outsourcing and offshoring practices of the European and North American countries (Manning *et al.*, 2008; Contractor *et al.*, 2010; Dey *et al.*, 2012). In many of these developing countries apparel manufacture and export has become the main source of remittance (Haider, 2007; Contractor and Mudambi, 2008). This study focuses on Bangladesh, a lower cost emerging economy, where readymade garment (RMG) manufacturing and export has become a lifeline for both urban and rural people. It is the only major labour intensive sector of the country with huge employment-generating potential and the biggest source of remittance earnings. Nonetheless, the several disasters that have occurred in garment factories, claiming thousands of lives, have notoriously become the subject of much concern recently, both in the country itself, as well as internationally among the globally renowned buyers, trade unions, and monitoring authorities. As a result, despite the phenomenal success of the RMG industry in Bangladesh in the last two decades, workplace accidents have led to a downturn in the growth of this sector in the past few years. The industry has been plagued by building collapses, frequent fires, and other avoidable industrial incidents. Only in the last four years, almost 4,500 garment workers were injured, crushed, burnt, trampled or killed in preventable workplace accidents (Al-Mahmood, 2013; BBC - British Broadcasting Corporation, 2013a). The recent worst-ever industrial accident in the country, the collapse of Rana Plaza in 2013, caused the deaths of 1,129 workers and the life-threatening injuries of 2,515 workers (CPD - Centre for Policy Dialogue, 2013; ILRF — International Labor Rights Forum, 2013) and the fire at Tazreen Fashions in 2012, caused the deaths of 117 workers and severely injured a further 200 workers (Al-Mahmood, 2013; BBC, 2013a). These accidents have not only shocked the entire nation, but also the other nations of the world, stimulating outrage among people at the failure to ensure a safe and healthy work environment (Alam and Hossain, 2013).

The importance of OHS is being increasingly realised in Bangladesh, and likewise in other developing countries which are undergoing rapid industrialisation. In Bangladesh, as in other countries of the West, the responsibility for health and safety at work is placed on the employer, although the government has some kind of occupational health care services and safety standards. OHS services are provided as benefits by employers and are generally separate from other community benefits. In Bangladesh, there are labour laws and other OHS compliance provisions for RMG factories which are imposed and implemented by different authorities, like the government of the country, the Bangladesh Garments Manufacturers and Exporters Association (BGMEA), the International Labor Organization (ILO), and the global supply chain (e.g. foreign retailers) who place their work-orders with local Bangladeshi factories. All these compliance provisions adequately cover health and safety issues.

Given the proliferation of the practice of all the OHS provisions, it is observed that the number of workplace accidents has increased rapidly in the last five years. This study, therefore, aims to investigate the two recent industrial accidents: the collapse of Rana Plaza and the fire at Tazreen Fashions, and then attempts to find out the reasons behind these accidents. The researchers' ontological position confirms that people's knowledge, views, understanding, interpretations and experiences are meaningful properties of the social reality which their research questions are designed to explore. So, the epistemology framing of this qualitative research is interpretivism and constructivism. Therefore, the study presents two case studies and questionnaire responses to facilitate an in-depth, detailed examination of these two deviant events. To illuminate and further investigate the research questions, the cases and questionnaire responses allow the researchers to generate some themes for further analysis of the phenomenon.

2. Literature Review

OHS practice is considered as an important issue for organisations to deter industrial accidents (Walton, 1985; Whitener, 2001). According to Zacharatos *et al.* (2005) managers of successful organisations comprehend that in order to make most out of the organisational system, it is important to ensure that the employees are safe, sound, and healthy at work. Proper compliance with OHS legislations can help organisations avoid the costs of litigation arising from poor health and safety standards (Gilmore and Williams, 2009). Jyothi and Venkatesh (2011) claimed that the safety and protection of employees carry greater financial implication than many in corporate leadership roles recognise. It creates a ripple effect that can influence immediate and long-term costs. As perfectly stated by Robens (1972, cited in Browne (1973) "*accidents prevention can be integrated into the overall economic activity of the firm*". It is, therefore, argued that employers must apply the same effort and creativity to designing and maintaining a healthy and safe workplace as they customarily apply to other facets of the business.

Empirical evidence suggests that safe and healthy working conditions have a positive relationship with employee satisfaction, performance, and productivity. Deussom and Adams (2012) claimed higher worker productivity when OHS conditions are fulfilled in workplaces. Arboleda *et al.* (2003); Vredenburg (2002); Vassie and Lucas (2001) and McDonald *et al.* (2000) considered health and safety management practices as antecedents of safety culture in different organisational setups like transportation, healthcare, aircraft maintenance, and factory environment. Harvey and Gavigan (2014) carried out a research on workplace stress, injuries and violence and subsequent OHS practices in Canadian workforce and concluded that reducing workplace stress through improved OHS and human resource management practices can lead to reduced OHS injuries, accidents and violence, and associated costs, as well as absenteeism, turnover, and litigation. Robertson *et al.* (2011) and Carter (2010) in their research in Cambodia and Nepal, and Concha-Barrientos *et al.* (2005) in their study in the US workforce found that a safe and healthy work environment can increase productivity and profitability. Asuyama *et al.* (2013) found positive performance changes among Cambodian RMG factories due to increased OHS participation. The study of Morillas *et al.* (2013) of Sweden and Spain revealed that there were considerably fewer accidents in factories due to the implementation of OHS measures. Noweir *et al.* (2013) in their research on the Kingdom of Saudi Arabia, Hori (2012) in his research on Japan, Saifullah and Ismail (2012) in their investigation on Malaysia, and Geldart *et al.* (2010) in their research on Canadian firms, also generated similar findings. Similarly, a systematic risk management approach that involves treating workplace accidents as a problem — that requires employers' good judgement and conformity to the

regulations and technical solutions — is found to be adopted by Australian employers (Walters, 2004). Their risk management approach was equipped with the implementation of deterrent elements like health and safety policies, risk assessment, safety plans and auditing, and training employees through qualified personnel from diverse backgrounds to deliver risk management services (Walters, 2004). These empirical studies prove that OHS provisions are considered as a major way of safeguarding workplaces against accidents.

In context of Bangladesh the relationship of an OHS-regulated, safe work environment with organisational productivity and worker satisfaction was examined by Nur (2013); Ahmed (2012); Yunus and Yamagata (2012) and Berik and Rodgers (2008) where the implementation of OHS worked as a deterrent to accidents. From these studies, a safe work environment was found to have a positive effect on labour productivity. Similarly, Akram (2014); Ahmed and Hossain (2009) identified that in the RMG sector standard work environment can lead to higher worker satisfaction and retention rate. This is further supported by BILS - Bangladesh Institute of Labour Studies (2005) as in their research they found the relationship between OHS practices with work efficiency, performance, and worker satisfaction in Bangladeshi RMG factories. Furthermore, Rahman and Hossain (2010) concluded that regular practice of OHS and compliance with the Code of Conduct (CoC) conditions of global supply chain can result in low labour unrest and turnover, and high worker morality and productivity. So, a healthy and safe work environment can reduce operating costs and improve organisational effectiveness, based on the notion that the well-being of staff is an integral feature of successful organisations (MacDonald, 2005).

OHS is an integral part of the management system, woven into each management competency and a part of everyone's day-to-day responsibilities (Pierce, 2000). It is the moral and legal obligation of the employers to provide a safe work environment for the employees and workers (Jyothi and Venkatesh, 2011). In Bangladesh it is a legal requirement for any RMG factory owner to administer and comply with the country's labour law and other OHS provisions imposed on them. Yet, there still are employers who seem to take safety less seriously than they should. Evidence can be found from empirical studies that, during the last decade, the majority of workplace accidents that occurred in the RMG sector in Bangladesh were related to the employers' lack of administration, negligence and avoidance of the OHS provisions (Bhuiyan and Haq, 2008; Ahmed and Hossain, 2009; Alamgir and Haque, 2013; ILO — International Labor Organization, 2013). The societal expectation from the factory owners is that they should have a rational choice with regard to undertaking responsible business practices. Thus, they must have a reasonable understanding of the OHS regulations and policies imposed on them by the Bangladesh government and BGMEA, as well as by the global supply chain, and ILO, in order for the regulation to work as a deterrent factor to occupational accidents. However, this does not seem to be the case. As discussed earlier, the explicit reason for the confounding number of workplace deaths in the RMG sector is the reluctance observed among many factory owners with regard to conformity to the OHS provisions (Ahmed and Hossain, 2009; Zaman *et al.*, 2013). The evidence shows that these high-status people in society are uninterested in making calculative decisions to implement OHS as an incentive to safeguard their factories against undesirable catastrophes. For instance, in terms of workplace casualty, in the UK, a total of 148 people were killed while at work in the year 2012 to 2013 (HSE — Health and Safety Executive UK, 2013). This is a significantly low number compared to the several thousand deaths in Bangladesh's RMG sector alone during the same time period. The decreasing tolerance for industrial and workplace accidents, the rising complexities associated with these incidents, and the growing recognition that health and safety forms an important subgroup of organisational contingencies affecting the management practices underscore the need to understand how work and organisational design shape objective patterns of interaction and behaviour and subjective feelings about the employment relationship (James and Walters, 2002; Bratton and Gold, 2003). The involvement of ILO, global supply chain, and the local government in shaping the country's OHS system and imposing the OHS provisions on factory owners reaffirms the importance of practicing OHS requirements. On the question of the importance of OHS, although economic cost and management considerations will always be predominant for the organisation, the costs of ill-health, work related accidents and deaths are not only borne by the victims, the families and their employers: the costs of these undesirable workplace incidents are also clearly borne by the taxpayer and public sector services. However, reliable estimates of the total cost of occupational ill-health and accidents are incomplete as a result of the low priority given to this area in Bangladesh. Although the above mentioned studies have focused on areas like the brief discussions on the workplace accidents, technical and government failures of the successful OHS implementation and importance of OHS to protect workplaces from accidents in the country's context, a systematic and detailed investigation of the workplace accidents has not been done by these researches.

3. Methodology

Contextual conditions and the perception of individual respondents are of extreme importance to this study. Therefore, this study uses a 'data triangulation' from two cases and qualitative questionnaire for data collection and interpretation of the phenomenon in order to obtain an accurate representation of the reality. Through triangulation, an accurate representation of reality is possible (Polit and Hungler, 1999) and it provides a rich and complex picture of some social phenomenon being studied (Mathison, 1998). The topic of this study demands an approach to be more receptive to meanings in human interactions and capable of making sense of what is perceived as multiple realities. As a result, the researchers' selection of these two qualitative methods to achieve triangulation to conduct the study are valid and the evidences generated through this methodology can be confirmed robust and reliable.

Two deviant and extreme cases: (a) The Fire at Tazreen Fashions Limited, and (b) The Collapse of Rana Plaza, have been used to aid the analysis. These case studies give a more detailed picture of workplace accidents within the Bangladeshi context to show what can happen in an extreme situation. According to Baxter and Jack (2008) the case study approach provides tools for researchers to analyse complex phenomena within their contexts. It allows researchers to explore individuals or organisations by intervening in their context and relationships, and supports the deconstruction and subsequent reconstruction of various phenomena (Yin, 2009). The case based approach is also suggested by Schofield (2007) and Leedy (1997) since case study is the 'fact' of any particular issue, the contents of which require an in-depth focus on the social science area to understand its phenomenon on the basis of it being an

individual problem. Furthermore, [Blumberg et al. \(2011\)](#) claimed that case studies shed more light on a phenomenon from multiple perspectives as defined by its context compared to other approaches. In this study, the case study method gives the researchers flexibility and similarly ensures that the answers to the research questions are not explored “*through one lens, but rather a variety of lenses*” ([Baxter and Jack, 2008](#)) which allow for multiple facets of the phenomenon to be revealed and understood.

The cases are prepared based on secondary data analysis. Both cases are descriptive in nature and were chosen to describe the phenomenon (e.g. workplace accidents that occur due to occupational health and safety negligence) and the real-life context in which it occurred. Secondly, by keeping in mind the complex scenario of the CoCs of the global supply chain, and subcontracting nature of the business, the cases are presented with respect to the information obtained through authentic sources like actual compliance audits performed by leading auditors from internationally renowned consumer product manufacturing companies, and from other archival records. The reason for choosing multiple cases over a holistic case is that it allows the research to analyse the phenomenon within each setting and across setting, thereby making it possible to examine the similarities and differences between the phenomena. According to the framework of [Creswell \(2006\)](#) and [Stake \(1995\)](#) the case studies contain the following aspects:

- Arrangement of the details of the case events in a logical and sequential order
- Data to put into meaningful groups or categories
- The sources of evidence (such as quotes and statements) to be examined in relation to the case.
- Different patterns or themes to be identified from the case data
- The patterns or themes are to be analysed further in detail
- Conclusion of the case

This study follows the qualitative questionnaire as a second method of the triangulation process. By following the property of intensity sampling 8 Bangladeshi RMG factories located on the outskirts of Dhaka were selected. This selection was aided by the members’ directory published by the Bangladesh Garments Manufacturers and Exporters Association (BGMEA). All of these factories are outsourced (i.e. they take work-orders directly from the foreign retailers), 100% export-oriented, and they manufacture apparel for European and North American retailers. Through this intensity sampling, the researchers selected a small number of rich discussions that provide in-depth information and knowledge of the phenomena of interest. In order to establish a purposeful sample providing saturation, guidance was taken from [Creswell \(2006\)](#) who suggested saturation for his study at 5 to 25 participants, while [Morse \(1994\)](#) suggested at least 6 participants. However, [Mason \(2013\)](#) argued that the cut-off point is always inevitably arbitrary, and thus focused on the richness of data and the interaction between the researcher and respondent to yield rich insights rather than quantity. This research, therefore, utilised an intensive structured questionnaire with a sample size of 16 respondents (2 from each factories), considering that the quality of the data depends on the point of saturation and feasibility, from which no new information would hope to be gathered from the respondents. All the respondents were male, top-level executives of the factories (e.g. owners and managers). The questionnaire was designed to take approximately 30 minutes to complete and the responses were submitted online with the aid of Google Docs. The target respondents were the garment factory owners. The questionnaire was split into 5 sections consisting of 22 questions, as follows:

- Section 1: The purpose, target respondents, time frame and ethical issues were presented.
- Section 2: Instructions to fill out the questionnaire were provided.
- Section 3: 5 questions were asked to gather information about the participants and their job.
- Section 4: 5 questions were provided to collect information about the factory.
- Section 5: 12 questions were asked about the OHS provisions and compliance issues.

It is to be noted that, this research did not collect any data from the people associated with Rana Plaza and Tazreen Fashions through interview or questionnaire, due to the severity of the accidents in these two establishments which left the workers, employees and other associated people bereaved, shocked, and traumatised. The aim of this study does not cover the involvement of any respondent from such a vulnerable group.

4. Case Studies

4.1. Case One: The Fire at Tazreen Fashions Limited

Tazreen Fashions Limited is a sister concern of Tuba Group, which is a large business corporation in Bangladesh. Situated in the Ashulia district on the outskirts of Dhaka, the factory was established in 2010 and employs 1,500 workers ([Document Cloud, n.d](#)). It produces apparel for American, British, German, Italian, Spanish and Swedish buyers including Carrefour, Delta Apparel, Dickies, Disney, Edinburgh Woollen Mill, El Corte Ingles, Enyce, IKEA, Karl Rieker, KiK, Piazza Italia, Sears, Teddy Smith, Walmart, and the U.S. Marine Corps ([Bergman and Rashid, 2012](#); [Mosk, 2012](#); [CCC - Clean Clothes Campaign, 2013](#)). On 24 November 2012, fire broke out in the factory at around 7 p.m. while it was in operation. Although the total number of people who were killed and injured due to the accident cannot be verified due to the inconsistent reports of journalists and the media, researchers and investigators later estimated these to have been 111-124 deaths and 200-300 people injured ([Ahmed, 2012](#); [Bergman and Rashid, 2012](#); [AMRC - Asia Monitor Resource Centre, 2013](#); [Ross, 2013](#); [Zaman et al., 2013](#); [BBC, 2013a](#)).

According to the report of the Asian Network for the Rights of Occupational and Environmental Victims, it is believed that more than 1200 people were working inside the nine-storey building when the fire began ([AMRC, 2013](#)). Eyewitnesses and fire defence officials mentioned that the fire broke out on the ground floor, where piles of fabric and yarn were stored in an open space when they should ideally have been stored in a room with fireproof walls. The blaze quickly spread across the ground floor and fire and toxic smoke spread to the upper floors. Many employees tried to escape via the interior staircase, as the factory lacked a sprinkler system or fire exit ([CCC, 2013](#)). However, it was also reported that the managers on a few floors ordered workers to continue working despite hearing the fire alarm, assuming it to be a fire drill. With the locked gates on most of the floors of the nine-storey factory, this initial refusal to evacuate left many workers trapped inside when the fire engulfed the entire building. The smoke-

filled staircases and iron grilles on the windows prevented the trapped workers from escaping. A few desperate workers managed to break windows and escape, while others jumped from the upper floors to the ground, which left them badly injured or dead. A few others managed to leap onto the roof of a nearby building (Manik and Yardley, 2012). According to the Bangladesh Fire Service and Civil Defence official Abu N M Shahidullah and operations director Mahbubur Rahman, most of the workers who died due to the lack of adequate exits and suffocation by smoke were on the first and second floors. In addition, these officials highlighted that the factory lacks necessary closed-circuit television monitoring system and had not received an operating licence from the fire service authority upon the expiration of the previous one (Bustillo *et al.*, 2012).

Afterwards, the Bangladesh Occupational Safety, Health and Environment Foundation (OSHE) carried out an independent investigation into the incident to highlight the root causes and failures. Some of the major identified causes were: no fire or emergency exits or stairways, the provision of only one main entrance and exit on the ground floor which was itself insufficiently wide to accommodate the number of workers in the factory, inadequate fire extinguishers and fire defence materials, locked collapsible gates on different floors that stopped workers from evacuating when the fire alarm went off, the factory owner's negligence with regard to following the building code (constructing a nine-storey building when there was permission to build only three floors), raw materials storage on the ground floor in close proximity to high voltage electricity transformers, the expired fire safety certificate, and the lack of fire safety training (only 40 of the 1,500 workers had attended basic fire safety instruction) (AMRC, 2013). It was also found that the fire extinguishers available in the factory were not used at the time of the incident. This ignorance and carelessness among the floor managers and workers reflect the irresponsibility and severe negligence of the management in understanding the importance of following the occupational health and safety (OHS) guidelines. Industry officials and rescuers stated that the people who could not escape from the fire were burnt alive and many of their bodies were beyond recognition, as they were burnt to ash along with the raw materials and equipment, thus creating confusion about the actual number of deaths (Bajaj, 2012; Chowdhury, 2012; Mezzofiore, 2012; New Age, 2013; Ross, 2013). Furthermore, the inquiry report of the Ministry of Home Affairs Bangladesh stated that the utmost negligence of the factory owner was responsible for the accident and the subsequent deaths of the workers. The report blaming the factory owner for negligence, further identified that nine mid-level managers and supervisors prevented the workers from leaving the workplace even after the fire alarm had gone off. It was also suggested by the report that the fire was 'an act of sabotage', although no evidence was brought forward to support this claim (Manik and Yardley, 2012). *"We have come to the conclusion that it was an act of sabotage. We are finding out as of now who exactly the saboteurs are and all culprits will be brought to book"*, said the interior minister M K Alamgir (Mosk and Berkowitz, 2012). The government enquirer M U Khandaker claimed that the investigation had found no evidence of an electrical short circuit, and that eyewitnesses had suggested possible foul play (Manik and Yardley, 2012). Accordingly, the BGMEA termed the accident 'sabotage', claiming that people had infiltrated the factory and that there might have been an ill-motive behind the fire (News Network, 2012; AMRC, 2013). However, this assertion of the government and BGMEA has exposed the deep tension among many researchers and investigators, as they also claim that the severe negligence and carelessness of the factory owners have been contributing to the disastrous industrial accidents in Bangladesh for decades (Ahmed and Hossain, 2009; Zaman *et al.*, 2013). Given the proliferation of the use of the OHS provisions as a deterrent to workplace accidents, the factory owners' unwillingness to act rationally is resulting in a havoc in the overall apparel manufacturing sector of the country. Israfil Alam, the Bangladesh government's spokesperson from the Ministry of Labour and Employment, criticised these 'sabotage' claims, terming the accident as 'act of arson'. He commented that these reports were designed to save the employer of the factory and termed them ill-motivated, defensive and biased. He concluded by saying, *"The garment factory owners are yet to become humans. They are still owners of garment factories!"* (AMRC, 2013). Regardless of the source of the fire, it is verified that the serious level of unsafe working condition within the factory and the negligence on the part of the factory management team were the primary reasons for such an accident and the resulting death toll (BBC, 2012).

4.2. Case Two: The Collapse of Rana Plaza

Rana Plaza was a nine-storey commercial building, located in Savar, a sub-district of Greater Dhaka. It housed five separate RMG factories, employing around 5,000 people on different floors, several shops, and a bank. The first three floors of the building contained around 300 shops and the bank whereas the five RMG factories occupied the higher floors, and the ninth floor was under construction. These RMG factories had been manufacturing apparel for 28 retailers from Canada, Italy, Ireland, Spain, the UK and the USA, including brands like: Benetton, Bonmarché, El Corte Ingles, Joe Fresh, Mango, Matalan, Primark, The Children's Place, and Walmart (Luckerson, 2013; O'Connor, 2013; Smithers, 2013). The building was owned by Sohel Rana, a leading member of the local wing of the ruling political party, the Awami League (BDnews24, 2013).

The building collapsed at about 9 a.m. on 24 April 2013, with a death toll of 1,129 lives and approximately 2,512 injured (Alam and Hossain, 2013; Butler, 2013). Within hours of the collapse, the United Nations offered to send expert rescue teams with dogs, micro-cameras and other equipments to the site, but this offer was rejected by the government authorities. Similar offers of international search and rescue assistance, including a formal offer to send a team of specialists from Britain, were also rejected (Nelson, 2013). Although the local rescuers provided food, water, and oxygen to those trapped and tried their best to rescue them; the pace of the rescue operation was slow due to lack of necessary training, tools and equipment. The relatives of the victims vented their anger over the slow pace and attempted to participate in the rescue operation by removing the debris with their bare hands. The general public and different organisations responded spontaneously and contributed cash, food, medicine and equipments, according to their capacity (Mustafa, 2013).

According to the report by the Centre for Policy Dialogue, 1,129 dead bodies were recovered, 2,438 workers were rescued alive from the rubble, and a large number of people remain missing since the accident took place (CPD, 2013). It is estimated that a total of 332 people who were working in different factories located in the building could

not be identified. The preliminary results of a government inquiry found that heavy machinery, high-capacity generators, and the use of substandard materials during the construction of the building were largely responsible for its collapse. The inquiry official also suggested that the top three floors of the nine-storey building were added without the permission of the planning authority and that the building had been constructed on marshland which, in turn, could have been the root cause of its faulty structure (Campbell, 2013; Than, 2013; Watkins and Ahmed, 2013). Similar results were found by a BGMEA investigation committee who identified nine causes for the Rana Plaza collapse, including deviation from the original building design and layout, shoddy construction, the low capacity of the pillars, the installation of heavy generators on the rooftop, the inappropriate use of the building for industrial rather than retail purposes, and the setting up of heavy machines in the garment factories (APPG - All Party Parliamentary Group, 2013; Hossain and Alam, 2013). Afterwards, other experts and analysts also concluded that the very low-quality construction materials, poor structural design, under-developed swampland on which the building was constructed, the piling up of heavy industrial machinery on the upper floors, the lack of a fire escape, and the complete absence of building safety standards also contributed to this incident (Manik and Yardley, 2012; Asif, 2013; BBC, 2013b). A number of officials reported that the building showed cracks on the day before its collapse, and recorded footage of the cracks were shown in various TV channels. But Sohel Rana, its owner, dismissed these as ‘nothing serious’. He later claimed to the media that the building was safe to use and the workers should return to work (Libcom, 2013). “The building is strongly made to last the next 100 years, so get back to work. Nothing will happen to you”, Sohel Rana was reported to have told the workers on the morning of the disaster when they refused to enter the factories (Clothes to Die For, 2014). While the bank managers and shop owners took the cracks seriously and kept their respective offices closed on the day of the collapse, the garment factory owners along with Sohel Rana ignored the risk and kept the factories open. Many survivors reported that the managers of the factories ordered the workers to ignore the potential risk and return to work. They threatened the workers by saying that their salaries would not be paid if they did not follow the order, and thus the workers were forced to return to work (Clothes to Die For, 2014). Four days after the accident, Sohel Rana was arrested as he was attempting to flee to India. In March 2014, he was granted six month’s bail in the High Court (Daily Star, 2014).

Because of the severity and intensity of the accident, this incident is now being considered the most devastating RMG factory accident in history, as well as the worst accidental structural failure in modern human history (Hossain and Alam, 2013; BBC, 2013b).

5. Findings

After analysing case one, it appears that the main reason for the accident was the negligence of the owner and the midlevel managers of the factory in practicing the OHS provisions properly. Despite hearing the fire alarm, the managers prevented the workers from evacuating the workplace by locking the collapsible gates on several floors. This caused many workers to become trapped inside the building. Another reason for the accident is the lack of adequate fire exits. Moreover, the storage of raw materials like fibre and yarn in an open space near the high voltage electric transformers accelerated the spread of the flames. Also, the lack of sufficient fire extinguishers and inadequate preparedness and training to handle accidents contributed considerably to the incident.

The analysis of case two suggests that the main reason for the accident was the negligence of the owner of the building and the owners of the RMG factories in practicing the OHS provisions adequately. Despite noticing the cracks in the building the day before the accident, the owners neglected the risk factor and forced the workers to return to work. Other reasons that contributed to the accident included the violation of the original building design and specifications by adding additional higher floors, the use of substandard materials during the construction on marshland, the installation of heavy generators on the rooftop, setting up heavy machinery in the factories, and, the complete absence of security and safety measures within the building.

The questionnaire responses received from the 16 respondents indicate that most of the respondents have little or no knowledge about the new national labour law, *and also possess very little understanding of the terms and conditions of the CoCs provided by the foreign retailers*. From the cases and questionnaire responses, the following themes emerge:

Theme 1: The factory owners’ understanding of the OHS provisions and practices

Theme 2: The factory owners’ negligence in administration of the OHS provisions

Table-1. Contributing factors of the accidents of the two cases

Factors	Tazreen Fashions	Rana Plaza
Number of illegal construction of unapproved factory floors	6 floors	3 floors
Main cause of the accident	Fire from electrical short-circuit	Building collapse for shoddy construction
Inaccessible emergency exits during the accident	Yes	Yes
Absence of fire extinguishers & sprinklers	No, but inadequate	Yes
Absence of adequate safety standards	Yes	Yes
Absence of periodical fire drill	Yes	Yes
Narrow and insufficient staircases	Yes	Yes
Non-guidance and no support from the floor managers & supervisors during the accident	Yes	Yes
Unskilled and inexperienced managers & supervisors to tackle workplace accidents	Yes	Yes
Unauthorised use of factory floors to install heavy machineries	Yes	Yes
Poor building structure	Yes	Yes
Building constructed for industrial use	Yes	No
Violation of OHS provisions	Yes	Yes

5.1. Theme 1

This theme is discussed based on the participants' questionnaire responses relating to their understanding of the existing OHS provisions and practices. The respondents were asked several questions to establish their knowledge about the existing OHS provisions (e.g. Bangladesh Labour Act, 2006 and its amendment in 2013, CoC of BGMEA and foreign retailers, ILO ratifications). Surprisingly, only 2 respondents were found to be aware of the specific sections of the Bangladeshi labour act which deal with health and safety issues. The remaining 14 respondents answered that they are aware of the existence of the labour act but could not list any specific OHS sections of it. Similarly, none of the respondents could remember any of the ILO conventions on OHS issues related to the RMG industry which the country has ratified. However, half of the respondents were able to highlight some of the basic security and safety requirements (e.g. the provision of fire drills, emergency exits, etc.) mentioned in the CoC of BGMEA and specific CoCs of the foreign retailers. A number of questions explored the participants' opinions about the existing OHS provisions. All of the respondents agreed to the point that the appropriate implementation of the existing OHS provisions can deter accidents successfully. However, further analysis of their answers revealed that most of the participants face various difficulties to comply with the OHS provisions in terms of the availability of experienced and expert health and safety management personnel, and the cost of implementing an efficient OHS plan in their factory in order to comply with the national legislation. For example, one employer commented, "...there is no training centre or institute from where a person can learn safety and security related issues to practice OHS in our factories. We rely on our common sense and instinct when it comes to safety measures". Similarly, another respondent commented, "BGMEA training institute is the only place to get training on it [OHS issues]. This is a very little facility for an industry of this big size".

Furthermore, the cost of implementing a strategic OHS plan is also seen as a major hindrance by the factory owners. Because of the worldwide improvement in health and safety issues (Janicak, 2008; Sousa et al., 2014) which significantly improved the OHS conditions in advanced nations (Bjerkkan, 2010; Geldart et al., 2010; Noweir et al., 2013) there exists a contrasting situation in the RMG sector in Bangladesh where the number of accidents has increased significantly. The global supply chain has also become stricter about the implementation of advanced OHS measures and demands that all local factories must comply with their advanced OHS standards. This pressure places the local factory owners in a difficult situation. Das (2008) found that an abrupt decrease of CMT (i.e. cut the fabric, make and trim the garment) price paid by foreign retailers in recent years, and increasing pressure to comply with their individualistic CoCs with advanced OHS requirements have resulted in additional expenditure in the form of overhead costs for the majority of factory owners. The frustration among the factory owners is reflected in the comment of one respondent, "...they [the foreign retailers] must understand that this is a poor country and the government itself does not have enough resources to support our industry. How can we comply with all their [global buyers] requirements when the country cannot provide any security for our investment and the buyers reduce their payment rate significantly?"

It is important to note that a large number of these outsourced garment factories are involved in 'subcontracting'. This process of subcontracting occurs without the knowledge of the foreign retailers and is unauthorised by them. For example, Rana Plaza housed 5 garment factories, most of which were subcontracted factories. None of these factories received any direct work-orders from foreign retailers, however, they were found to be manufacturing products for 28 European and American brands. Similarly, Tazreen Fashions was also found to be manufacturing products for Walmart during the fire, whereas, Walmart afterwards denied their involvement with Tazreen Fashions (Burke, 2013). However, clothes carrying the brand labels/tags of these retailers were found in the debris in both the situations (Luckerson, 2013).

5.2. Theme 2

This theme is analysed with respect to the case studies and questionnaire responses obtained from the participants. Several questions were put to the factory owners to elicit their views about the accidents which occurred due to the insufficient OHS arrangements. All 16 respondents agreed that any accident is unexpected and unwelcomed by them. They similarly agreed that a proper investigation to find the reasons for the accidents and the taking of punitive measures against the offenders must be implemented appropriately by the government. When the participants were asked whether their factory has a building safety certificate for industrial use from the concerned authority, more than half of the owners (10 respondents) answered that their factory is located in rented premises, so, it is the building owner's responsibility to obtain all of the necessary certification. However, they showed their concern that the existing labour law of the country should include extra guideline in fire safety and building structure. When they were asked about the incidents of Tazreen Fashion and Rana Plaza, all of them admitted the carelessness of the factory owners and the government, which is reflected in the following responses, "If the authority [government] can check all factory buildings time to time, a disaster like Rana Plaza can be avoided" ... "the recent fire in Tazreen Garments, Chowdhury Knitwear, KTS Mill, all are avoidable if the authority and the owners could monitor the fire safety plan on time".

Correspondingly, the participants were asked some questions specifically to determine their interpretation of the situation where factory owners neglect or evade OHS provisions and, as a result, workplace accidents take place. A mixed reaction was found among the respondents when they were asked to what extent they think that the workers or the owners are to be blamed when an accident occurs in the factory. The majority (12) of the respondents said that, workers can be held liable if they are found to be the cause of any accident that is due to their negligence or carelessness. A factory owner responded, "I can give many example in my factory where the negligence of the worker is the main cause of an accident. For example, last month we found a careless worker who entered in the chemical room when smoking. We warned him immediately, and this could start a big fire in the factory." In contrast, only 4 respondents agreed that it is the sole responsibility of the owner, "...to train and teach the workers to identify hazards. Being the owner, the responsibility is on our shoulder to keep the workers and workplace safe, risk free." Similarly, an important perspective emerged from one of the participants when he commented, "The workers

are uneducated and they do not know all safety and security issues. So, when any accident occurs because of any worker's mistake, the responsibility is on the owner. No one will blame the worker for the accident but everyone will blame the owner for it".

Furthermore, almost all the participants (15) showed their frustration towards the subcontracted factory owners because of the negligence observed among this particular group of industrialists who are also the repeat offenders. These subcontracted factory owners are highlighted by the respondents as being highly-motivated by profits and, "...do not think twice to put the live of the workers at stake to generate more profit", commented one respondent. Similar concern is also reflected in the following comments from other respondents: "These law breakers are never caught, and do not face any punishment for their unacceptable business practice. The government is too busy to pay attention to this sector" ... "even if it is difficult to practice all the OHS provision, it is not impossible. Many factory owners are less interested to do so because they know no one cares about the way they do business".

6. Discussion

The research has detected different interpretations between the outsourced and subcontracted factories on the following issues: (a) understanding of the OHS provision and its conformity, (b) negligence in practicing the OHS provision and its disastrous outcome.

The research findings show that the participant owners of the outsourced factories believe that the existing OHS legislation and provisions of the country are sufficient to reduce workplace accidents, provided that these provisions are implemented and followed properly. It is also found that all of the participants claimed to follow the country's OHS provisions (e.g. labour law, BGMEA's CoC and ILO conventions) imposed on them. However, this contradicts to the fact that, except for only 2, the remaining participants were found to be ignorant of these OHS provisions. This level of ignorance is contradictory to the respondents' claim to be practicing the OHS provisions imposed on them by the government, the BGMEA, the ILO, and foreign retailers. This is similar to the findings of [Bansari \(2010\)](#); [Ahmed and Hossain \(2009\)](#) and [Bhuiyan and Haq \(2008\)](#) which revealed that the implementation of OHS provisions and ILO conventions is poor across the whole garment sector, and the compliance with international labour standards has declined in several areas, especially in the OHS area. In spite of this ignorance, all of the participants were found to be deeply concerned about ensuring the safety and security in their factories, through their use of common sense and instinct.

Correspondingly, this study further finds that the outsourced factories, due to their conformity to the OHS provisions, experience fewer accidents compared to the subcontracted factories, where the OHS provisions are frequently overlooked. Similarly, from the two cases (i.e. Rana Plaza and Tazreen Garments) it is found that subcontracted factories tend to neglect the OHS provisions frequently and are more prone to workplace accidents. The subcontracted factory owners tend to take advantage of the situation where, firstly, their factories are excluded from the foreign retailers' audit and, secondly, an ineffective and weak monitoring system by the government of the country increases their chance of not getting caught and prosecuted, thus promoting an environment in which to continue their business with minimum OHS practice. This finding is similar to the results of the empirical studies conducted by [Rashid et al. \(2014\)](#); [Bajaj \(2013\)](#); [French and Martin \(2013\)](#) and [Zaman et al. \(2013\)](#) where it is found that subcontracted factories do not make efforts to ensure safety and security, and frequently violate the OHS legislation of the country. However, none of these studies provided any reason behind this evasive tendency among the subcontracted factory owners, which this study attempts to unfold.

It is interesting to find that, on the one hand, the outsourced factory owners comply closely with the OHS provisions, especially the CoCs of foreign retailers while, on the other, the subcontracted factory owners tend to ignore many OHS provisions. The findings also reveal that the cost of OHS practices is high, the availability of experienced health and safety professionals is low, and that proper safety auditing and the investigation of accidents of any kind by the government or any other authority are not practised. In this situation, two different standpoints are found between the outsourced factory owners and the foreign retailers.

Firstly, this research finds that the outsourced factory owners admitted that their practice of unauthorised subcontracting is wrong, but, they also admitted that the foreign retailers are also culpable because they often award contracts to manufacturers, whom they know do not have enough machines and workers to do the job. These foreign retailers avoid subcontracting because they would rather manage a fewer big contracts, and the price per-piece garment falls with bigger orders. Similarly, the factory owners do not turn down large work orders because they fear that they will be shut out of future orders. No factory owner can even consider refusing a work-order because they are desperate for more and more orders, and the subcontracted factories, the lowest on the ladder, compete intensely and cannot afford to upgrade their workshops. As a result, although this unauthorised subcontracting to smaller, un-inspected factories is not supposed to happen, it remains an entrenched practice. In contrast, the findings of this study earlier showed that the foreign retailers completely denied their involvement with subcontracted factories. They made a clear position by mentioning that they do not authorise any of their outsourced factories to subcontract work and that is completely against their policy.

Secondly, this research further finds two different perspectives between the outsourced and subcontracted factory owners in relation to their compliance and negligence with OHS provisions. The outsourced factory owners are found to be highly accommodating in complying with the country's labour law and foreign retailers' CoC imposed on them. A possible reason for them to possess this obliging nature is that their factories are direct partners of the supply network of the global retailers. They accept work-orders directly from these foreign retailers and, as a precondition for the apparel manufacturing process, these factory owners must have adequate OHS facilities present in their factories. Similarly, these factories are subjected to a strict compliance-audit process, conducted by the foreign retailers. A failure of this audit would result in the cancellation of the existing work-orders or withholding of future orders, and the factory being designated a 'high-risk' manufacturer. As a result of this, in addition to the stock-lot faced by the factories, they would also be avoided by other retailers with regard to future work, and eventually the factories would shut down. Therefore, these factory owners are highly compliant and their factories are fully

compliant with the OHS requirements. On the other hand, the owners of the subcontracted factories are unwilling to comply with the CoCs of the global supply chain, and instead show an interest in abiding by the country's legislation to some extent. These factory owners, not being a direct partner in the supply chain network, give an impression of non-conformity with the CoC terms since they do not have any contractual relationship with the foreign retailers in regard to manufacturing apparel for them. Being unauthorised by the foreign retailers, these factories are not subjected to any audit performed by them. Therefore, the foreign retailers do not take any responsibility for any accidents that may occur in these factories during their unauthorised production process.

However, in terms of the outsourced factory owners, the research shows that these owners find it very difficult to comply with the CoCs of foreign retailers, since fulfilling these terms increases the cost of production significantly. The participants are found to claim that the country's OHS legislation is considered easier to practice compared to the foreign retailers' CoC. This could be why foreign retailers have become increasingly stringent about complying with their CoCs and conduct periodical compliance audits of these factories, whereas, the Bangladeshi government does not engage in any similar practices. This can further be supported by Ahmed (2012) findings, which showed that the Compliance Monitoring Cell formed by the government to ensure the implementation of the OHS legislation in RMG factories did not work and was shut down due to the shortage of skilled staffs, the absence of logistical support, and the presence of a rigid structure. On a similar note, it could be due to the reason that the foreign retailers' CoCs are more advanced and sophisticated in terms of ensuring a safe and healthy workplace compared to the OHS legislations of the country. Though these participants have been found unaware of the specific OHS provisions in the country's labour act, and ILO provisions, they have been found to be considerably aware of the overall health and safety issues for protecting their workers and factories from accidents.

7. Conclusion

The objective of this study is, firstly, to investigate the two recent industrial accidents: the collapse of Rana Plaza and the fire at Tazreen Fashions, and, secondly, to find out the reasons behind these accidents. The study found that in both cases, non-compliance with the OHS provisions and the evasive nature of the factory owners were the main causes behind the accidents. From the questionnaire responses, it is discovered that the understanding of ensuring safety and security in the factories is very high among the RMG factory owners, as they believe in the appropriateness of OHS provisions in effectively reducing workplace accidents. However, their knowledge of the existing OHS provisions is very low. Similarly, a significant difference in the practice of OHS provisions among the factory owners of the outsourced and the subcontracted factories was also seen. Considering the fact that a severe level of negligence in following the OHS provisions was observed in the two deviant cases of this study, the subcontracted factory owners were found to be less compliant with the required OHS provisions compared to their counterparts. This evasive tendency among the subcontracted factory owners were further reasoned in the complex situation of the existence of and compliance with multiple standards of OHS requirements, specifically from the Bangladesh government, from the ILO, from the BGMEA, and most importantly, from the foreign retailers.

Though the findings of this research explore a new dimension of the situation which was not covered in any other studies before, it possess some limitations that are consistent with those found in studies of this kind. For example, the generalisability of the sample which consisted of only 16 participants from 8 factories, from an industry that contains almost 5,000 factories (Afsar, 2004; Chowdhury and Ullah, 2010) could be considered as a limitation. However, a triangulation research of this type, by default, must limit the number of participants due to the difficulty associated with their recruitment, specially in a country which is not research-focused, and societal hindrance makes the factory owners reluctant to participate in any voluntary activities. Similarly, the scope of this research could be broadened by investigating the situation where the global supply chain pressurises the native factories to comply with their health and safety requirements. Furthermore, another investigation must be made to identify the deterring capacity of these OHS provisions to deter accidents. The choice of the factory owners to comply with or neglect the OHS provisions can also be investigated. This study did not cover these issues, and therefore, these issues could be the options for conducting future research works. Despite the limitations, this research intends to contribute to both academic and non-academic settings; by generating new literature for those who are interested in OHS studies, and by stimulating the stakeholders in the RMG industry to raising awareness, informing, engaging and promoting the OHS provisions and practices.

Note: To maintain authenticity of the qualitative data collection and analysis, no grammatical corrections were made by the researchers to the participants' comments included in this research. The comments were quoted exactly as they were spoken by the participants.

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