

School of Design and the Built Environment

**Sustainable Building Safety within Dhaka's Supply Chain
Network:
Analysing the Global Response to Disasters in Ready-Made
Garment Factories**

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Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Signature: _____

Date: ___10 October, 2022_____

Abstract

The research attempts to learn from the global response to major building disasters occurring within the production nodes of global supply chain networks located in developing countries.

The study investigates underlying safety issues within the Ready-Made Garment (RMG) factories in Dhaka region- the capital of Bangladesh and its outskirts, where garment export has contributed enormously to the economy. It identifies the principal causes of the most prominent and unprecedented building tragedies within the garment industry; investigates allocation of responsibility for ensuring workplace safety; and whether and how Dhaka is progressing towards sustaining building safety. It also studies if the key actors endeavour to exercise duty of care regarding “safety” within the Ready-Made Garment supply chain network.

The research examines the magnitude of structural, fire, and other urban safety challenges in the context of the workplace environment within Dhaka’s globalised RMG sector. It contends that the worst factory disasters of the past decade could have been prevented if safety regulatory compliance was strictly considered, implemented, and monitored during production planning.

The study identifies the predominant shortcomings of safety governance that have caused unattended hazards and weaknesses in methods of providing secure workplace environments. Often, the importance of ‘safety’ while designing, constructing, and maintaining workplaces tends to be overlooked, resulting in building accidents. This study focuses on two such unprecedented garment factory disasters—the Tazreen Fashion Factory fire and the Rana Plaza collapse. These two cases are investigated in this study to: 1) establish an understanding of the critical safety issues that led to the tragic outcomes and may still pose future risk; 2) identify, investigate, and analyse the practices influencing the process of implementing safety elements within those factories; 3) draw conclusions about the blameworthiness of each actor group who were/are involved, and 4) what lessons the RMG industry has learnt from the past building disasters.

The research analyses key actors' perceptions and opinions obtained through primary data collection, regarding accountability for past building disasters, and how/if the tragedies may have been avoided. It also elaborates why key actors tend to perpetuate the "blame game" immediately following a building tragedy. Finally, the critical junctures leading to safety regulatory reforms made in the wake of the incidents, and steps taken as safeguards against possible hazards in future, are evaluated.

The research further contributes to articulating the need for a principled approach and duty of care to achieving a sustainable RMG industry through production planning and stringent governance. Moreover, regulatory challenges relating to roles of the key actors, their affiliation within society and the economy, and the social power dynamics are identified.

The study reveals room for further clarification of that ensuring safety within the garment manufacturing factories of Dhaka requires distinct allocation of each key actor's responsibility in compliance with existing regulations aimed at ensuring safety within Dhaka's garment manufacturing factories.. It emphasises the significance of collectively shared duty of care among primary stakeholders to sustain policy reformations and prevent building incidents in future. The research concludes that rigorous building safety measures aimed at ensuring sustainable safety in RMG factory buildings need to be accompanied by ethical and organisational safety culture adopted and promoted by the key actors.

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Dedication

This research is dedicated to all the victims of building tragedies in Bangladesh, and its garment factory workers who rightfully deserve to be safe and protected while earning a living, and for their unparalleled contribution in strengthening the country's economy.

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Acronyms

BEES	Building for Environmental and Economic Sustainability
BEPZA	Bangladesh Export Processing Zones Authority
BFSCD	Bangladesh Fire Service and Civil Defence
BGMEA	Bangladesh Garment Manufacturers and Exporters Association
BILS	Bangladesh Institute of Labour Studies
BKMEA	Bangladesh Knitwear Manufacturers and Exporters Association
BLA	Bangladesh Labour Act
BLR	Bangladesh Labour Rule
BNBC	Bangladesh National Building Code
BREEAM	Building Research Establishment Environmental Assessment Method
CAP	Corrective Action Plan
CBD	Central Business District
CCC	Clean Clothes Campaign
CPD	Centre for Policy Dialogue
CSR	Corporate Social Responsibility
DCC	Dhaka City Corporation
DEPZ	Dhaka Export Processing Zone
DIFE	Department of Inspection for Factories and Establishments
DIT	Dhaka Improvement Trust
DMDP	Dhaka Metropolitan Development Plan
DSP	Dhaka Structure Plan
EPZ	Export Processing Zones
FoA	Freedom of Association
FRI	Fire Risk Index

FSCD	Fire Service and Civil Defence
FY	Fiscal Year
GDP	Gross Domestic Product
GoB	Government of Bangladesh
IAB	Institute of Architects Bangladesh
IEB	Institute of Engineers Bangladesh
ILO	International Labour Organisation
IOM	International Organisation for Migration
LEED	Leadership in Energy and Environmental Design
MFA	Multi-Fibre Arrangement
MoLE	Ministry of Labour and Employment
MOU	Memorandum of Understanding
NGO	Non-Government Organisation
NTPA	National Tripartite Plan of Action
OHS	Occupational Health and Safety
OHSMS	Occupational Health and Safety Management System
PoA	Plan of Action
RAJUK	Rajdhani Unnayan Kartripakkha
RCC	Remediation Coordination Cell
RMG	Ready-Made Garments
RSC	RMG Sustainability Council
SDG	Sustainable Development Goal
TIB	Transparency International Bangladesh
UN	United Nations
UNDP	United Nations Development Programme
UNDP	United Nations Development Programme

USD	United States Dollar
WASA	Water Supply and Sewerage Authority
WHO	World Health Organisation

Abbreviations

Accord: Accord on Fire and Building Safety in Bangladesh

Alliance: Alliance for Bangladesh Worker Safety

GoB: Government of Bangladesh

Note: The above regulatory agencies are known as mentioned, but for convenience they have been referred to as the Accord and Alliance in this thesis.

Chapter 1: Introduction

1. Background to the Research

The trade of readymade apparel is one of the most significant global export industries in the world, a product of globalisation that continually increases its contribution to the manufacturing sectors of the world market (Rahman, 2004). During the past four decades, global garment exports and imports have escalated substantially, owing to their simple technological requirements and soaring labour-incorporating potential, which benefit low- and middle-income countries particularly (World Bank, 2016). The internationalisation of the garment industry has assisted developing countries to profit from the impact of globalisation through its contribution to economic growth, creating employment and decreasing poverty. The RMG industry, however, is migratory in character, shifting from expensive to more cost competitive manufacturing countries and, therefore, is easily globalised (Rahman, 2004). Cost controlling and meeting increasing demand are the primary reasons why readymade apparel companies in developed countries tend to shift their interests to third world countries. They realise that the most uncomplicated way to minimise expense is to relocate manufacturing to a region where wages and costs are the minimum (Rahman, 2004). Bangladesh is a quintessential exemplar of this scenario.

The history of the Ready-Made Garments (RMG) Industry of Bangladesh is fairly recent. Its impact has been enormous. The RMG sector expanded dramatically over the past three decades through its momentous contribution to the country's economy, replacing the dominating jute industry and emerging as the primary source of foreign income for Bangladesh. The manufacturing factories provide employment for up to 40 per cent of the total industrial labour force, that is for over four million people, 80 per cent (3.2 million) of whom are women (ILO, 2020c). This sector encouraged the country's uneducated rural women to be empowered through financial independence, thus diminishing the poverty rate (Rakib & Adnan, 2015).

Bangladesh started its journey in this industry in the late 1970s as a least developed country. Presently, its remarkable progress relies on three

pillars—exports, social development, and fiscal prudence (Mahmood, 2021). The country's exports grew at 8.6 per cent annually between 2011 and 2019, in contrast to the world average of 0.4% (ILO, 2019). However, with new economic prospects came new challenges. The industrial built environment, especially in the region of Dhaka and its outskirts, experienced several safety issues from the commencement of this millennium. It was estimated in 2017 that every year more than 11,000 workers suffered critical accidents and a further 24,500 deaths were caused from service-related diseases across all sectors in Bangladesh (Barua & Ansary, 2017). Although these figures are not restricted to the RMG manufacturing factories alone, they are noteworthy considering that the largest proportion of employment is provided by this sector.

A built environment susceptible to accidents not only endangers the safety of its people and adversely affects quality of living but also negatively influences workplaces, foreign interests/investments, and the country's global image. Unfortunately, thousands of people all over the world are killed and injured in building disasters every year. Most of these disasters occur in industrial buildings (Barua & Ansary, 2017). According to the International Labour Organisation (ILO), occupational accidents and work-related health issues result in over 2.3 million fatalities yearly, of which above 0.35 million results from occupational accidents. About U.S.\$2.8 trillion is lost annually through direct and indirect expenses (ILO, 2021).

Among numerous types of hazards in industries, physical vulnerabilities such as fire and structural failures in buildings are interlinked with workplace safety (Meacham and McNamee, 2020). Worldwide, several countries such as China and Canada, have acknowledged the risks and taken initiatives to protect human lives and diminish material damage from industrial accidents (IFSS, 2021). Occupational Health and Safety (OHS) is the primary concern of ILO. The organisation established the concept of appropriate industrial infrastructure for workers' protection from risks and hazards, jointly with the World Health Organization (WHO), in 1950, to reduce the number of workplace fatalities (Alli, 2008). However, industries involve multiple professionals in production planning, designing, constructing, operating,

maintaining, and regulating the factories in an ongoing process to prevent the industrial built environment from becoming vulnerable to accidents. Although developed countries are able to adapt promptly to reformed regulations and laws, companies in developing countries with low rates of adult literacy often struggle to perform ethically and professionally.

Workplace safety was recognised as one of the most prominent issues within the RMG factories where bureaucratic incompetence and corruption could threaten industrial growth (Ahmed, 2014). Initially, the RMG factories were mostly developed haphazardly and spontaneously, without proper production and safety planning. Many were not built for the purpose, being either converted or shared buildings (Islam, 2013). The Bangladesh Export Processing Zones (EPZ) Authority Act of 1980 aimed to achieve rapid economic growth by boosting industrialisation and enhancing employment through promotion of imports and exports, and investment (World Bank, 2018). The Act led to the establishment of the semiautonomous agency Bangladesh Export Processing Zones Authority (BEPZA) which was accredited to lease serviced plots to industrial tenants in export processing zones (EPZs) nationwide. The agency concentrated primarily on the garment sector (Bangladesh Bank, 2020). Under the aegis of BEPZA, two of the EPZs that are operational now in the district of Chittagong and Dhaka were formed in 1983 and 1993 respectively (Bhattyacharya, 1998). In 1996, the Government of Bangladesh sanctioned a law to permit the EPZs to be established by the private sector.

The opportunity was taken by a Korean agency named Youngone Corporation, which developed their first EPZ in Chittagong and eventually another in Dhaka (Bhattyacharya, 1998). Other than that, however, residential buildings had been commonly transformed into RMG manufacturing factories, that obviously were not designed to withstand the weight of hundreds of machines and thousands of workers. Although health, safety and fire hazards had been brought to the attention of national and international media, workers mostly remained unaware of them as these issues were not affecting them on a daily basis. Most of the damaging incidents started around the beginning of this millennium when written

policies or guidelines on safety and health did not exist. Workers were uninformed about their rights in the workplace; there were no safety signage or posters; and most importantly, the factories did not keep records of any incidents of concern. Building inspectors and regulators had been accused of being inactive (Morshed, 2007). The Spectrum Garment Factory collapse in 2005 killing 64 people was among five lethal accidents the same year that attracted international attention and scrutiny. A study by the Bangladesh Institute for Labour Studies shows that in 2005, the grim consequence of five building accidents was 130 deaths of workers on the job and 480 injuries (Human Rights Watch, 2015). It is estimated that in Bangladesh, around 11,700 workers annually fall victim to accidents at their workplace. Although this figure is not restricted to the highly labour intensive RMG factories alone, it may be noted that this sector provides the largest proportion of employment (Ferdous et al., 2021).

As such acts of safety negligence continued, building accidents became more frequent, among which the worst two—the Tazreen Fashion factory fire hazard in 2012, killing at least 117 and the Rana Plaza factory building collapse in 2013 costing 1,134 lives—placed the manufacturing sector in a vulnerable situation (Dey & Basak, 2016). The occurrence of those two high profile disastrous incidents triggered government initiatives and measures by the private sector including global brands and retailers, resulting in the establishment of two regulating bodies, the Bangladesh Accord on Fire and Building Safety (commonly referred to as ‘the Accord’) and the Alliance for Bangladesh Worker Safety (commonly referred to as ‘the Alliance’) (Anner, 2018). Both organisations were set up to ensure and enforce labour and workplace safety within the RMG units of the country as most garment factories in the country were seen to be uncooperative with Labour Law and International Labour Organization (ILO) conventions (Labowitz & Pauly, 2014).

In less than a decade since the two unprecedented disasters, much has been achieved and the country currently proudly owns the highest number of LEED certified, green RMG factory buildings in the world. Although the economic contribution of the RMG sector is undeniable, the underlying issues

it encounters, cannot be overlooked if it is to be sustainable. It is highly dependent on foreign countries for raw materials—about 40% of raw material for garment production and 80 to 85% of the knitwear dyeing chemicals are imported from China. This imposes difficulties in situations like the recent pandemic (Rakib & Adnan, 2015). Another concern is lack of social compliance in the RMG sector of Bangladesh which involves worker satisfaction, productivity, and workers' communication with management. This has been a fundamental requirement for international buyers and has been discussed extensively with different NGOs, media and a few foreign RMG buyers who minutely monitor the labour's working environment and safety paradigms (Rakib & Adnan, 2015). A survey by Chief Purchasing Officers belonging to frontline apparel companies of Europe and the USA, sourcing from Bangladesh, identified five major challenges threatening the industry (Chowdhury, 2014). They are: fragile infrastructure; compliance issues; low supplier and labour efficiency; weak backward linkage owing to its raw material import dependencies; and volatility of political and economic conditions. Many recognised workplace safety as one of the most prominent issues within the RMG factories where bureaucratic incompetence and corruption could threaten industrial growth (Ahmed, Greenleaf & Sacks, 2014).

Following the Rana Plaza structural collapse, awareness regarding safety issues surfaced with regards to labour and structural and fire safety conditions within RMG and other factories and they were criticised for lacking safety and compliance standards. Bhuiyan and Dash (2019) report that RMG factories still have the highest percentage of fire threats (83 per cent), as the highest number of workers (50%) demand dependable fire protection. Meanwhile, Rahim (2016) observes that integrated safety parameters and compliance would assist the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) to supervise the apparel manufacturing factories more efficiently.

The impact of the two major events of factory disasters led to the rapid transfer of responsibility through formation of foreign regulatory regimes—the Accord and the Alliance. However, following their exit, regulatory and

monitoring responsibilities have been again handed back to the local authorities. The question arises: to what extent can local bodies maintain and build upon the progress in safety improvement with the two giant groups exiting the country recently. It may be asked whether the country has sufficient local experience or expertise to support the status quo so other unfortunate consequences of negligence, like the Rana Plaza collapse, may be avoided. Moreover, the ILO has recently urged factory owners to execute workplace safety requirements through observing compliance criteria (fire, structural and electrical). This requirement has further burdened factory owners, especially those operating small factories (Khan et al., 2018). They are concerned about possibly heading towards a future of mergers and acquisition within the RMG sector.

Over the previous three decades, Bangladesh has achieved higher average gross domestic product (GDP) growth than the world's average, and since 2010, higher than the average growth rate of South Asia (Thiruppugazh, 2021). Its rapid progress, beginning in the 1980s, caused it to transpire as one of the swiftest expanding economies in the world. As the contribution of the agriculture sector declined, that of the manufacturing and services doubled since the 1980s (McFall-Johnsen, 2020). This 50-year-old nation has become one of Asia's most phenomenal and unanticipated success stories in recent years. Bangladesh owes its extraordinary development largely to the triumphs of its garment manufacturing industry which has been driven by several factors such as providing a better environment for manufacturing companies to attain economies of scale and generating large scale employment opportunities especially for uneducated women. At times, Bangladesh's economic performance has surpassed government targets, surging by an annual average rate of 15–17% to reach a record U.S.\$36.7 billion by mid-2018 (Basu, 2018).

Bangladesh has historically transmuted challenges into opportunities whenever they acknowledged an issue with unyielding determination and worked towards pragmatic initiatives to resolve it. One of the current prevalent trials for Bangladesh is to sustain the safety regulations introduced through input by the Accord and Alliance, and thus safeguard millions of

workers and the industry itself. The RMG manufacturing sector has evidently played a revolutionary role in the country's progress, launching its name on the global map within a brief span of time. For the RMG industry to be sustainable, implementation of safety regulations is mandatory (Chowdhury et al., 2016).

1.1 Research Statement/Problem

New opportunities for significant economic growth in developing countries presented by globalisation from the 1980s onwards also brought in demands for significant changes and adaptations to be rapidly made in their local industry and regulatory regimes. In order to capitalise on the global opportunities, developing countries are required to ensure that their industry's approaches to production efficiency and working conditions are aligned to globally acceptable models and are compliant with globally acceptable safety standards. These requirements present an additional set of challenges for planners, practitioners, factory owners, and regulators in responding to the increasing concern for ensuring sustainability of the built environment, particularly for industrial buildings and factories with an added focus on sustainable building safety.

Certain industrial building accidents in developing countries expose weaknesses in the governance of supply chain networks in developing countries and their safety regulation regimes. Global sensitivity to widely reported, high impact events, tends to trigger global intervention to rectify the deficiencies. These could result in drastic fixes or longer lasting sustainable measures ranging from external input of resources and expertise to awareness drives and establishing or amending governance systems and policies. The high impact incidents could even mark critical junctures in policy development regarding improved building safety regulations in developing countries.

However, while the initial safety improvements in the local context may be significant and visible, it is often difficult to determine the sustainability of the improvements, introduced by externally based actors. While there is sufficient literature covering industrial accidents in developing countries and the global

reaction that high profile, unforeseen disasters tend to generate, there are very few studies that investigate the sustainability over time of rapid transfer of regulatory technology dictated by external global stakeholders.

This study sets out to fill this research gap by investigating the dynamics of global intervention triggered by media attention to certain industrial disasters in developed countries and their effectiveness in promoting safety culture. It seeks to understand the impact of rapid transfer of responsibility in the area of safety regulations and policy development on existing local regulatory regimes and governance framework. The study will focus on the impact of these reforms within the reality of the local context of a developing country. The research thus sets out to investigate the potential effectiveness and limitations of global initiatives to deliver modifications of the building regulatory system aimed at ensuring sustainable building safety in RMG factories. It focuses on issues related to such sudden measures within reality of the local context characterised by cheap labour, low levels of education, limited awareness, undefined roles and responsibilities of stakeholders, and weak governance.

1.1.1 Knowledge Gap

The research seeks to contribute towards filling the gap in existing literature regarding the perception of “sustainable building safety” in the context of urban governance. Additionally, it examines how it is comprehended by the main actors involved in the design, construction, establishment, regulation, operation and maintenance of industrial buildings within developing countries incorporated into the global supply chain network. It pursues to address the built environment within the framework of global RMG industry of Bangladesh regarding their allocated roles and responsibilities towards ensuring safety and preventing building disasters. The study thus intends to concentrate discussion on the various stakeholders’ performance and accountability for maintaining workplace safety in factory buildings while assessing the impact of reformations introduced subsequent to Dhaka’s worst RMG disasters from the perspective of practitioners, regulators, owners and concerned others.

1.2 Field of Study Relevant to the Research

This section validates the relevance of the research by positioning the study topic in literature related to establishment of RMG factories, their production planning, regulation, monitoring and maintenance strategies and also the roles of the actors involved (including architects, engineers, owners, buyers, regulators, and workers) who influence the overall sustainable future of the industry and the city itself in the context of ensuring sustainability through safety within garment manufacturing workplaces.

1.3 Research Aim and Objectives

The aim of this research is to assess:

- the allocation of responsibility among various key actors involved in production and safety planning, and promoting sustainable building safety within the RMG industry; and
- the effectiveness and challenges associated with global intervention in reforming building safety practices in developing countries and their prospects to sustain.

The study sets out to analyse the correlation between sustainability and safety within a city's built environment, focusing on RMG factories in and around Dhaka which have witnessed major industrial building disasters in the past decade. It seeks to identify causes leading to the unprecedented building disasters and possible measures that could have prevented their occurrence, the impact of the global response leading to transfer of social responsibility through external input to improve the safety regulatory regime within its local context and the current state of affairs in terms of sustainability of safety improvements introduced through those reforms.

To address the research goals, the following research objectives were formulated.

Primary Objective:

To analyse the effectiveness of the transfer of regulatory responsibility involving global external monitors seeking to promote sustainable building

safety within the global supply chain networks in developing countries and how it inspires stakeholders to prevent building disasters in the future.

Secondary Objectives:

- To explore common causes and factors that lead to unprecedented safety hazards in RMG factories in a particular developing country and assess the role of government authorities in administering safety governance;
- To map out the allocation of responsibility to provide duty of care among various actors within the society for ensuring safety in the urban built environment and assessing the adequacy of regulatory controls in place for building safety;
- To investigate the impact of major factory building disasters and the role of actors in defining critical junctures in the development of planning policies and safety regulations for industrial buildings;
- To investigate the nature of interventions by globally based external actors seeking to improve safety standards in Dhaka's RMG factories and determine the extent of their impacts on safety enhancement in RMG factories and their sustainability.

1.4 Research Question

The main research question that this study seeks to investigate is:

How does external input from global stakeholders, motivated by industrial accidents, inspire confidence among local actors in delivering sustainable building safety within Dhaka's RMG factories?

The following sub-questions were investigated to answer the main research question:

- a) What is the status of Dhaka within the global production network of RMG industry?
- b) Who are the primary players of Dhaka's RMG industry and how are their roles allocated in ensuring safety within the garments factories?
- c) To what extent did high profile industrial disasters attracting external intervention by global stakeholders, serve as critical junctures in

effective policy development regarding safety regulations within Dhaka's RMG?

- d) To what extent did external intervention help improve safety regulatory regime in Dhaka's RMG industry and clarify the allocation of responsibility among the local actors involved?
- e) To what extent was external input from global players effective in improving the sustainable safety governance model for RMG factory building regulations within the contextual reality of Dhaka?

1.5 Research Scope

The scope of this study includes the RMG factory buildings within greater Dhaka, consisting of the capital city itself and the conurbation surrounding it, such as Savar and Narayanganj, which largely comprise industrial zones. The focus of this thesis lies on building safety issues within the workplaces of these factories that have been highlighted over the past decade (2012 to 2022) and how they are regulated to sustain this sector's contribution to the country's economy. Although there have been numerous factory building tragedies in the country, the study focuses on the two worst incidents that have led to reformations of regulations as a result of global pressure.

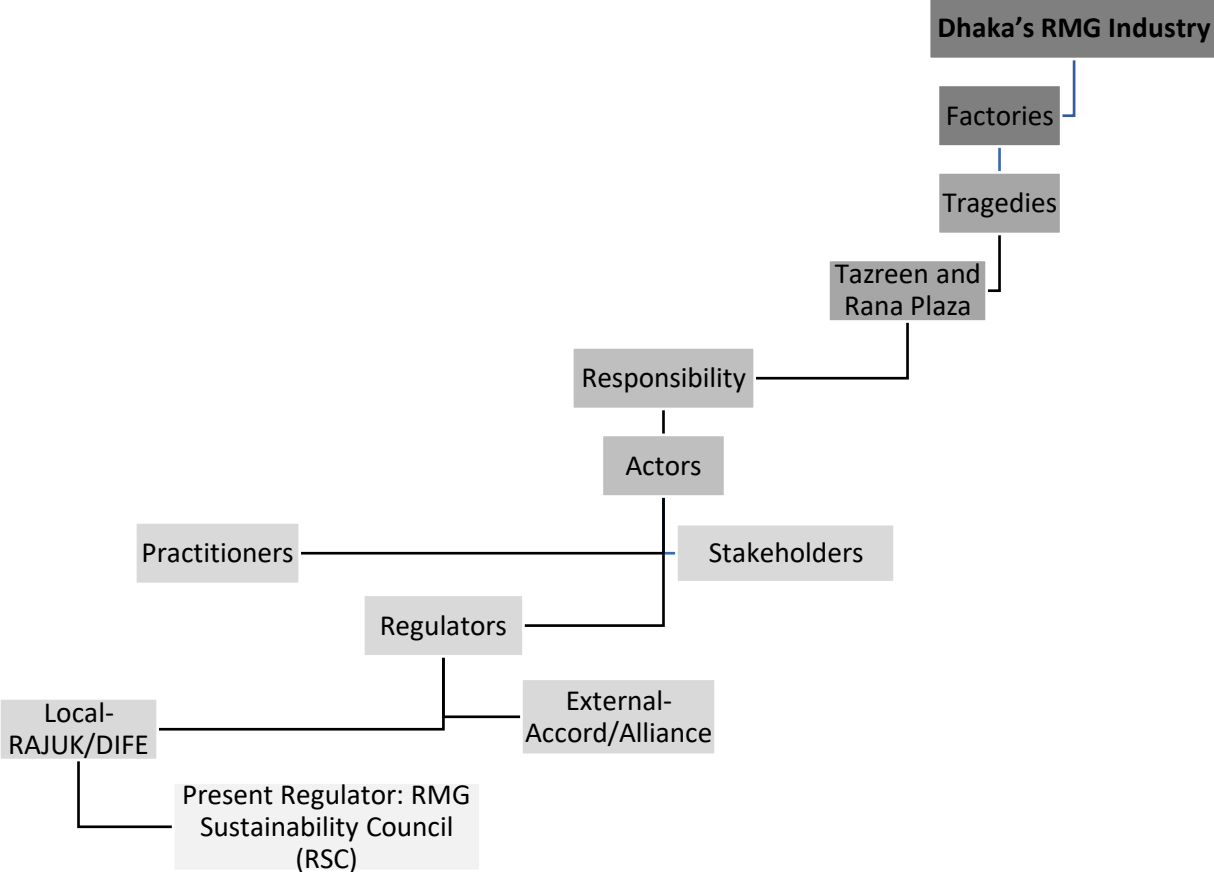
The scope of study is limited to the significant actors involved in this sector who influence production planning of factories and are expected to promote safety standards within garment factories and all others. Figure 1.1 illustrates the scope of this study in a diagrammatic form. Each section of the diagram represents the key aspects that are studied to reach the research goals.

1.6 Research Theoretical Framework

The fundamental understanding and analytical framework of this thesis is based on the concepts and theories relevant to safety and sustainability of built environment, regulatory frameworks, and allocation of responsibility—encompassing the factors crucial to ensuring the overall sustainable future of a developing city. Comprehending these theories is crucial in assessing the influencing factors required to avoid building disasters in the future.

Figure 1.1

Research Scope



The link between the theories of urban governance, safety governance and responsibility may be identified through the understanding of each of these factors. Urban governance involves a continuous process of how government and stakeholders plan, invest and make decisions regarding how to manage urban areas (Tribune Report, 2021). It encompasses a multitude of economic and social forces, organisations and communities that include labour markets, services land, infrastructure, and public safety (Devas, 2014). Urban governance involves an array of actors and institutions whose roles and responsibilities determine what takes place in a city (UN-Habitat, 2015). The emphasis of this study is on the safety issues prevalent within the workplaces of garment manufacturing factories in the region of Dhaka and how the actors are each accountable for implementing, regulating, maintaining, and sustaining “safety”. The following section elaborates the theoretical framework of this research.

1.6.1 Theories of Urban Governance

A well-tested strategy towards administering urban sustainability is perhaps the introduction of streamlined guidelines by governments of urban areas. “Governance” is frequently the core of any discussion on development; it has been explained as “the system which directs and controls entities concerned with structures and methods for decision making, accountability, discipline and conduct” (Dean, 2009). It plays a crucial role in prompting how an organisation’s goals are formed and attained, how hazard probabilities are monitored and identified and how performances are optimised (McMenemy, 2019). Governance is a practice and process, not a well-defined action and therefore, effective implementation of reliable governance requires a methodical strategy that incorporates planning, risk management and operation management (UNDP, 2020). It involves authority, accountability, leadership, management and control that are to be exercised within an organisation or workplace.

Good governance extends beyond common sense. It plays a key role in underpinning economic development and public faith in authorities.

Excellence can be attained when principles and practices of duty of care are employed to strengthen governance. “Duty of care” in this context, is described as a reasonable standard of care that is expected to avoid reasonably foreseeable harm to others (Witting, 2005). It is at the heart of any flourishing venture. It is essential for an organisation to achieve its objectives while maintaining legal and ethical standing for shareholders, regulators, and society. In a World Bank report titled “Governance and Development”, good governance is explained as “the mode in which authority is exercised in the management of a country’s economic and social resources for progress” (Santiso, 2001). The United Nations Development Programme (UNDP), states that good governance has eight main dimensions: “participation; rule of law; consensus orientation; equity and inclusiveness; effectiveness and efficiency; accountability; transparency; and responsiveness” (Srivastava, 2009). The Institute of Governance (Canada) believes that good governance draws on four key dimensions: who has power; who makes decisions; how are decisions made; and ultimately who is accountable (Graham et al., 2003). Goal 11 of the 2030 Sustainable Development Goals identifies inclusion and good governance as the key elements for well-being and crucial for securing sustainable development, while it also explicitly stresses promotion of safety for resilient cities (UN, 2015).

Governance is often established in relation to particular types of organisations. The industrial built environment is linked with urban governance, regulatory governance, corporate governance, organisational governance, safety governance and others. The laws are mainly directed towards administration and control (National Safety Council, 2021). The policies are more evident in the practices of various professionals who are expected to put values into action which are significant to clients, employees, users, communities and investors. These are more holistic attitudes encompassing the methods, regulations, standards and practices an organisation or practitioner follows. They are guidelines for operations and administration, principles, risk management and compliance. Such governance emphasises Codes of Conduct. This is particularly evident within

professional institutes Codes of Ethics, where each actor acknowledges and respects their individual roles and responsibilities. They collaboratively form urban governance (Gupta & Rayadurgam, 2008). Governance can be established in accordance with relationships between the following (Biswas, 2015):

1. governments and civilians
2. governments and private or voluntary divisions
3. elected and appointed officials
4. local organisations and urban/rural inhabitants
5. legislative and executive subdivisions and
6. nations/states and institutions.

Urban governance indicates how local, regional, and national government and stakeholders agree upon how to plan, finance, and administer urban areas. That involves allocation of power among social and political bodies. It comprises a group of economic and social entities, institutions, businesses, and relationships that include services, infrastructure land and public safety (Devas, 2014). According to UN-Habitat, urban governance is the sum of several institutions and individuals both public and private, who organise and manage the common concerns of a city (UN-Habitat, 2005). Academics often emphasise the contribution of particular actors in the establishment of urban centres and how their interests and deeds influence the management of cities and their progress. Urban governance is an on-going process through which conflicting or varied interests may be accommodated and supportive steps can be taken. It comprises formal and informal arrangements and the social capital of a city's inhabitants.

A well-acclaimed and well-tried approach to governing urban sustainability and to construct capacity for resilience is the enforcement of mandatory regulation by (national) governments. Furthermore, governance can be comprehended as an uncoerced action undertaken by one or more individuals seeking to mould, monitor or endeavour to inspect human activities to acquire an anticipated collective conclusion (Atabaev et al., 2021).

Worldwide, governments have introduced construction protocols that, for example, instruct the level of energy a building should consume (that is,

addressing urban sustainability) or the length of time for a structure to be able to endure a fire (that is, attending to urban resilience). Nevertheless, such straightforward governmental guideline is often critiqued for failing to attain consequential urban sustainability without investing much time, and to a degree that is adequate to identify the primary concerns posed by global transformations (Gupta & Rayadurgam, 2008). These problems are further discussed in Section 1.5.

Governments on various tiers, organisations and civil society communities and individuals have contested to address these issues in manners that are dissimilar to traditional direct regulatory interventions. Globally, governments are now taking part in government-to-government networks such as the ICLEI (further discussed in Chapter 3) and exchanging information and best methods for addressing urban sustainability and resilience in innovative ways. Businesses and civil society groups have taken up the challenge for acknowledging these issues by introducing their own regulations and governance programmes that seek to enhance urban sustainability and resilience.

1.6.2 Theories of Safety Governance

Failure to identify and control risks may impact an organisation and its stakeholders. The necessary control comes through governance that involves an outline of values, processes, and practices. This framework performs as guidance for governing authorities to make decisions to achieve an organisation's purpose and goals. Business owners and employers are expected to develop an effective culture of governance, hold managing bodies to account, and ensure compliance (Atabaev et al., 2021). Safety governance holds a significant position in the framework, where it is the fundamental part of an administration's overall risk management performance, and this is a key responsibility of owners.

According to the UN, urban safety governance prioritises the prerequisite for a profound understanding of the ways in which a wider set of local risk factors interrelate with illegal external forces to give rise to safety challenges. It underlines the need for context-specific reactions. This encourages the

reversal of risk factors to reform legitimate governance, providing policy makers a framework within which community resilience can be established (Chen, 2004). Occupational Health and Safety (OHS) is a multidisciplinary practice that permits an organisation to manage workers' safety and health in a workplace methodically. Implementation of OHS in a work environment therefore assists in promotion and preservation of the optimal level of social, mental and physical welfare in the workplace (GSSB, 2018). It relates to laws, regulations and programmes that are targeted at shaping workplaces for the care and well-being of workers, along with clients and stakeholders. According to the ILO, safety at workplaces comprises the interrelationships between work and workers, materials, machinery and equipment, environment, and financial considerations like productivity. The organisation also believes that safety should be considered at the planning stage and persist through various phases of manufacture and that the responsibility of supervision for maintaining OHS of the employees should also be considered at this stage (ILO, 2003). Prevention of accidents is to be designed in production planning. This would not only result in improved reliability and elimination of risks, but also in workers' wellbeing and overall workplace safety (Fasanya, 2020). Employers, managers or owners and workers are to be informed and aware of any possible hazard. Workers should be trained and educated on safety considerations. The ILO emphasises enhancement of safety through use of administrative and engineering controls and provisions available for appropriate emergency actions to limit the consequences of accidents and injuries. Implementation of measures to ensure safety is mandatory (ILO, 2014).

Apart from the ILO, the Bangladesh National Building Code (BNBC) also advocates that each company establishes some core safety principles that will pose as the basis of their safety management programme. The safety principles should be simple to be easily comprehensible, and regularly reinforced among employees and workers (BNBC, 2020).

1.6.3 Theories of Responsibility

An individual or group is considered “responsible” (or otherwise) depending how sincerely they fulfill what is expected from them. Evaluation is often based on moral judgment and at times determined through legal judgment or governance. “Responsibility” has been theorised in the broadest sense as a set of practices which are used to elaborate and comprehend individual and social behaviour (Stahl, 2004). The term may have several definitions, but it may be summarised as an act of response to a situation. “Responsibility” is a basic concept in morals, ethics, law, philosophy, and politics. The concept relates to abstract and general standards applicable to the definite action context under certain circumstances where the actor has unrestricted scope to act upon a decision (Baumgärtner et al., 2018). The theory establishes an architecture to augment, assess and direct actions. Responsibility may be considered as a job involving predetermined series of commitments or duties that must be fulfilled for accomplishment (Barrett, 2020).

One’s attitude towards responsibility is the foundation for commendation or blame; an actor is to be responsible for unknown and also unforeseeable outcomes (Baumgärtner et al., 2018).

Researchers have conceptualised the term “responsibility” through some basic senses or meanings:

1. responsibilities are specific duties, jobs, tasks or obligations that are to be done or maintained. These may have divergent moral import.
2. in a more generic sense, the moral import is dependent on a particular action, its success or failure.

Exhibiting due attention or concern for one’s actions and taking accountability for the outcomes of a retrospective attribution of ‘causality’ (Fischer & Ravazza, 1993).

In organisations, work responsibilities are allocated into roles where various groups, actors and professionals are to function according to differentiating tasks assigned to each according to their knowledge and expertise. The execution of each task connected to assumption of work responsibilities requires certain knowledge, awareness, experience, and ethical commitment. In a business context, “responsibility” refers to an of duties or obligations

naturally assigned to an individual according to a person's position, function, or work (Talbert, 2019). Large companies embrace the idea of operating with principles and in a responsible manner, while small industries endeavour to do the same but are highly dependent on the financial constraints. The concept of responsibility may include various aspects but generally, it is being able to distinguish right from wrong and to stress ethics in workplaces that assist to ensure that even during times of crisis, leaders, owners, employers, or managers will retain a resilient moral compass. However, there is disparity between OHS intentions and commitments and OHS practice and results in responsibility regulation, especially within export supply chains (Lund-Thomsen & Lindgreen, 2014). The theories of responsibility can be applied to practical pattern of actions, and how they are addressed by professionals. They can also provide guidance for analysing the prevailing governance structures within their field of performance (Bentham, 1988).

1.7 Research Methodology

The research methodology has been developed to facilitate data collection required to fulfil the achievement of each aim and objective of the study. It aims to integrate theoretical aspects and empirical findings of the study in addressing the research questions. Consequently, the research follows mixed methods including both qualitative and quantitative strategies to corroborate and triangulate the data collected. Desktop reviews, literature review, interviews and surveys are the formal means employed to gather data.

To provide a strong theoretical foundation for the research, the literature review identified fundamental areas of the study and informed the goals and objectives. Additionally, the literature review supports the questions designed, and selection of two of the worst factory building disasters in Bangladesh. These disasters are scrutinised to understand the underlying causes of the mishaps and the consequences that followed due to international pressure to reform building safety regulations. The literature review, document analysis and interviews focus on two unanticipated building tragedies in Dhaka: the Tazreen Fashion Factory fire in 2012, and the Rana Plaza collapse in 2013. The field study is conducted in four stages:

- obtaining approval for fieldwork;
- carrying out field observations and piloted survey questionnaires and interview questions
- conducting interviews of the actors; and
- collection of information through survey questionnaires.

Professionals and practitioners employed to create the built environment (including architects, and engineers), regulators of planning and development, investors/owners related to the RMG industry, and educators of built environment related disciplines were interviewed. Responses from RMG factory workers and students enrolled in an architecture course were collected through survey questionnaires. The empirical research investigates strategies adopted by various actors to ensure safety within the built environment, specifically the industrial buildings related to RMG sector, and how these strategies could lead to Dhaka's future as a sustainable city.

1.8 Reasons for Studying the Two Worst RMG Building Disasters in Bangladesh

The two worst RMG factory building disasters in Bangladesh occurred within less than a year of each other. They form a major reference for this study as they are treated as events that mark a critical juncture in the reform to regulatory systems to ensure safety and sustainability of the built environment. The research seeks to thoroughly examine the data within the specific framework of sustainable building safety issues that were highlighted in the RMG industry of Dhaka within global production network.

Research methods employed in the study aim to collect evidence through mixed research methods, both qualitative and quantitative. The evidence could be used to respond to research questions and evaluate the hypothesis. The data collected and analysed with specific reference to the two building disasters could provide crucial information on practical matters relating to designing and maintaining sustainable safety elements in the study area. The empirical evidence generated aids the researcher to investigate data at the core level within the study context.

The inclusion of the two factory building disasters reinforces an empirical approach to the research that can elaborate the underlying causes and outcomes of the disasters through detailed observation, scrutiny, and analysis of the incidents. This line of study permits the exploration and understanding of multifaceted issues. The approach encourages a pragmatic inquiry that assists in inspecting observable facts, through detailed contextual analysis of the sustainability of the workplace, environmental safety, and their inter-relationships. It also allows a comparative study of the perceptions of the safety situation by a range of relevant actors. The two factory building incidents are thus subjected to a systematic analysis with reference to the then existing regulations and codes.

1.9 Research Structure/ Dissertation Outline

The Research Structure follows two parallel paths. On one hand it sets out to investigate the reasons behind the unanticipated building disasters in Dhaka's RMG sector employing an analytical framework to assess the underlying issues. On the other hand, it seeks to evaluate effectiveness of transplantation of international regimes into Dhaka's building regulatory system after the two major factory tragedies and their impact on perceptions of responsibility among stakeholders to safety compliance. By bringing together findings from both lines of discovery, it seeks to understand and assess the possible progress Dhaka's built environment has made towards being sustainable in the future, attributable to the brief period of global intervention to augment safety in the city's RMG supply chain network.

A well-defined and all-encompassing research scope was prepared prior to initiation of the study, aiming to comprehend the dynamics of the existing development controls and regulations in Bangladesh regarding industrial buildings, specifically RMG factories. The scope of the thesis covers four main topics based on its objectives. These are: 1) factors leading to safety issues resulting in factory building disasters; 2) policies and institutions comprising safety governance systems for safety of the built environment; 3) perceived roles and responsibility of actors dealing with designing, establishing, or production and safety planning of RMG factory buildings; and 4) sustainability of reformation made through transfer of regulatory

responsibility to acquire international work safety standards in a developing country.

Table 1.1

Research Structure

Sections	Chapters	Key focus and objectives
Introduction to the Thesis	Chapter 1	Introduction and brief description of the thesis and its relevance, the goals, research questions and the scope of investigation. An overview of the methodology and theoretical framework along with justification for examining two RMG building disasters.
Background and Contextual Analysis	Chapter 2	A depiction of Dhaka city's planning history, the emergence and growth of the RMG sector and the challenges that followed.
	Chapter 3	A conceptual and theoretical discussion on building safety and sustainability, elaborating the interconnections between building safety and workplace environment that collectively impact a city's overall built environment.
	Chapter 4	An account of the existing regulations applicable to Dhaka's RMG sector and the allocated roles and responsibilities of the primary actors involved in establishing, operating, regulating, and maintaining the workplaces within the garment manufacturing factories.
Methodology	Chapter 5	Description of the procedures used for conducting this study, explaining the research method and research tools adopted to find answers for the research questions.
Regulations and Reforms	Chapter 6	Description of the two worst RMG factory building disasters in Bangladesh's history. A report on the tragedies, the causes and the aftermath and ensuing blame-game.
Implementation and Outcomes	Chapter 7	A discussion on the intervention of foreign agencies in local regulatory regimes in response to massive global reaction to the two building disasters. An investigation of their performances in terms of their impact and its sustainability on the local safety regulatory regime after their exit.

Findings, Discussion, Conclusion and Recommendations	Chapter 8	Presentation of results from literature review, and findings from each data collection method employed and a discussion and interpretation of the findings aligned to research questions.
	Chapter 9 and Chapter 10	Discussion of findings, drawing conclusions for the thesis from research outcome, their implications and making recommendations.

1.10 Research Outcome and its Significance

RMG factories in Bangladesh, particularly those within and around the region of Dhaka, have been under scrutiny since the major factory building disasters at Tazreen Fashion Factory and Rana Plaza. Being representative of the high-profile global production network and a product of globalisation, this industry has much at stake in terms of projecting a positive image. While it does strengthen the economy of developing nations that become part of the global production network, it needs to maintain its image as a harbinger of benefits to the society through efficient production. Such credentials built around productivity and competitiveness may be easily damaged by high profile factory building disasters.

Sustaining the global production network is of paramount importance for the garment manufacturing sector in Bangladesh. In aftermath of the disasters, the regulating authority for garment manufacturing factories in Bangladesh has been transferred three times in less than a decade—until 2013 it was overseen by RAJUK and other local regimes; from 2013 to 2019 it was under transnational regulators; and it is presently under local regulators comprising garment manufacturers and exporters. The research investigates the conditions that led to the rapid shifts in the local safety governance and regulations through external intervention by transnational regulatory regimes. The main purpose of the study is to explore the effectiveness of the regulatory reformations in delivering sustainable safety in Dhaka’s RMG industry, and how the main actors could understand and own their role and responsibility in ensuring safety compliance.

The idea is to understand the roles and responsibilities of the actors who design, operate, and regulate the factory buildings and to scrutinise the

extent of their participation in ensuring compliance with safety regulations in the aftermath of the Tazreen Fashion Factory and Rana Plaza disasters. The study seeks to understand the impact of the intervention by external global actors in the regulatory regime of the RMG sector and their subsequent exit. It seeks to investigate whether the regulatory regime's focus on ensuring safety in the industry is returning to its pre-Rana Plaza status with local regulating bodies taking over again after the exit of the external controllers. The study focuses on the execution of inspection and monitoring tasks involved in the regulatory regime in place to ensure safety within factory buildings. To do so, the research identified factors that influence and hinder accurate application of safety measures. The two worst building disasters in the country are studied to reflect on the elements and malpractices that may jeopardise the stability of the industry and put workers in life-threatening situations. These two cases help to understand the governance approaches that existed a decade ago and the changes that have been brought about after their occurrences, as they serve as a critical juncture in policy development regarding safety regulations in industrial buildings.

Safety is a key element of sustainability of any industry, as the higher the risk of accidents in its operations, the lower the probability of the industry to survive over time. Building safety is a key factor for encouraging not only the sustainability of the RMG industry but also the city's built environment as a whole. Various actors including design professionals, investors, administrators, and regulators play a distinct role in ensuring safety and improving working conditions within industrial buildings. The research intends to address the lack of clarity in allocating responsibility among each group of actors, including practitioners, regulators, owners, and global partners. This lack of clarity initiates the blame-game that follows every building tragedy.

The study sets out to explore the possible future of the RMG industry and its readiness to ensure safety for workers through the regulatory regime in place. It seeks to establish the need to pursue sustainable safety and highlight issues that need attention to achieve this end. The study particularly seeks to focus on local contextual issues that could compromise the

effectiveness of positive regulatory reforms introduced through intervention by externally placed global actors.

Chapter 2: Historical Account of Emergence of the Ready-Made Garment Industry in Dhaka

This chapter describes the development of the Ready-Made Garment (RMG) industry within and on the outskirts of Dhaka. It commences with a narrative of how the city developed into a capital megacity through its everchanging planning regimes under several rulers. The emergence of the garment industry is elaborated, with attention to the elements that influenced its development, until, with globalisation, it became a gamechanger for Bangladesh. The different roles and responsibilities of those involved in this industry from its design stage to its operation and maintenance, are explained with regard to each actor's allocated obligation towards sustaining safety within RMG factories.

Garment manufacturing is one of the world's most globalised industries, its growth often being the first step towards industrialisation for many countries (Shabab & Islam, 2018). Through the progress of export-oriented apparel industries, a nation acquires profound knowledge and skills which highlight the significance of this industry in a country's process of development (Anwary, 2017). This industry comprises several parts and a range of professionals who contribute at different stages. The design and construction phase begins with an owner or client's intention to establish a factory. The responsibility is handed over to practitioners—architects, engineers, contractors, and regulators, who design, construct, and regulate factory buildings. Stringent regulatory instructions from the government that combine policies, regulations, targets, and laws, along with financial aspects are to be complied with during the establishment of RMG buildings (Selim, 2018). Apart from that, environmental aspects are also to be taken into consideration. Production is not a minor process by any means, and begins with a vision that is communicated to organisations and factories for manufacturing (As-Saber, 2018a). The workers and managers then become occupants of the factories once their operation commences after receiving orders from investors/buyers. This chapter explains the roles and responsibilities of the individuals involved and describes how each actor is expected to perform in accordance to sustaining the safety regulations.

Planning is crucial for regulating and managing urbanisation and numerous Sustainable Development Goals (SDGs) are linked with urbanisation where they address aims to make cities and human settlements inclusive, safe, resilient, and sustainable. Over the years, “planning” has evolved from being space-oriented to being related to social, environmental, and economic aspects. Professionals and theorists have also evolved in their conceptual way of thinking, placing more emphasis on relevant policies, governance, and practice (Ahasan & Hoda, 2020). Governments use planning as a primary tool to address the underlying issues of a specific area. Thus, planning is a procedure for seamlessly organising a developing space (Watson, 2018).

Planning has always been a process of divergence and changes. Perhaps that has led to planners’ roles shifting from being policymakers to consultants to builders, and at times, mediators (Ahasan & Hoda, 2020). The conflict is also possibly a result of the involvement of several stakeholders, the driving factor behind the emergence of manifold planning theories that ensure sensitivity towards the interests of all stakeholders. Paul Davidoff, a planning theoretician, considered planners to be advocates or mitigators. However, a planner’s role is most significant at the birth of a city. Unfortunately, Dhaka had not been developed with attentive planning from the time of the country’s independence in 1971, with little consideration invested in exploiting the potential of the national capital to be a nucleus for multi-faceted development (Ahmed & Meenar, 2018), amidst rapid population growth. The amenity of city life has been challenged with insufficient services in sectors including transportation, housing, utilities, community and housing facilities, social amenities, infrastructure, industrial and business services. Implementation of plans, in most cases, was delayed owing to governance failures, while some plans were not implemented at all. The role of the planners can be weakened by political manipulation where the developers, including practitioners such as architects, engineers, and other stakeholders, are patronised in matters related to building development.

The chapter commences with an overview of the modifications in the planning paradigm of Dhaka over time, from its pre-liberation status to being

the capital of an independent country. It narrates the government processes and challenges that resulted in Dhaka becoming an “unplanned” city. The impact is experienced at present within the built and natural environment and the accountability, for this includes all key players participating in planning this growing city.

The discussion in this chapter further focuses on filling the identified knowledge gaps as identified in the previous chapter, pertaining regulations for the city’s built environment, significantly the RMG factories and concentrates on the government and private regulations of safety. It explores the roles and responsibilities of practitioners, owners, and regulators and the ways in which their part in compromising or neglecting safety, is perceived. The discussion proceeds by identifying concerns of actors in previous approaches to planning and development of RMG factories and demonstrating how safety regulations can be sustained within manufacturing workplaces. Responsibility allocated among different actors, is to be carried out sincerely and ethically to maintain the principles of safety and for the RMG industry to sustain. The purpose of this chapter is to elaborate on the link between the theories of safety and responsible practice.

2.1 Brief History of Dhaka Region

Dhaka—the eleventh largest megacity in the world that, in recent times, has emerged as the fastest growing, is located in South Asia. The core city spans over 127 km² of land, however the Dhaka Metropolitan Development Plan—referred to as Dhaka Region—is over 1528 km² and includes the six municipalities of Gazipur, Kadamrasul, Siddirganj, Narayanganj, Tongi and Savar (Swapan et al. 2017). Although Dhaka has been the capital of Bangladesh for just 50 years, it was established 400 years ago, with the location of its settlements being strategically placed, considering accessibility, water communication, and merchandising routes near the bank of the Buriganga River. Although initial development extended towards the north, owing to scarcity of land, the city encroached on the eastern and western low-lying lands as well. Apart from a few planned residential neighbourhoods, most of the city’s morphology is principally spontaneous and organic.

Dhaka was originally a small rural settlement, a trading centre which, in 1608, became a capital of the Mughal Empire named Jahangirnagar (Hasan et al, 2018). Pre-Mughal Dhaka had commercial zones around the river in the west, while residential areas dominated the northern parts. During the Mughal rule between the early and late 17th century, the city grew from 124 km² to 248 km². Between 1764 and 1947, the early colonial era, industrial areas were founded by Dutch, French and British Europeans, because of Dhaka's central location and proximity to the water. In 1947, Dhaka was established as the capital of East Pakistan after partition from the Indian sub-continent and its transformation into a modern conurbation began. Post-colonial Dhaka experienced rapid urbanisation and more development of the city towards the north. One of Dhaka's oldest areas, Motijheel, was formed in the 1950s as the first central business district (CBD), (Swapan et al., 2017). The existing gardens, parks, agricultural plots and wetlands, were converted into organic and haphazard built-up areas to adjust to growing population. In 1956, the Dhaka Improvement Trust (DIT) was launched under the Town Improvement Act 1953, to provide guidance for the city's planning and development. DIT soon established a number of affluent residential areas including Gulshan, Banani and Baridhara, overlooking the urban poor. In 1959, DIT also introduced the master plan project for Dhaka to occupy an area of 830 sq. km. to accommodate one million residents with yearly population increases of just 1.75% (Poit, 2017).

Since national independence in 1971, although Dhaka has been the national capital, it has not received systematic planning attention. Little consideration has been given to planning and development procedures to maximise the potential of the city as a centre for multi-faceted expansion. Dhaka is not a "planned" city. A large number of buildings have been arbitrarily constructed, most violating building codes. For the city and other urban centres of varying scales in Bangladesh, plans were prepared at different times, with formal approval and implementation processes that consumed enormous amounts of time. In some cases, plans were approved and accepted after so much delay that they were never implemented (Kalam, 1970).

A survey found that over 78,000 buildings in Dhaka out of a total of 326,000 countrywide, have been assessed as susceptible to earthquakes of medium magnitude (Ahmed et al., 2019). Bangladeshi urban planner and architect Iqbal Habib (2009) states that according to Rajdhani Unnayan Karttripakkha (RAJUK), the Capital Development Authority of the Government of Bangladesh), over 80 per cent of the capital's buildings have been constructed without proper approval. He also added that almost 60 per cent of the other buildings were constructed without adequate monitoring by authorities—their designs were violated and regulations were flouted, this making them vulnerable to earthquakes and other accidents (Habib and Hasan, 2019). According to an article published in *The Guardian* in April 2019, Bangladesh's own government data shows that not a single RMG factory under Government's authority has eliminated all potential risks for safety hazards in their buildings after inspection (*The Guardian*, 2019). As Dhaka is believed to be violating building codes with widespread unplanned and unregulated constructions, it needs to put in place mechanisms to promote compliance with the building regulations, especially in RMG factory buildings that serve as workplaces for millions.

2.2 Understanding the Paradigm of Dhaka's Planning

Dhaka, the capital of Bangladesh spanning over 306.4 km² is about 50 years old and has already earned a global reputation as a megacity, the world's seventh fastest growing economy, the seventh happiest city, and yet one of the least liveable cities in the world (Ahmed, 2014). This promising city is home to over 21,741,000 people according to the World Population Review 2021. It is one of the most densely populated cities in the world, accommodating more than 23,234 people per square kilometre (World Population Review, 2022a). The city is reported to have an inflow of over 2,000 migrants on a daily basis (Bangladesh Bureau of Statistics, BBS, 2020). Consequently, issues such as poverty, illiteracy, unemployment, and crime have continued to challenge Dhaka for decades. Although it has been acknowledged as the capital of an independent country only around five decades ago, human settlement can be traced back as far as the 12th century until it was strategically developed into a town by the Mughals in the

early 17th century (Ahmed, 1986). Since then, the city has undergone multifaceted challenges under different leaders in its changing functions as a military outpost, trade centre, business hub, regional capital, provincial capital, and presently as a megacity with over 21 million inhabitants (World Population Review, 2022b).

Dhaka, an historical city with geographical limitations, is defined by its rollercoaster political journey of growth and development, that seems to have played a major role in its contemporary urban form. Since different parts of Dhaka were developed over different centuries and for varying intentions, it is heterogenous in nature (Kabir & Parolin, 2011). This flood prone, productive delta has always been a prominent urban area in this region and its agriculture and business prospects have attracted migrants. Although physical planning, governed by geographical limitations, is not sufficiently strong, it has impacted on the city's formation and growth significantly (Ameen, 1998).

Mughal Dhaka was established as a manufacturing centre for multiple cottage products. A few of these items included shell products, bamboo floor mats, fine cottons, refined butter and cheese along with a number of agricultural items that were exported to other parts of the country. The easily washable cotton fabrics of the Dhaka region allured European trading companies to settle and set up their factories in Dhaka (Mohsin, 1989). Inland and external trade expanded and handicraft production, especially the production of textiles sharply increased during this time (Islam, 1996a). In the 17th century, owing to its commercial significance, the European traders—the Portuguese, Dutch, English, French, and Armenians, all came to establish their trading posts in Dhaka. They established their factories in the Tejgaon area continued to enjoy commercial importance during the next century. However, the greatest development of the city took place under Shaista (Chowdhury & Faruqui, 1989).

2.3 Pre-Independence Development and Planning Initiatives for Dhaka

Settlement Before and After the Mughal Empire (1608-1757). Dhaka came into prominence after Islam Khan was appointed as the first Mughal viceroy of Bengal by the Mughals in 1608. Islam Khan formed his capital in Dhaka in 1610 with the intention of subjugating the landlords of Bengal (Ahmed, 1986; Karim, 1989). It was Dhaka's geographical position—the topographic benefits of being located on higher ground in a low-lying region, and above all its convenience of being positioned on the water-ways of the country—which convinced the Mughals to establish their capital there (Chowdhury & Faruqui, 1989).

During the Mughal era, Dhaka accomplished great commercial significance and became a trading centre for the whole of South East Asia. Dhaka had been developed into the manufacturing hub for an array of cottage products that were produced in this zone. The city's trading and merchandising glory began to decline when Bengal's capital was transferred to Kolkata after the battle of Palashee in 1757 (Hossain & Luthfa, 2014). Many of the muslin cottage businesses were closed due to the adverse impacts of British taxation policies designed to promote machine-made cotton. The weavers shifted to rural areas to earn a living through agriculture (Glassie & Mahmud, 2007). Chawk Bazar remained the main business hub as the city sprawled towards the south with commercial activities along the roads. New infrastructure being established during the British rule (Islam & Adnan, 2011). Both the population and area of Dhaka decreased during the period 1800–1840 (Ahsan, 2009). Chawk Bazar remained as the major business hub.

Town Planning during the British Colonial Period

After 1857, commercial activities expanded towards the north of the city, where most of the British bureaucrats resided. In 1905, Dhaka became the capital of the new region of East Bengal and Assam (Islam, 1996). Chawk Bazar, the retail centre of the Mughals, was converted into a wholesale nucleus, and it remains one of the city's primary wholesale zones (Haseeb et al., 2011).

In 1917, Sir Patrick Geddes, a pioneering town planner, was commissioned to develop a plan for DACCA (as the city was known during the British rule). After just a week-long visit to the area, Geddes submitted a proposal, mentioning the inadequacy of his “diagnostic survey” owing to time constraints. He suggested that additional surveys should be conducted before producing a detailed master plan for the city (Gupta, 1989). He emphasised the need to conserve the city’s inherent character while accommodating its progress. In this plan, Dhaka was segregated into zones to encourage the development of the Old Town area with colonial organisations and residential buildings around Ramna Park, which is one of the largest parks in the heart of the capital (Safi, 2010). The plan never materialised; however, the influence of the guidelines is evident in some parts of the city (Hyder, 1994).

East Pakistan Planning Phase

In 1947, Dhaka was established as the provincial capital of East Pakistan. It then expanded in size and its commercial, administrative, and industrial sectors were further developed (Hossain, 2008). The Dhaka Improvement Trust (DIT) was formed in 1956 and was authorised to plan residential, commercial, and industrial districts (Kabir, 2013).

The lack of comprehensive planning was recognised to accommodate and adapt to the sudden growth of the city. The absence of planning authorities in 1948, during the rule of East Pakistan, compelled the Government to form a planning division to lead a sub-committee which prepared a physical plan for the development of the city with insufficient formal background research (Islam, 1996). This plan was similar to a development scheme focussed on an area of approximately 50 km² around Dhaka, recommending improvement of infrastructure and new residential zones, namely Dhanmondi for the high-income group, Azimpur and Motijheel for government employees, with Tejgaon as the industrial zone. Motijheel commercial zone was a planned, central business centre, developed in 1954. The Motijheel-Gulistan sector became the heart of the new capital and its skyline changed with the construction of several high-rise buildings (Hossain, 2008). Unfortunately, these services failed to offer facilities such as parking and unloading

conveniences that are required for compliance with global standards. As a result, direct access from prime streets became responsible for uncontrollable traffic congestion in these areas (Iqbal, 2013). Studies have shown that most of the commercial buildings in this zone violated building codes (Haseeb et al., 2012).

The spatial structure of the urban area of Dhaka, had been impacted by the partial development of the residential areas with several centres of activities (Mowla, 2011). Mirpur and Mohammadpur were allocated for rehabilitation of non-Bengali refugees from India. This was the first use of the foreign concepts for providing services on sites, and “core houses” for the general masses (Islam, 1996). Tejgaon was to encourage the development of factories and provide employment opportunities specifically for the immigrants. Later, in the 1959 master plan, these schemes reflecting European impressions of design and urban planning with practical zoning of land use were adopted (Mowla, 2011).

1959 DACCA Master Plan

An expatriate firm named Minoprio and Macfarlane conceptualised the first comprehensive master plan of the city in 1958 where the objective was to establish planning principles rather than develop a thorough, inflexible scheme (Poit, 2017). They identified two main issues regarding the city development: scarcity of buildable land above flood level and congestion in the central zone of Dhaka (Kabir & Parolin, 2012). This plan was formulated over a 20-year planning perspective, from 1958 to 1978, with an estimated 1.75% annual population increase. It had a defined pattern of land use, zoning, water bodies, and buildable and flood prone areas. Two major alterations to the boundary of the region had been proposed under the jurisdiction of the DACCA Improvement Trust (presently known as RAJUK, the Capital Development Authority). With little scope to expand towards the south, east or west, augmentation was only possible towards the north, with all of Tongi included. The Trust concluded that this was adequate for Dhaka’s growth until 1978. The plan proposed developing on the land south of the bank of the River Buriganga and stated that any unsuitable development in that zone could be most disadvantageous to the town’s facilities on account

of its proximity of Dhaka (Poit, 2017). Some of the other significant suggestions made were (Ameen, 1998):

- to reduce Dhaka's growth, it was strongly recommended that a national planning policy be devised for Bangladesh, aiming to expand industry and commerce in other towns;
- the city's growth as a capital, and university and administrative centre was driven by the establishment of new industries—therefore it was argued that consideration should be given to steering them elsewhere;
- it was estimated that around 70,000 people would be employed in factories and 1400 acres would be utilised for factory establishment;
- 4481 acres of land was designated to be zoned as an industrial area where at least 224,050 people would be employed at a rate of 50 persons per acre;
- several new housing schemes were recommended;
- detailed strategic locations were chalked out. For example, it was proposed that Tongi, a town on the outskirts of Dhaka in the far north that lacked easy access to Dhaka, should be developed as a self-sufficient new area including a community of residents and a nucleus of industry. Mirpur on the other hand, having good communication with the main city, was proposed to be a residential satellite;
- the old city, with its unique living standards, could be extended.

However, owing to an unexpected increase in population and socio-political circumstances, RAJUK was unsuccessful in fulfilling their task.

The progression of enactment of planning policy is manifested more by violation and deviation than observance to the original plan. RAJUK endeavoured to establish new residential, administrative, and commercial zones, changing patterns of land use, and creating detailed structure plans that were never to be implemented. Once again, ad hoc pronouncements from bureaucratic authorities and natural pushes such as population growth, need for expansion and others determined the city's growth (Mowla, 2011).

2.4 Post Independence Major Urban Development and Planning Initiatives for Dhaka

A number of planning initiatives for Dhaka metropolitan area, as the administrative and commercial capital of the nation, have been undertaken since the inception of Bangladesh.

1981 Dhaka Metropolitan Area Integrated Urban Development Project

In 1981, an expatriate firm, Shankland Cox Partnership, with the support of the Asian Development Bank, undertook the Dhaka Metropolitan Area Integrated Urban Development Project (DMAIUDP) (Talukder, 2006). The purpose of this plan was to provide a long-term strategy for urban expansion with the impetus being drainage of storm water that led to floods in the metropolitan area of Dhaka. With limited resources, it was realised that it would not be possible to make the low lands free of flood risks. The focus shifted to acquiring developed land for growth in a more linear pattern. The plan considered the city to 2001. These recommendations were never seriously considered, however many of the propositions of this plan later proved to be accurate and provided a comprehensive basis for the urban development of the capital (Zaman & Lau, 2000).

1995 Dhaka Metropolitan Development Plan

Another group named Mott Macdonald, in association with Culpin Planning Ltd and others, took charge of the Dhaka Metropolitan Development Plan (DMDP) in 1995. It was depicted as a structure plan and had four main components—strategic expansion options, a structure plan, an urban area plan and a detailed area plan (DMDP, 1995). It presented a strategy for the development of a greater region of Dhaka for the 20 years to 2015. This 1528 km² area was governed by RAJUK under the Town Improvement Act 1953 (Ahmed, 2018). The assumption made in the plan was that a vast area including the existing lowlands would become flood free with the implementation of the Flood Action Plan. This would lead to new peripheral growth in the east and west with agricultural land in the north allocated for the wealthier inhabitants, following development trends. The recommendations included improving infrastructure to connect the new,

sprawling developments initiating the vision of low-rise buildings within a less concentrated city and minimising traffic congestion in the older areas of the city (Zaman & Lau, 2000).

Dhaka Structure Plan 2016-2035

In 2015, RAJUK initiated the project “Regional Development Planning (RDP)” financed by the Asian Development Bank (ADB). The project’s primary aims are to review the Dhaka Metropolitan Development Plan (DMDP) and revise (not prepare) the Structure Plan for 2016-2035, outline a Feasibility Study and Master Plan for Satellite Cities and Capacity Building and Training for Urban Planning Professionals serving RAJUK and others (RAJUK, 2015). To accomplish these objectives and facilitate the city’s sustainability within the DMDP, RAJUK joined hands with national and international consultants to develop the Dhaka Structure Plan (DSP) 2016-2035. The concept of this detailed plan is to remodel Dhaka into a polycentric megacity incorporating an efficient and functional interconnecting transport system (RAJUK, 2015).

2.5 Summary of Dhaka’s Planning and Governance over the Centuries

It may be summarised that Dhaka developed from a rural settlement to a megacity without much effort being invested into planning. Four distinct urban patterns are identifiable in the city which reflect the city’s age, its rulers, the philosophies of planning and planning control (Nilufar, 2010). The historical core, or Old Town, which still consists of the Mughal layout, is the oldest remaining part of the city. Narrow lanes with compact, mixed-use structures, remain as a reminder of the glorious past. Secondly, the urban zone comprises the formally planned areas or satellite towns, Dhanmondi, Gulshan, Mirpur to name a few, which have been conceived and designed since the 1950s (Sharmeen & Houston, 2019). Until 1980, RAJUK had sole authority for planning and designing the city’s development, but later private developers were involved. The third urban pattern, which covers most of the development, may be categorised as a fusion of the old and formal patterns, while 30% of the dwellers live in the fourth category: shanty settlements and slums (Mowla, 2011).

The city's urban planning and infrastructure have not kept pace with population growth or sustainable development requirements. Coordination between vertical and horizontal growth is missing from spatial planning and infrastructure scheduling (Aminuzzaman, 2020). Master plans of urban sprawl have consistently underestimated population and municipal growth and been unsuccessful in allocating adequate space for expansion (Bird et al., 2018).

Presently, Dhaka continues to grow rapidly as a megacity, in an uncontrollable manner. The population grows every day, and more congestion is created in the main centres of activity. It is evident that without crucial decisions in terms of development, overcrowding will soon reach insufferable levels (Kabir & Parolin, 2011). Although decentralisation is widely discussed and emphasised in planning reports, its implementation is neglected. The city is the nerve centre of the country's economy; however, its governance system is said to have advanced more by default than strategically. Few decisions are made keeping society and environment in perspective (The Daily Star, 2017). Issues concerning urban governance cannot be considered separately from economic dynamics, therefore policies should be planned in a way that urbanisation, and the development of industries and services are appropriately connected with economic progress (Aminuzzaman, 2020). Urbanisation is inevitable and accelerating in developing countries where the lack of affordable land and labour costs compel industries to settle on the periphery of cities (Kabir, 2013). Although in some places it is encouraged by government, in the case of Dhaka, it has been organic and rather forced by international markets and heavily influenced by the country's socio-economic status (Kabir, 2013). Comprehensive action is immediately required to recognise the character of certain areas and exercise control in a sustainable method.

2.6 Emergence of the RMG Industry in Dhaka

The part of the Mughal empire comprising Bangladesh, known as Bengal during the Mughal rule, was considered to be the empire's wealthiest province and one of the world's major trading nations, generating 50% of the empire's GDP and 12% of the world's input (Ahmed et al., 2012). Two of its

most flourishing businesses then were textile manufacturing and ship building. The city had an estimated 80,000 skilled weavers and exported silk, cotton, and the much renowned material muslin, which is believed to have originated in what is currently known as Dhaka. The Bengal Subah, also known as Mughal Bengal, was a sector of the Mughal empire encompassing a major portion of the Bengal region, including contemporary Bangladesh and the Indian state of West Bengal. Between the 16th and 18th centuries, under the Mughal rule, Bengal Subah was the centre for supplying muslin and silk worldwide. Bengal was considered the most prosperous and industrially the most advanced place in the world having surged into proto-industrialisation with its economy displaying signs of industrial revolution (Lewis & Schendel, 2020). With its quality-of-living standards and real wages for the workers being among the highest in the world, Mughal Bengal was popularly referred to as the “Paradise of Nations”. During this era, the most significant centre of cotton production was Bengal, principally around its capital, Dhaka city. This led to muslin being called “daka” in the foreign markets. Bengal had also been a leading exporter of cotton and silks to markets such as Europe, Japan, and Indonesia, and manufactured more than 50% of textiles and about 80% of silk and raw cotton to be imported without taxes or tariffs to British factories. Mughal Bengal emerged as a quasi-independent state under the Nawabs of Bengal and made a direct, significant contribution to the very first industrial revolution for substantially manufacturing textiles during that period (Schendel, 2009).

The downfall of the Mughal empire began in 1741, when a series of Maratha invasions took the lives of nearly 400,000 civilians, many of whom were weavers, merchants, mulberry cultivators, or silk winders. Countless women and children were tormented, eventually devastating Bengal’s economy (Wang & Sarker, 2020). Several factories in Bengal which housed silk products were burnt down, along with the weavers’ looms. The region was subjected to further deindustrialisation after being taken over by the British East India Company at the Battle of Plassey in 1757. By the end of the 18th century, the British East India Company emerged as the primary military power, gaining administrative authority over the defeated Bengal Nawab’s

dominions (O'Ballance, 2009). By the mid-19th century, the company had risen to the pinnacle of political and military power in the Indian subcontinent. It implemented compulsory schemes for cultivators in which peasants were permitted to grow crops only in certain areas to be later purchased at lower than the market rates for export. This was the commencement of rural poverty in one of the wealthiest regions of the world (Britannica, 2021).

In 1905, some divisions of the region were transferred from Bengal to a new province. Five Hindi-speaking states were converted from Bengal to the Central Provinces, while West Bengal consisted of thirty-three districts. Bengal had been controversially fragmented into a largely Hindu West Bengal consisting of the Dominion of India. The predominantly Muslim East Bengal was awarded to the Dominion of Pakistan. Bengal retained its 1912 boundaries until 1947, when it gained independence and was once again partitioned between the dominions of India and Pakistan (Banglapedia, 2021). The segregation displaced 10–12 million people based on their religious background, generating an overwhelming refugee crisis, which eventually led to extensive violence resulting in the loss of the lives of over two million (Ranjan, 2020). From 1947 to 1971, the textile industry, like many other trades in East Bengal (renamed East Pakistan in 1955), was chiefly owned by the West Pakistanis. In the 1960s, local Bengali entrepreneurs established their own textile and jute factories but following its independence from East Pakistan in 1971, the newly formed country, Bangladesh, lost both capital and a great deal of technical expertise. Until its liberation, the textile sector in Bangladesh was primarily based on the system of import substitution industrialisation to replenish imports; being an underdeveloped country then, it was mostly dependent on developed nations. After the war, Bangladesh developed export-oriented industrialisation (EOI) by emphasizing textile and clothing manufacturing, particularly the readymade garment (RMG) sector (Menon et al., 2020). During that period, tea and jute were the most common export-oriented products, until this was challenged by natural disasters, particularly floods. The decreasing worldwide demand for jute and declining jute fibre prices damaged this sector—which had made

a significant contribution to the country—and led to the deterioration of the nation's economy.

After 1972, the freshly formed government of the nation endorsed the Bangladesh Industrial Enterprises (nationalisation) Order, amalgamating private textile factories and forming a state-owned enterprise (SOE) named Bangladesh Textile Mills Corporation (BTMC) (Menon et al., 2020). However, the BTMC failed to match the pre-1971 output and lost money yearly after the 1975–1976 fiscal years (Mia & Akhter, 2019). Until the early 1980s, almost all the spinning mills and 85% of the assets of the textile industries (excluding small businesses), were owned by the country. A large portion of these assets including jute mills and textile mills, were privatised and returned to the original proprietors under the 1982 New Industrial Policy (NPI) (Ahad, 2014).

The country was confronted with yet another trial in 1974: famine. Over a million starvation-stricken people died, struggling with the impacts of the flooding of the Brahmaputra River and increasing price of rice (Elahi, 2017). The Government, partially in response to the economic and political repercussions of the famine, moved public policy away from its focus on a collective economy and activated denationalisation, disinvestment, and reduction in the roles of the public sectors of the textile industry while motivating participation of private sectors (Rahman et al., 2017). In the late 1970s, global restructuring processes, consisting of two non-market factors—the quotas under Multi-Fibre Arrangement (MFA) in the North American market along with the privileged market access to European markets—led to the “emergence of an export-oriented garment industry” in Bangladesh. It commenced with just nine export-related garment manufacturing units at that time, which generated an income of barely one million dollars (Berg et al., 2021).

In 1974, perhaps as the first step towards globalisation, developed countries implemented MFA through quota restrictions, to protect their own textile industries against competition from more capable manufacturers in developing nations, Asia in particular (World Bank, 2005). This was primarily applied to countries that exported substantial quantities of textile products to

the first world countries. South Korea, Taiwan, Hong Kong, and other such trading regions faced quota restrictions along with excessive labour wages (Morshed, 2007). Bangladesh however, maintained its quota free status until 1985. The United States and other major importers, imposed quotas the next year, acknowledging that the quota system had been beneficial for Bangladesh with its competitors facing the quotas much earlier (World Bank, 2005). The quotas acted as an assurance for a specific amount of export sales, helping to establish presence in the market and providing a path to emerge out of the MFA barrier with its comparative lead over other countries (Hossain, 2013).

Many of these manufacturing units were not fully functional factories but catered to both domestic and export demands. One example of such garment manufacturing units is Reaz Garments, which was established as a small tailoring shop in 1960 in Dhaka (Yunus & Yamagata, 2012). After its service in the domestic market for nearly 13 years, it changed its name to M/s Reaz Garments Ltd and introduced a new dimension of business into the Bangladesh export industry by disseminating 10,000 locally manufactured men's shirts worth almost 13 million francs to a company based in Paris. In 1978, Nurool Quader Khan pioneered the readymade garment industry with vision to transform the country. He sent 136 trainees to South Korea to learn the process of manufacturing readymade garments (BGMEA, 2020a). On their return, he founded Desh Garments, the first garment factory in the port city Chittagong to use convenient export facilities. In association with South Korea's Daewoo Corporation, he first exported garments to foreign countries (Mian, 2020). Prudent entrepreneurs began to follow his footsteps, despite countless difficulties and neglecting planning regulations.

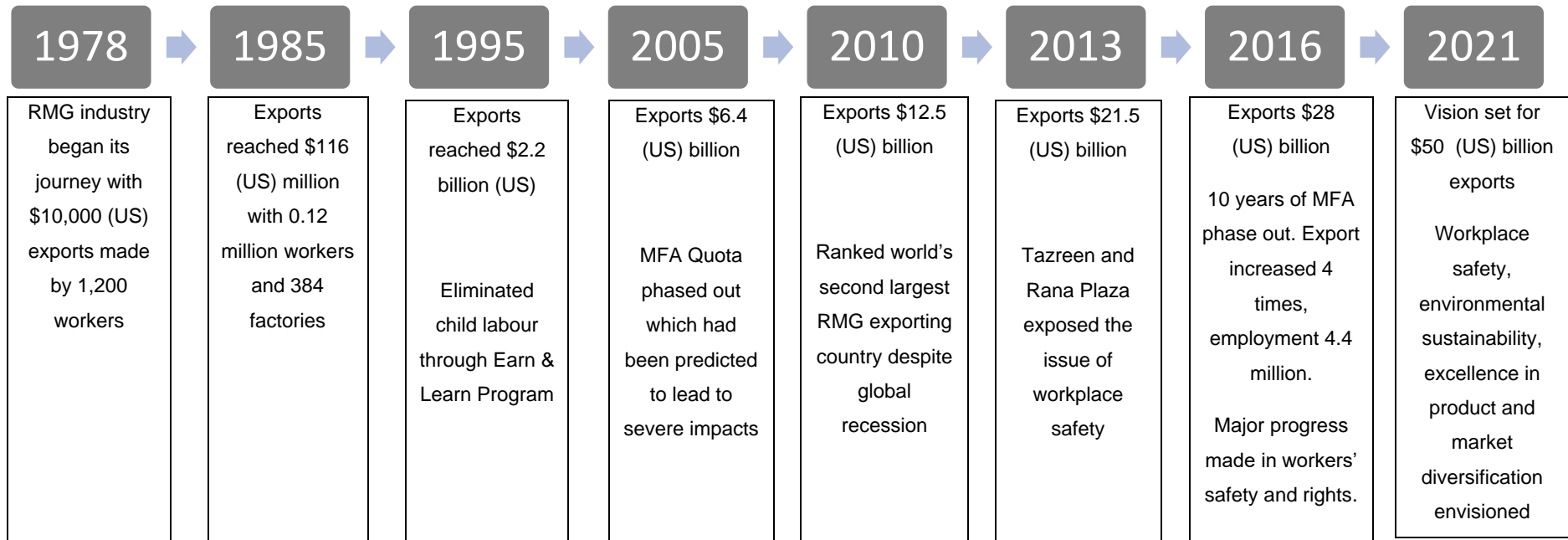
Through a collaborative arrangement, Desh Garments was given the opportunity to send 130 workers and management trainees to Daewoo's state-of-the-art technology plant at Pusan in South Korea for training. On their return after six months, the trainees formed the nucleus of the RMG sector's technological and human resource base (Yunus & Yamagata, 2012). In 1980, another South Korean company, Youngone Corporation, established the first garment factory with equity in a joint venture with a

Bangladeshi firm named Trexim Ltd. The company exported its first consignment of jackets to Sweden in December the same year (Rahman et al., 2018).

Since then, the country's growth in the garments industry has been phenomenal, due to relatively inexpensive machinery which is readily available. Additionally, the manufacturers can operate in smaller premises than those in the textile industry. Labour in Bangladesh is cheap, consisting mostly of women who prefer to work in factories rather than in households as domestic helpers or maids (Absar, 2001). This has aided in decreasing unemployment in the country, while factors like liberal trade policies, low tariffs on imported machinery, and warehouse facilities assisted the rapid growth of this industry. The industry currently ranks among the largest in the world, with Bangladesh being the second leading exporter after China (RMG Bangladesh, 2022). Some of the feats attained by the RMG industry through several decades are illustrated in Figure 2.1 below.

Figure 2.1

Development of the RMG Industry



Note. Source: Global Trends in the Garment Sector and Opportunities for Bangladesh (2021).

2.7 Significance of the RMG Industry

The contribution of the RMG sector to the economy of Bangladesh has been phenomenal in comparison to any other sector in terms of growth and foreign exchange income. In addition, in terms of production, employment and poverty reduction, this sector has been leading for almost three decades (Hossain & Uddin, 2021). Although there are perhaps countless impacts of the RMG sector, the following sections shed light on a few that are relevant to this study.

2.7.1 Economy

Its influence on socioeconomic development has set a global example and is acknowledged as the most formidable pillar of the country's earning capacity. 83.9% of Bangladesh's national exports is derived from RMG export, and it constitutes 11.2% of gross domestic product (GDP). It was only 0.001% in 1976, 3.89% in 1983–1984 and in fiscal year (FY) 1990–1991, the percentage of RMG contribution to the GDP was 2.74%. This rose significantly to 83.9% in FY 2017–2018, indicating that it was the primary contributor to the country's economy (Mia et al., 2020). The RMG Sector is one of the most rapidly progressing in the economy, with growth of 55% from 2002 to 2012! Export of textiles, apparel and ready-made garments accounted for 77% of the country's total merchandise exports in 2002. By 2005, this industry was the sole multibillion-dollar manufacturing and export industry in Bangladesh, accounting for 75% of the nation's income that year (Hossain & Uddin, 2021).

2.7.2 Employment

While being a major influence on the country's economy, the RMG sector of Bangladesh has played a key role in generating employment and creating a source of income for the poor. Over 12 million residents are indirectly associated with this industry, making it the largest industry in Bangladesh, and also making it fundamental to socio-economic development (ADB, 2015). The benefits derived from the RMG industry have been enormous. Bangladesh has always had the advantage of having “cheap” yet skilled labour for the manufacturing industry. The outcome is a lower cost of

production and higher profit, which has drawn the attention of companies across the globe. Among the 4.5 million workers employed by the RMG industry, 85% are illiterate women from rural areas, the highest percentage of such employment in South Asia (ILO, 2021).

2.7.3 Scope for Women

During the past 25 years, the number of manufacturing units has grown remarkably from 180 to more than 5,000 at present. Around 4,500 of them are in and around Dhaka, employing more than four million labourers, 90% of whom are women—the highest employment figures for women in South-East Asia (Schwab et al., 2020). Although critically reliant on the abundant inflow of female migrants from the countryside who are prepared to serve as domestic help under exploitative conditions, the RMG industry created opportunities for rural women with little or no education. These women preferred to work at factories as it is more liberating and prestigious than serving as a hired help at residents of the well-to-do. At present, approximately 3.6 million women in Bangladesh are employed in the RMG industry, the majority being from rural areas. The ratio of male to female workers is 41:59, making it a groundbreaking opportunity (Schwab et al., 2020).

The emergence of the RMG sector is perceived as one of the greatest things that has happened in the Bangladesh economy, as it created many employment opportunities for women in particular. It provided room for female participation and progress in a middle-income country where women have striven for years to become independent and make a living on their own. The country needs to appreciate the role of this sector more, and enable policy makers, along with all others involved, to undertake initiatives that would assist in achieving greater benefits for the country and its people (Hossain, 2019).

2.8 Factors Leading to the Globalisation of Dhaka's RMG Industry

Certain forces led to the rise of the garment industry in Bangladesh. The primary catalysts were globalisation, dynamic private entrepreneurship, and

urbanisation leading to internal migration, poverty, and unemployment. These driving forces eventually helped the country to achieve a handsome share in the global garment market. Since the 1990s, the RMG industry has retained its position as the largest foreign exchange earning segment in the nation's economy (Haque & Bari, 2021).

2.8.1 Globalisation

Globalisation compels communities to compete with cities worldwide, simultaneously attract investors and create scope for employment. Looking back, Bangladesh was highly dependent on its agriculture-based industries and progressed to jute manufacturing during the mid-20th century (World Bank, 2017). The jute manufacturing sector is one of the oldest in Bangladesh and emerged in erstwhile East Pakistan in the early 1950s. Jute and tea were the most export-oriented industries after Bangladesh came into being, but with the recurrent perils of flood, decreasing jute fibre prices and a considerable decline in world demand, the jute sector in the country's economy weakened (Rahman, 2017). Post liberation, the country's independence was challenged with decelerated industrial development. However, the Ready-Made Garments (RMG) industry commenced during this period and attained considerable success within a short period of time. Presently, garment export is the primary source of foreign exchange. This industrialisation began in the 1970s when South East Asian investors ventured to establish garment factories in Bangladesh and intended to work around the export quotas enforced on their native countries by the United States (Shamsuddoha, 2005). Hence, after independence, Bangladesh slowly but steadily promoted economic development through the garment industry, gradually moving away from the agricultural sector.

Bangladesh is a country of interest being located at the crossroads of Southeast Asia and South Asia, with many shared strategic concerns with the United States involving global peace and security (Committee of Foreign Relations, 2020). Its RMG sector is in the focus for a wide international community, but progress may be jeopardised if working conditions are disappointing and consumers disapprove of buying reasonably priced clothes

at the cost of risking the lives of Bangladeshi workers (Committee of Foreign Relations, 2020). Buyers may be compelled to abandon the label of “Made in Bangladesh” to protect the safety of the underprivileged labour force.

Until the mid-1970s, manufacturing of export-quality garments was practically non-existent in Bangladesh. The factories were only catering to domestic demands with made-to-order small-scale tailor shops. In the light of twin tendencies of a new international division of labour (NIDL) and globalisation of production, some budding economies such as South Korea, China, Taiwan, and Hong Kong made their first appearance as garment suppliers around the world (Weiss, 2005). With the adoption of the New Industrial Policy in 1982 and the Revised Industrial Policy in 1986, there was decelerated progress towards a more liberal economic administration in Bangladesh in the early 1980s (Perman et al., 2004).

The extensive quantitative restrictions on Imports and firm exchange control measures that existed in the economy after the country’s independence, were gradually made more lenient during this phase. By introducing export subsidies and reducing import duties on inputs utilised by exporters, the Government promoted exports. In addition, the BEPZA Act of 1980 enabled the establishment of Bangladesh export processing zones (bepZA, 2002). These EPZs were developed in export-oriented districts nationwide with Dhaka Export Processing Zone (DEPZ) established in 1996 (Bhattyacharya, 1998). This period also saw a decrease in the anti-export bias of business administration, with the proportion of the effective exchange rate for imports to that of exports being progressively reduced over time. Additionally, a unified exchange rate system was introduced by eradicating the “Secondary Exchange Market System” and implementing a moderately adaptable exchange rate policy. However, the expansion of RMG factories continued throughout the city simply because of the industry’s positive impact on the country’s economy (Swazan & Das, 2022). Entrepreneurs initially engaged workers immediately after installing manufacturing machinery in any space that was available to them, regardless of occupational health and safety issues. Businessmen took for granted that buyers would come naturally once machinery had been set up and workers deployed. Unfortunately, their

strategy worked for some time. Government too was acquiescent to unsuitable working conditions as it was being rewarded by a boost in the economy along with other developments (Haque & Azmat, 2015).

In the 1990s, globalisation aided all the proximate sources that upsurge the demand for non-tradable items and services. Initially, the RMG sector of Bangladesh was primarily export-oriented, and globalisation significantly influenced the import-export policies along with increasing remittances.

During this era, Bangladesh benefitted from some external supports such as the Multi-Fibre Agreement (MFA) of the United States' and European Union's Generalized System of Preferences (GSP), which accelerated the expansion of this industry. By 1994, Bangladesh had committed itself to current account convertibility (Ernst et al., 2005). The garments industry achieved increasing success every year from that time onward, contributing enormously to the country's economy and making its place among the top exporters in the world. However, globalisation also put Bangladesh in a position where the disasters within its RMG industry attracted immediate global attention and scrutiny.

2.8.2 Urbanisation

Urbanisation and development walk hand in hand. Significantly for developing countries, urbanisation entails a need for growth to sustain the process. According to the World Bank Report (2009), urbanisation is one of the most distinct drivers of the development of manufacturing and services related activities within a country. This phenomenon moulds the lifestyle of people and determines the economic status of a developing community. Industrialisation is generally the outcome of urbanisation, which with prosperity diminishes the dominance of agricultural trades while industrialisation accelerates growth of the national income (ADB, 2015). It also plays a vital role in the developmental progress of a nation's political and social resources through enhancement of health and educational facilities. However, urbanisation often leads to rural-urban migration and population increase, which in turn, may give rise to new challenges like poverty, scarcity of resources, crime and so forth. Bangladesh's capital Dhaka is one such city that both benefitted and suffered owing to urbanisation.

In 1958, prior to independence, an expatriate firm Minupria and Macfarlane made the first comprehensive master plan of the zone that contained Dhaka. The aim was to establish planning ideologies rather than to present a profound and flexible scheme. They identified two main issues concerning the development of the city availability of land above the flood level and congestion in the older part of Dhaka, currently known as Old Dhaka (Kabir, 2013). In 1961, only a little over 5% of the population resided in the urban areas of the city—just 20% of the country's population (Zaman & Lau, 2000). Over a planning period of 1958 to 1978, with an estimated population increase of 40% (1.75% per annum), the plan demarcated water bodies, land use patterns, zones, flood prone and buildable areas. Two primary transformations were recommended regarding the city's boundary area under the jurisdiction of the Dacca Improvement Trust, now known as RAJUK (Rajdhani Unnayan Kattirikokho), the Capital Developmental Authority (Kabir & Parolin, 2011).

Since Dhaka did not have much scope to expand to the east, west or south, it was proposed that the northern periphery should be extended towards Tongi, an area just at the city's boundary, including all land suitable for building. The Capital Building Authority concluded that this would be adequate to accommodate the capital's growth until 1978. The proposal also included having authority over the land on the south of one of Dhaka's largest rivers, the Buriganga, as "any unsuitable development there could, on account of its proximity to Dhaka, be most detrimental to the town's amenities" (Kabir & Parolin, 2011). Unfortunately, because of unprecedented growth and other factors, Dhaka, for the first time, was identified as one of the global megacities by the United Nations. It rose from sharing 20% to 24% of the country's population in 1974, to 26% in 1981 and 30% in 1991, and with significant alterations to socio-political conditions, RAJUK was unsuccessful in fulfilling their task (Talukder, 2019). RAJUK had endeavoured to develop separate areas for administrative, commercial, and residential purposes, but the process was marked by breaches and more deviation from than adherence to the original plan. Ad hoc decisions made by bureaucratic bodies and natural forces predominantly shaped the city's

growth (Mowla & Afrin, 2008), bringing new challenges. Dhaka's population, which is largely comprised of migrants, still maintains its top position among the country's major issues with more than 64.81 million people dwelling in urban areas (World Bank, 2019).

Regardless of these trials, millions of people migrate every year, temporarily or permanently, to major urban centres in search of employment and other opportunities, hoping to overcome the distressing living standards in the villages or small towns. Some are driven to escape to the cities owing to weather or climate anomalies such as floods or storms. This trend of inflowing people contributes to the growth of the urban population which at times becomes uncontrollable and unprepared for (Ahmed & Meenar, 2018).

2.8.3 Population, Poverty and Migration

Dhaka is the country's cultural, political, and economic centre, a beta-global city connecting moderate economic regions to the world. Its meteoric population growth has been predicted to continue at a confounding pace, with the capital attracting migrants who arrive every day in search of a better life. While many of these migrants work as rickshaw-pullers or hawkers, about 800,000 of them engage in the textile industry (Gu et al., 2021). It is hence a classic case of a "primate city" with its population being more than that of the three largest cities (Chittagong, Rajshahi, and Khulna) combined (Ahmed & Meenar, 2018).

Poverty-stricken rural people move to the cities in search of a better lifestyle and more employment opportunities. With the garment sector growing and global demand increasing, the requirement for recruitment of labour, grew rapidly. Rural people availed themselves of this opportunity and chased their dream, simultaneously transforming the urban centres, specifically Dhaka, into human hives and contributing to rapid and unintended growth of towns and cities. The capital that was designed to accommodate just a million people in the 60's, currently houses 21,006,000 (UN, 1987), turning Dhaka into the most densely populated city in the world. Although it is arguable whether the establishment of the garment industry was supported by migration, it attracted people living in the rural areas who were looking for "respectable" employment. The textile industry appeared lucrative in terms of

the “prestige” people could earn, and for the freedom it allowed. Today, with limited training, these people are readily eligible for employment in the garment factories. In addition to believing they are underpaid, people working as “maids” or “hired/domestic help” in households are not respected and have very little freedom. Domestic work is a 24/7 job with perhaps only a few days’ leave once a year (Rahman, 2018).

The decade of the 1990s was a period of accelerated economic growth and swifter reduction of poverty in comparison to the 1980s. Whereas in the 1980s GDP grew at 3.7%, in the following decade, it had risen to an annual average rate of 4.8%, hence increasing the income of an average Bangladeshi by around one-third (Osmani, 2004). Several studies have shown that industry and services contributed almost similarly to the incremental progress in the 1990s, each sharing around 41%, with agriculture interjecting only 17%. Among others, the manufacturing sector weighed in with 28% which was comprised of 20% from the large and medium industries (Islam, 2004). By the mid-1990s, the RMG industry was contributing about 25% of the country’s economy and employing between 40–50 % of the workforce in large and medium manufacturing factories. The growth of RMG industries was also momentous during this era, with the number of production units increasing from fewer than 1,000 in 1990/91 to nearly 3,000 towards the end of the decade. The aggregate profit in this sector increased from Tk. 10 billion in 1988/89 to over tk. 35 billion in 1997/98 (Hossain, 2019). This scenario also created more opportunities for the rural population, who were mostly uneducated and inexperienced in the work field of the capital. It provided them with the scope to make a decent living in the city with minimum training and only required the ability to sign their names where needed (Osmani, 2004).

The garment factories created a very new role for the rural women, positioning them in commercial workplaces and even launching them as the primary bread earners of some families. This factor influenced the migration pattern also. A survey carried out in 2013 explored the difference between male and female rural urban migration and revealed that about 64.8% of women shifted for the sake of their families, for instance, to join the

husbands, children, or in-laws (Biswas et al., 2019). Recently, female migrants involved in income-generation have been observed to migrate to the city in search of work, preferably in the factories than as domestic helps. Inflow of rural population into the city of Dhaka escalated within a span of few years, people having abandoned their life of farming to access the new opportunities that the RMG industry had to offer.

2.8.4 The Allure of Rapid Economic Growth

Poverty is a key pushing factor in migration. Unavailability of work, scarcity of food and the urge to improve livelihood, compel rural people to migrate to the cities. This shift from villages to the cities is also much about the construction of identity. Migration, however, symbolises development. It is a significant course towards liberation from poverty with substantial impact on the livelihoods of people and their wellbeing. The transition from village-dependent, agrarian economy to a city-based, industrial one, is fundamental to the sequence of economic empowerment (Siddiqui, 2012). In most developing countries, policymakers have attempted to retain the agricultural sector as the primary engine of economic growth and generator of employment. This tactic proved to be unproductive owing to the impact of the Green Revolution, which influenced the rise in agricultural efficiency in the least developed countries, simultaneously displacing the rural labour force (Jao, 1976). Directed by the East Asian economies, most of the developing nations addressed the requirement for greater industrialisation as the most expeditious path to prosperity. Countries like South Korea, Taiwan, and Japan followed an export-oriented industrial policy which not only increased the per capita income and standard of living within a relatively short period but at the same time, played a crucial role in modernising and incorporating the economy with the global mercantile system (Fry, 1982).

Bangladesh's enviable growth would not be so exhilarating if it had not served the poverty-stricken. According to a World Bank report, between 2005 to 2010, average earning for the poorest 40% of households rose 0.5% faster than for the country as a whole (World Bank, 2021). Poverty rates have plummeted as a consequence of inclusive growth—today less than 14% live in extreme poverty, i.e., about 50 million people, whereas in 1991, the figure

was well above 40%. Bangladesh's recent economic triumphs can be attributed to two major factors: the country's robust NGO (non-governmental organisation) sector and the thriving garment manufacturing industry (World Bank, 2021).

The country was incredibly poor when it became an independent nation in 1971. The GDP rate was -14%. However, it has greatly progressed since then and the average growth rate is currently 8%. Between 1970 and 1991, in Bangladesh, the proportion of people living in the rural areas declined from more than 90 per cent to 80 per cent, with the country's population experiencing an annual growth rate of 6.5% (Afsar, 1995). A transformation in the occupational pattern was observed which shifted the focus of the rural people from the villages towards the cities in hope of a better life and enhanced lifestyle. Although the agricultural sector continued to be the primary employer, its share of total employment of the rural residents dropped significantly from 85.8 per cent in 1974 to 70 per cent in 1989 (Afsar, 1999). The number of rural workers in the construction and manufacturing sector also quadrupled from 3.7 per cent to a massive 14.9 per cent, simultaneously raising Dhaka's population from 1.6 million in 1974 to 3.7 million in 1989. Its significance as a commercial, administrative, and manufacturing centre had been established and by 1985, the urban areas of Bangladesh were generating one-third of the country's GDP (Khan & Zafarullah, 2018).

2.9 Challenges Introduced by Dhaka's RMG Industry

Besides the natural calamities like floods, this scope and growth also brought in new challenges, especially for the two main hubs of this industry, Dhaka and Chittagong. Approximately 400,000 people moved to Dhaka every year as of 2013, according to the World Bank, while the International Organization for Migration (IOM) estimated that 70% of Dhaka's slum-dwellers shifted there fleeing some kind of environmental shock. Dhaka, in particular, being the capital, was challenged with the tremendous in-flow of people on a daily basis (IOM, 2015). The city, which arguably already had poor infrastructure, was now bound to accommodate these people who had arrived with hopes

for a better life and simultaneously provide them with employment in this rising industry of RMG.

The year 2,000 was only the 29th year of the independence of Bangladesh, with a booming population of 131,581,243 and an economy of \$53.4 billion. Both the Mughals and the British had elected Dhaka as their capital and hence it continued to be the central administration district and possibly grew more rapidly than other neighbouring regions for this reason (Streatfield & Karar, 2009). The city entered the millennium with a population of 10,285,000, ranking it as the 20th most populous city in the world. Bangladesh's population of more than 160 million is equivalent to that of France, Germany and the Netherlands combined. It is also considered the poorest of the world's 10 most populous countries (World Population Review, 2021). However, given its magnitude and poverty rate, the nation's recent economic prosperity must be ranked as one of the world's happiest economic stories of the last two decades. Already named a "megacity" and one of the fastest growing in the world, Dhaka has a rising economy that has caught attention worldwide.

Dhaka is the nation's financial, commercial and entertainment base. It accounts for up to 35% of the country's economy and is home to its monetary authority, the Bangladesh Bank and the biggest stock market, the Dhaka Stock Exchange. The Globalisation and World Cities Research Network ranked Dhaka as a beta-global city (<https://www.coursehero.com/file/101536246/Globalization-and-World-Cities-Research-Networkpdf>). Tejgaon and Hazaribagh are the two areas within the city that accommodate most of its industries but for the past decade or so, industry has extended outside its periphery, towards Tongi. The rapid growth of the garment industry has attracted numerous migrant workers and while half of the workforce is employed in households and unorganised labour. Millions of people have left their poor rural surroundings, in hope of fulfilling their dreams and aspirations, for the glimmer of opportunities that the capital seemed to offer. This swift in-flow of population was not something the city or its administration was prepared for. Dhaka, designed to accommodate one

million people in the 1960s, currently teems with more than 21 million people, which is a population density of 10,000 persons per km² (World Bank, 2021).

Owing to the rapidly increasing urbanisation of the developing regions, urban development issues have been brought into attention and the need for good governance is being acknowledged. Dhaka can thus be considered an appropriate area for study as the current governance issues may be attributed to previous rulers such Britain and Pakistan, as Bangladeshi governments themselves have not introduced systems of local governance for the people. In such a developing country, policies are governed by poverty concerns—meeting basic requirements and makeshift planning decisions in order to do so (Kabir & Parolin, 2018). Presently, the city is challenged by enormous population growth that consequently has been increasing strain on already inefficient urban services and limited resources to fulfil the needs of citizens, majority of whom live below the poverty line.

In developing countries like Bangladesh, building codes are often not obligatory (Thiruppugazh, 2008). In fact, in the country's National Building Code it has been claimed that "the Building Code is not an independent legislation or act, rather it is a national level approved document" (Ahmed et al., 2018). Implementation of codes and compliance is often met with barriers which include futile governance and corruption (GFDRR, 2015), adding to the existing complexities and resulting in greater vulnerability to unfortunate incidents. As a result, megacities like Dhaka continue to experience widespread violation of regulations. The country has been confronted with countless difficulties in the path towards good governance and democracy based on transparency and accountability. The contemporary practice of fragmented governance has resulted in several critical service-related issues such as discrepancies within production and safety planning, management, depletion of resources, and manifold public inconveniences such as traffic, transportation, water, and gas supply, and so forth. People have begun to realise that land use planning as a decision-determining tool leads to an enabling environment for sustainable development which fulfils needs and demands that are assured by an effective governance system (E-Vahdati et al, 2019).

The city continues to be damaged by the outcomes of unplanned and sporadic development. Bangladesh is progressing at rapid rates in different sectors and to be sustainable, it requires systematic planning which involves technically and structurally rigorous urban plans that welcome citizens and stakeholders (ADB, 2020). The urban government strives to play an effective role while dealing with a multiplicity of establishments and overlapping of their authority (Mollah, 2008). The consequence has been conflict, disputes and reprimanding one another for incompetent and unsatisfactory services that have resulted in unprecedented failures. Absence of transparency and accountability of Dhaka city's urban government, led to corruption which in turn, led to severe outcomes as higher crime rates and building disasters.

Factory buildings were converted from common/residential structures at the inception of the RMG industry. Being a budding industry and a genre which the people of Dhaka were unfamiliar with, it had no formally designed factories. Vertical structures, multi-storied houses, built for a different function, were rented or leased out as factories for desperate and ambitious business people (Adil, 2019). At the point of inception of the RMG industry, factory buildings were converted from common/residential buildings. The conversion of these structures lacked "safety and production planning", which has been explained as a maintenance strategy that aims at strengthening safety efficiency through the allocation of human resources, goods, and services. Production planning includes an overview of all factors of production to guarantee smooth operation towards reaching specific manufacturing targets (Biswas & Baral, 2021). As a consequence, numerous buildings collapsed or experienced mishaps that cost thousands of lives. With the booming economy, increased fires and building collapses occurred all too frequently in the multibillion-dollar RMG industry where regulations were and still are lax and chemicals are commonly carelessly handled (Chowdhury et al., 2015).

Dhaka, which is home to most of the nation's factories, has struggled with safety issues—not just social and environmental but also those that threaten the built environment. Dhaka's built environment developed much faster than ever since its independence. The allure of rapid economic growth along with

the need to provide employment and shelter to the large number of incoming migrants, led to corruption and negligence—negligence of quality, ethics, principles and most importantly, “safety”. As the line between ethical and unethical is indistinct and prone to manipulation, misconduct is considered to be a part of social construction in a developing city (Palmer, 2012). Under the circumstances, it is challenging to identify those responsible and penalisations for misdeeds may be investigated by external audiences—groups of actors who may attempt to make sense of the outcomes. Such external evaluations often tend to be associated with negativity such as reputational penalisation and damaged global image (Coombs, 2007).

In 2013, Dhaka ranked second among the “least liveable” cities but ironically it stood seventh among the “10 Happiest Cities on Earth” the same year (Gates, 2013). On the 24th of April, that very year, the city witnessed its worst building disaster, the Rana Plaza collapse. Rana Plaza was an eight-storied commercial building comprising clothing factories which employed more than 5,000 workers, a bank, apartments, and several shops. The search for the dead came to an end on 13 May 2013 with a death toll of 1,134. Approximately 2,500 victims were rescued from the building alive (Rahman & Yadlapalli, 2015). It is deemed the deadliest structural failure accident in contemporary human history and the most fatal garment factory disaster ever experienced. The period after the Tazreen Fire Incident was the most testing for the garment manufacturing sector of Bangladesh. It drew massive global attention, created unrest among the workers and threatened to destroy the achievements made throughout the previous decades. The Rana Plaza incident was an unexpected occurrence that provoked potentially severe consequences and may therefore be described as the black swan event. It compelled the industry to reform regulations and ameliorate overall work conditions.

Dhaka had already been developing in a haphazard manner, intensifying its risks during natural disasters and other hazards. A survey showed that about 78,000 buildings among 326,000 in the capital have been recognised as being susceptible to earthquakes (Ahmed & Morita, 2018). Therefore, it is

urgently needed for the city to identify ways of complying effectively with regulations and laws.

2.10 Chapter Conclusion

Although for Dhaka, several plans had been launched over almost a century under various governing bodies, none had been executed. Its most recent structure plan by RAJUK (DSP 2016-2035) is extensively in relation with the immediate previous structure plan, established with little regard to the 1995 Dhaka Metropolitan Development Plan (DMDP); instead of revising it to employ future governance and policies it has criticised the existing DMDP (Mowla, 2016). Though the city's built environment comprises residential, commercial, and other types of structures, it is the industrial buildings that are primarily associated with the economy and international export-oriented trades and therefore, under global scrutiny. Global interest and investments in the RMG sector have transpired major shifts in Dhaka's built environment but RAJUK's DSP 2016-2035 lacks sufficient emphasis on the city's industrial structures and appears to be more aligned towards infrastructure and real estate developments (Mowla, 2016).

Chapter 3: Discussion of Sustainable Building Safety

This chapter presents a review of literature on safety of workplaces in built environments within a developing city that discusses complementary narratives that predate a few of the key studies within this field. It reviews investigations from areas of urban planning, building design and operation, workplace management and working conditions within factories. The literature is limited to safety within the built environment, specifically within garment factories. It deals primarily with the situation in factories in the developing world's megacities such as Dhaka. Safety concerns have been prevalent within cities for decades, however safety within the confines of concrete buildings tends to be overlooked or perhaps taken for granted. It is not often understood that for a building to be fully functional for the purposes it serves, safety must be ensured at numerous levels. Safety within buildings is to be sustained both through design and practice. This ultimately moulds a city's built environment and contributes to its overall sustainability.

The capital of the nation, Dhaka, is its financial and business heartland and one of the most rapidly developing centres in the world. Exports of clothing have added up to billions of dollars of income, leading to conversion of rural lands into built-up areas. More than 809 km² of cultivated or agricultural land have been transformed into cities, roads, and infrastructure (BBS, 2013). Dhaka's high economic growth has been accompanied by rapid urbanisation. The swift development of physical infrastructure such as buildings did not abide by the principles of sustainability and therefore became significant threats to the well-being and safety of its people. The rising demand to accommodate a population of over 20 million people with an average population density surpassing 40,000 people per square kilometre (IOM, 2022) initiated the rapid construction of various structures including semi-permanent and permanent squatter settlements, multi-storeyed buildings, and others with diverse purposes. This huge population, among numerous other factors, created disaster risks to the city's built environment and Dhaka's mostly vertical expansion. A vast number of the buildings were developed without following building regulations and codes, and are highly

vulnerable to hazards, making it pertinent to investigate building safety measures and disaster resilience (Abdullah et al., 2021).

Although Dhaka is located in a moderately earthquake prone zone, a medium level earthquake could result in the destruction of 78,000 of the 326,000 buildings in Dhaka alone, owing to unplanned urbanisation and unethical building practices that have neglected building codes (Ahmed et al., 2019). Apart from this possible and natural risk, the city's built environment is also highly vulnerable to human induced hazards. Innumerable chemical factories and warehouses situated within densely built residential vicinities, pose an acute risk of accidents from explosions and contamination (Jabeen, 2014). On the other hand, compromised quality of construction and non-compliance with building codes and regulations causes structural failures of buildings. Anecdotally, it is said that it will not even require an earthquake for buildings to collapse in Bangladesh (Ahmed & Kabir, 2021). Fire is another threat within Dhaka's built environment that prevails not just within industrial and commercial structures, but also residential. Between 2004 and 2018, almost 2,000 people lost their lives in approximately 200,000 fire incidents and the frequency is said to have tripled from that of the previous few decades (Tribune Desk, 2019).

As the scope of this research is limited to investigating only the workplaces within the RMG factories of Dhaka, the literature will focus on elaborating the concepts that relate to promoting sustainable safety within the built environment of workplaces. To do so, the following section will first discuss the aspects of sustainability and safety separately, and then their interdependency.

3.1 Concept of Sustainability

Both safety and sustainability promote conservation of resources. Sustainability, as depicted by some authors or researchers, primarily concerns preservation of environment, while safety considers the protection of people (Taubitz, 2010). They are also interlinked because of the type of culture they encourage in workplaces—one of cognisance and accountability. Both promote processes of continuous improvement and reinforcement of measures to make both small and big enhancements that add up to make a

significant difference (Lawton & Gabriunas, 2015). It is therefore crucial to develop a safety culture for any organisation, built environment, or city to be sustainable.

While discussion of sustainability is relatively new, the concept is rooted also in historical movements for social justice, conservationism, and internationalism. By the end of the twentieth century, several of these ideologies converged in the appeal for “sustainable development” (UN, 2018). In the UN Brundtland Commission report in which sustainability originated as a policy, it was described as development that meets contemporary needs without compromising the ability of future generations to fulfill their own needs (Brundtland Report, 1987). Society’s responsibility to ensure the quality of life of today’s generations is inherent in this definition. Sustainability, or “sustainable development”, has numerous definitions with varying perceptions and understanding. Simply put, the word itself can perhaps be stated as the process(es) through which something can remain at a steady level.

The Rio Earth Summit of 1992 defined sustainability as an approach that will precaution against environmental degradation and motivate balanced development, further refining it as a socially responsible phenomenon (<https://www.un.org/en/conferences/environment/rio1992>). Goncz et al. (2007) expressed the term as an equilibrium of economic stability, ecological compatibility, and society. The United Nations acknowledges sustainability not just as environmentalism but also as concern for social equity and economic progress (UN, 2005). The three dimensions encompassed in the concept of sustainability are social, economic, and environmental (Kuhlman & John, 2010). Franklin and Marshall (2012) elaborate on “sustainable actions” rather than sustainability itself, stating that these are actions which lead to enhancement of local and regional self-support, creation, and maintenance of community and culture through the preservation of each generation.

3.1.1 Global Focus on Sustainability

At present, the idea of sustainability is drawing considerable attention as several nations have incorporated it in their strategies for economic

development. According to the World Health Organisation (WHO), sustainable development relies on various principles, many of which are clearly applicable to occupational health and safety. They explain that these standards include being attentive towards people's health and quality of life, preventing identified risks and taking precautionary measures against unprecedented risks (UN SDG, 2016). So, it may be concluded that occupational health and safety (OHS) are to be considered as integral aspects of sustainability.

However, the issues classified as belonging within the social sphere of sustainability, such as OHS, labour rights, organisation of work, and safety of workers, are not as extensively discussed. Experts claim that OHS corresponds with the social responsibility component of sustainability (GRI, 2018). It has thus become a significant subject of concern for societies and industries, from financial, social, political, and environmental standpoints. As most organisations endeavour to achieve sustainability internally by creating workplace settings that are conducive to employee health and safety, establishing workplace safety culture has become a competitive issue for companies that intend to be sustainable. Although protection of workers' health and safety has been considered an obligation since the 1970s and the UN Brundtland Commission report of 1987 proclaimed sustainability a major issue, many enterprises are yet to realise the urgency for risk and hazard management in workplaces to promote workers' health and safety (Lee, 2020).

3.1.2 Sustainability within the Built Environment

Along with the natural environment, the human-made environment, also referred to as the "built environment", is a significant component of a city's overall potential for sustainability. Sustainability of the built environment is presently a topical subject, being based on an all-encompassing spectrum of interconnected attributes. Sustainability is a broad, complex theory that has developed to become an over-riding agenda for the building industry that involves enhancing quality of life through creating a healthy and safe environment (Akadiri et al., 2012). A sustainable built environment would mean utilising resources without unnecessary wastage and ensuring that no

future development would degrade or threaten the quality of the built environment (Morshed, 2006). The sustainable building approach is highly likely to make a noteworthy contribution to sustainable development. A major part of the built environment is comprised of workplaces, housing hundreds of workers or employees at once, especially in factories or such other structures. Global experts believe that the sustainable built environment is to be conceived with the integration of economic, social, and environmental factors. Long-term decisions should be undertaken with complete cognisance and involvement of all concerned owners, users, community members, and any others who are to be impacted by the development of a structure (Akadiri et al., 2012).

In this era, some researchers are identifying the relevance of, and links between, occupational safety, health, environment, and sustainable development. The following section elaborates how workplace safety within a risk-free built environment can assist in the pursuit of a sustainable future.

3.1.3 Sustainability in the Context of Building and Workplace

Sustainability is commonly spoken about in terms of businesses, trades, and industries today. Practitioners in the building industry have also recently begun taking responsibility for controlling and correcting its environmental impacts, through implementation of sustainability objectives at the design development phase of projects. For many professionals, the meaning of sustainability goes beyond single-minded concentration on environmental responsibilities to include social and economic outcomes (Isa et al., 2014). In doing so, new technologies like the Building Research Establishment Environmental Assessment Method (BREEAM), Building for Environmental and Economic Sustainability (BEES), and Leadership in Energy and Environmental Design (LEED) are being applied and updated to complement contemporary sustainability practices with the ambition of promoting human health and preserving the natural environment (Isa et al., 2014).

It is predicted that by 2056, global financial activity will be five times greater, and global manufacturing activity will have tripled (Acevedo & Robertson, 2012). According to the joint committee of the International Labour Organisation (ILO) and World Health Organization (WHO), Occupational

Health and Safety (OHS) must be targeted towards promoting and preserving the highest level of physical, mental, and social wellbeing of workforces in all occupations (Alli, 2008). The ILO also considers workplace security to be relevant to features of working life including safety and attributes of physical environment, workers' sense of their place of service, and their level of contentment regarding the organisation. The WHO also uses the expression "healthy workplace" to recognise occupational safety and health, describing it as a place where workers' safety, health, wellbeing, and the sustainability of workplace is ensured through steady improvement and participation of all occupants (Molamohamadi & Ismail, 2013). Their definition of workplace wellbeing entails confirming that workers are safe, healthy, content, and involved.

Although sustainability objectives are specified at the design stage, workplace health and safety are rarely highlighted in sustainability strategies until the time of a building's operation (Mattson, 2015). Integration of safety and health concerns into inventive and proactive policies could initiate a transformative opportunity to accomplish genuinely successful, sustainable organisations (Michaels & Henshaw, 2017). This means workplace organisations cannot be sustainable without protecting the health, welfare, and safety of their most crucial resource—workers. The approach would require leadership without compromise, as well as setting and attaining goals beyond regulatory compliance (ILO, 2016a). So, it follows that sustainability of a business establishment is dependent on safe and healthy workplaces, in its manufacturing and customer services areas (Carter & Rogers, 2008). The understanding and practice of OHS is no longer limited to workers' physical demands or exclusively related to exposures and diseases, but also now includes incident-focused strategies and safety (Hill & Seabrook, 2013). Regarding environment as the third OHS factor, BHP Billiton management defined OHS as the promotion of workers' health by providing a safe working environment for them where they can operate without being injured. Community—the fourth dimension—addresses ethical business policies, financial progress, and fundamental human rights (BHP Billiton, 2005).

Over the past two decades, the concept of sustainability has been widely embraced in many sectors and industries, from local to national authorities, as well as manufacturing and construction industries where production and safety planning is crucial for stable operation. It is being utilised as a framework in several countries to integrate strategies for enhancing the environment, economy and living conditions. The United Kingdom, for instance, included sustainability in its national policy in “Securing the Future—The UK Sustainable Development Strategy”. A significant number of companies including Nike, Coca Cola, Dell, and Starbucks are adopting sustainability as a strategy for materialising their approach towards Corporate Social Responsibility (CSR) (Kilbert et al., 2012). Sustainability has demonstrated its staying power over the past decades by being adopted as a shared vernacular rather than being limited to the vocabulary of experts.

The UN Sustainable Development Goals (SDGs) which were approved in September 2015, officially came into force on January 1, 2016, at the momentous UN Summit. Each goal elaborates specific targets that are to be attained over the next 15 years. It is a guide for governments, civil society, the private sector, and entities. As the targets are widely accepted and broadly applicable, organisations began to use the UN SDGs to underpin their sustainability efforts (UN SDG, 2016). Some of the SDGs are directly and indirectly connected to worker and labour issues. Goal 8, for example—Decent Work and Economic Growth—is about protection of labour rights and promotion of safe working environments for all workers, particularly female workers (UN SDG, 2016).

The workplace environment plays a fundamental role in promoting human health and wellbeing, simultaneously providing workers with valuable benefits such as income, dignity, experience, and the ability to overcome intellectual, educational, or physical challenges. It leads towards an individual's life being more productive and rewarding (Saha & Mazumder, 2015). Consequently, the sustainability of any business depends on the extent to which it provides a safe and healthy working environment; Pezzey (1992) stated that the sustainability of an organisation is expressed through strategies and actions it undertakes to meet the requirements of its current

suppliers and stakeholders, while safeguarding, sustaining, and enhancing the natural and human resources that will be essential for the future. For businesses organisations, sustainability embodies environmental, social, and economic influences. Environmental sustainability concerns the use of resources and the related impact on the biophysical environment, and social sustainability concerns health, safety, and the wellbeing of people in supply chains, and their effects on society (Huq et al., 2014). Effective supervision of occupational safety and health has a pivotal role in making a business successful.

Since Bangladesh's employment sector, economy, and overall progress, locally and globally, is immensely reliant its RMG sector, one of its biggest challenges is to ensure improved working conditions for the millions of workers who contribute significantly to the export market (Alam & Alias, 2018). Hence, the following section discusses safety and sustainability in terms of the country's RMG industry, particularly in the region of Dhaka.

3.2 The Concept of Safety

Physical safety is a precondition to wellbeing and for people to feel protected in buildings, systems that ensure building safety must be implemented across the entire built environment, including in work, leisure, and residential buildings (Ahmed et al., 2019). However, the prevalence of unsafe work conditions that lead to accidents is one of the most critical issues in industries worldwide. Such unsafe conditions continue to endanger factories or manufacturing buildings. Several industrial disasters had resulted in different initiatives being undertaken by affected countries with the objective of protecting human lives and minimising financial damage, both nationally and internationally. Safety has become a primary concern with increasing population and rapid industrialisation. According to the ILO, 317 million mishaps and more than 2.3 million deaths occur in places of service worldwide every year—inferior occupational safety practices contribute to an annual financial burden of 4% of global Gross Domestic Product (GDP) (ILO, 2019).

The RMG industry, being the most prominent, export-oriented business sector in Bangladesh, had been attempting to ensure workplace safety well

before the Rana Plaza collapse but the initiatives were firmly enforced only after the tragedy. This chapter elaborates the aspects of building safety in terms of workplaces that are to be considered. Ultimately, the challenge is to sustain the momentum already established towards attaining sustainability in the RMG sector and being compliant with regulations. However, to understand building safety, it is necessary to first comprehend what is meant by “built environment”.

3.3 The Concept of Urban Safety

Securing safety within cities, is often associated with maintaining law and order in a place. Safety within built forms, human made structures or workplace environments is perhaps “taken for granted” although the outcome of its negligence can be extreme and life-threatening. The United Nations (UN) defines a built environment as a safe living space for its occupants on the basis of certain factors (Rastyapina & Korosteleva, 2016), that include natural, social, architectural, urban, environmental and infrastructural (Chen et al., 2021). Therefore, urban progress and development need to be considered in terms of both ecological and urban safety. One prerequisite for achieving sustainable development in a city is the existence of urban safety, which does not refer only to personal security—it is defined on the basis of several factors. A safe environment will comply with contemporary standards of engineering and ecology without causing any negative influence on its people, buildings or services, or being the reason for any disaster whether natural or human-made (Rastyapina & Korosteleva, 2016). Urban safety of a habitat lies at the root of sustainable development. It is to be ensured within every layer of the built environment- public spaces, homes, and workplaces. Integration of safety within the built environment requires collaboration between government, industries, non-government organisations, communities and individuals and it is also to be implemented, maintained and supported by collaborative risk management and regulating bodies. An increasing demand for efficient and effective integration of safety and sustainability into urban planning and building design systems and incorporation of sustainability in all development and infrastructure undertakings, is felt in any rapidly growing urban area. In the case of

Bangladesh, the built environment in general and the industrial buildings in particular, call for special attention, because, as Yunus and Yamagata (2012) report, Bangladesh has had an unfortunate history of building tragedies such as garment factory fires and collapses since 2005.

Establishing safety and sustainability as a fundamental “design element” within the built environment, can eliminate many common risks and threats identified within small to major developments and even at the scale of megacities. The concept of building safety is linked with designers, clients, regulators and governance to overcome institutional inertia and ensure that authorities adapt strategies that position safety within built environment as a priority. Urban safety intertwines aspects involving urban and rural development (such as migration, poverty, industrialisation, and employment opportunities), consequent population inflow and growth, the expansion of a place in terms of built environment and overall sustainability of the city. The government is authorised to implement rules and enforce regulations to establish balanced development of a liveable city. These rules and regulations could be guided by “safety theories” for built environment that deal with practising and managing safe living and working conditions. Safety management requires the adoption of a balanced approach for the prevention of accidents and counteracting unsafe practices that could lead to injuries or fatalities.

3.3.1 Relevance of Urban Safety to the Built Environment

The notion of “built environment” is fairly recent. In plain language, it means human-made surroundings developed for human activity, which range from large-scale public surroundings to personal enclosures. It is generated from an assortment of practices and approaches that are concerned with acquiring a common framework for communication and expansion (Moffatt & Kohler, 2008). The built environment is the backdrop by which we lead our lives. It dominates our senses, emotions, activities, and general welfare. The built environment has also been defined as the outcome of design, branching from individual structures through built complexes and eventually to whole cities (Kent et al., 2011). However, a well-planned and functional structure may still be risky if it is not properly maintained (Resnik, 2012). A risky urban

built environment would consequently jeopardise its inhabitants' sense of security. Safety thus becomes a significant, decisive element for ensuring people's wellbeing within a built environment.

The term safety is often mentioned without a clear understanding of what it is or how it is to be achieved. It is often thought to be the inverse of risk. However, risk—undoubtedly the antonym of safety—captures the imperative dimensions of safety without providing a comprehensive understanding of the concept (Möller et al., 2006). The simplest description of safety is freedom from damage or danger (Balderson, 2016). As defined by Nas (2015), safety is the state of resisting hazards caused by natural forces or human errors randomly. An organisation's or individual's ability to manage risks and hazards to avoid harm or losses and yet accomplish their goals may also be defined as safety (Reason, 2000). Dekker (2019) expresses safety as the presence of aptitudes, expertise and competencies that make things go right; he further stipulates that safety and risk should be foci for resilience. Hollnagel (2014) describes safety as the situation where several initiatives are taken to thrive under changing conditions by ensuring progress in the right direction rather than preventing threats or risks. According to the ISO, the standard definition for safety in relation to humans, property or the environment is the “freedom from unacceptable risk”. Acceptable risk is considered to be “tolerable risk” or risk in a given perspective founded on contemporary values of society (Jones, 2019).

The common intent in all the mentioned definitions, is that “no one gets hurt”. Urban safety is a state or assessment of standard control over inherent hazards and risks of a built environment. It is the avoidance of accidents that may harm a person in a workplace within an urban area or practice by integrating approaches, accountability and decreasing vulnerabilities to the minimum to mitigate any potential risks (Balderson, 2016).

In summary, urban safety is an ethical practice and is to be developed into a safety culture where the occupants or users are not at risk. The concept of “safety culture” came into global use following a report by the International Atomic Energy Agency (IAEA) after the Chernobyl accident in 1991. It was eventually widely defined as an organisational environment in which health

and safety are to be acknowledged and accepted as being indispensable (IAEA, 2006). Presently, researchers link this concept more broadly to non-nuclear industries and connect it to the necessity for precautionary approaches to Occupational Health and Safety (OHS) and to human behavioural aspects of responsible OHS management (ILO, 2005). A safety culture generally indicates to the extent to which every individual in a group or organisation is aware of the risks and unspecified hazards caused by its operations, and persistently preserves and enhances urban safety. It also refers to willingness to address safety issues and consistently evaluates safety related conduct (Cooper, 2002). Thus, the identification of dangers and their corresponding control measures underpin safety culture and determine successful and safe working and living conditions within a city's built environment.

3.3.2 Safety in the Context of Building and Workplace

There is little disagreement that a built environment should be safe, with specified countermeasures to reduce the frequency of accidents. However, the built environment is not the only factor that must be considered to prevent incidents. There is a broader contribution through safety-related behaviour or culture (Stevenson, 2006).

A workplace can only be safe if the building it is housed in has been conceptualised, constructed, and maintained following the principle that everyone has a right to be sheltered from preventable injury or harm. An entire built environment can only be considered safe when each structure is established with provisions for eliminating living or occupational safety and health hazards from the planning from the planning and design phase. An irresponsibly designed building may contribute to manifold risks including loss of life, economic damage, low productivity, higher maintenance, and others (NIOSH & CDC, 2002). Worldwide, practitioners have been assigned the responsibility under safety and health legislation to eliminate or control vulnerabilities, while employers have "duty of care" and are obligated to ensure the well-being of their employees and that they are not endangered by any risks related to a structure or building which functions as their workplace (ASCC, 2008). Wider design objectives should always include

safety as an element along with aesthetics, cost, and functionality, and retain a balance without compromising the safety and health of the occupants.

3.4 Industrial Workplace and Sustainable Building Safety

American industrial safety pioneer, Herbert William Heinrich, is known as the Father of Safety. His book is claimed to be the foundation of safety practices for many in this field. His law is based on probability that assumes that the frequency of incidents is inversely proportional to the severity of the mishaps (AIHA, 2020). Heinrich, in his book *Industrial Accident Prevention* (1931), expressed his belief in behaviour-based safety practices and concluded that as many as 95% of all workplace accidents are the outcome of human errors generating from negligence or irresponsibility of employers or factory owners. He came to such conclusions through studying thousands of reports of calamities where the general blame had been on workers without in-depth investigation of the root causes. He reasoned that workplace accidents were the result of “man-failure” and urged employers to regulate hazard-causing risks instead of merely holding the workers responsible. He stated that regardless of how formidably the statistical evidence emphasises personal errors or how definitively the need for educational awareness is shown, no safety practice that fails to correct or eradicate physical hazards is acceptable (Heinrich, 1931).

Moreover, safety and production planning, if practised as a form of duty of care within industrial buildings, can extensively control issues, maintain quality, create interconnectedness with all departments, and promote punctuality to meet rigid production targets with the best available resources (Biswas & Baral, 2021). Other researchers have also acknowledged the significance of safety interventions for ensuring workplace safety and minimising injury rates (Cohen et al., 2017). A safe working environment is believed to attract and retain quality employees and is an asset to a business community that functions more proficiently and raises employee’s morale (Ahmed et al., 2020).

Safety management, broadly perceived, and sustainable safety play a vital part in safeguarding workers and reducing both monetary and human losses. Recognising the significance of safety assists in developing a safety culture

that comprises a firm's philosophy and operational practices intended to reduce risks (Lee, 2018). The creation of safe workplace environments demands partnership between government and non-government organisations, industries, and communities, along with agencies and institutions. Safety within workplaces impacts performance and efficiency, which eventually affects sustainable management activities. Organisations cannot be sustainable themselves without defending the health, welfare, and safety of their most imperative resource—workers (Cooper, 1998).

3.4.1 Sustainable Building Safety in the Context of RMG

In the past, sustainable development primarily addressed environmental, social, and economic issues. Sustainable development is acknowledged and characterised by three integrated dimensions, also known as the sustainability pillars—the environment (planet), society (people), and economy (income). Human beings are a focus of concern for sustainable progress and are entitled to risk-free and productive lives in harmony with nature (Molamohamadi & Ismail, 2014). Sustainability has frequently been explained as a balance of social, ecological, and economic objectives. This perspective implies that industries are required to sustain and encourage growth, corporate image and achieve sustainability. Managing economic, environmental, and social issues in isolation would result in unanticipated consequences and it has been argued that a systematic method with connecting interactions between the three pillars of sustainability is required to ensure a sustainable future (Rachuri et al., 2009). Therefore, OHS within a standard work environment should embrace two main, distinguishable objectives: i) protecting employees' physical and mental health by protecting them from work-related accidents, injuries, and diseases through safe workplaces and ii) avoiding harm to nature (Molamohamadi & Ismail, 2014). Moreover, the SDG targets #3, #8 and #16, which are related to health and safety, highlight the need to provide safe working conditions in an industry to achieve sustainability. They also have a crucial impact on the holistic sustainability of a city. The ILO has established that decent work environments are required in order to attain sustainable development (ILO, 2019c).

Over 4.5 million workers currently work in the garment sector of Bangladesh, 89% of whom have migrated from other districts to factory locations. The highest educational attainment of these workers is either junior or primary schooling (Haque & Bari, 2021). Poor working conditions within the garment manufacturing factories of Bangladesh have long been of concern, with ad hoc establishment at the start of development being the root cause of problems. Some rented factories—in which industrial building standards tend to be difficult to attain—have been observed to be overcrowded with

occupants and heavy machinery (Chowdhury & Tanim, 2016). Poor health and safety hazards continue to pose threats within workplaces. Dhaka lacks competent operating infrastructure, and notably, unified safety and compliance standards have been absent. The experts involved in this industry argue that cohesive parameters of compliant behaviour would enable these manufacturing factories to be monitored more efficiently and enhance their prospect to sustain (BrandZeal, 2013).

The prime attraction for foreign stakeholders is inexpensive manufacturing costs which many of these suppliers offer to attract buyers while avoiding safety issues, depriving the workers, and increasing their vulnerability in unsafe working conditions. However, investment in human resources, through training, upgrading working conditions, maintenance of health and safety measures, and protecting the rights and welfare of working employees will encourage productivity (Bhuiyan & Dash, 2019). For multinational companies, this is also a form of Corporate Social Responsibility (Hasan & Habib, 2016). Most factories observe OHS in response to pressure from buyers rather than to sustain the industry. In many cases, factories ignore basic building safety issues; workers have limited knowledge about OHS; and/or the policy is not prioritised by factory authorities or regulators. Negligence of OHS often leads to fire hazards in factories—the Fire Risk Index (FRI) indicates that fire regulation standards in this industry are below an acceptable level (Sejan, 2018).

Undoubtedly, the garments sector of Bangladesh is considered to be one of the riskiest working environments among the apparel manufacturing countries. Although building collapse is as life threatening and dangerous as fire incidents in Bangladeshi garment factories, it does not occur as frequently. The country is yet to permanently resolve the prevalent risks within RMG workplaces and incorporate clear and comprehensive CSR related to safety and sustainability (Hasan & Mahmud, 2017).

3.5 Chapter Conclusion

Decades ago, the WHO identified safe workplaces and healthy workers as preconditions for productivity, social and economic progress, and sustainable development (Ahmed et al., 2021). Planning for the future must be combined

with respecting people's health and safety. Companies should adhere to global working standards and protect the health, safety, and security of workers (Deloitte, 2019).

In summary, OHS, environmental, and sustainability policies and measures are interdependent, and embracing one demands that the others are implemented as well (Molamohamadi & Ismail, 2014). The marriage between safety and sustainability that is being referred to as "sustainable safety" in this thesis, could empower the RMG sector even more and enhance its scope for survival in the future.

Chapter 4: Regulations within Dhaka's RMG Sector- Roles and Responsibilities of Actors

The RMG industry possesses a unique stature in Bangladesh, not only due to its contribution to the economy but also to its contribution to generating employment, reducing poverty, and empowering women. Its phenomenal growth has been unparalleled since it seized the opportunities for an insulated market offered by the provisions of the Multifibre Arrangement (MFA). This resulted in a triumph for the government in earning foreign exchange. It boosted exports and stimulated further industrialisation which contributed immensely to the country's GDP (Alam et al., 2018). Over the past decades, the number of factories has grown significantly and rapidly. While until the mid-1990s there were less than 2,000 RMG factory buildings, by 2010 there were over 3,600. The number of buildings increased at a slower rate after the Rana Plaza incident in 2013. Currently, there are over 5,000 factory buildings. Not surprisingly, the risks and challenges surrounding this expansion have simultaneously intensified. With the occurrence of some major disasters there has been intense debate focusing on the state of safety regulations and compliance in these factories (Mia & Akter, 2019).

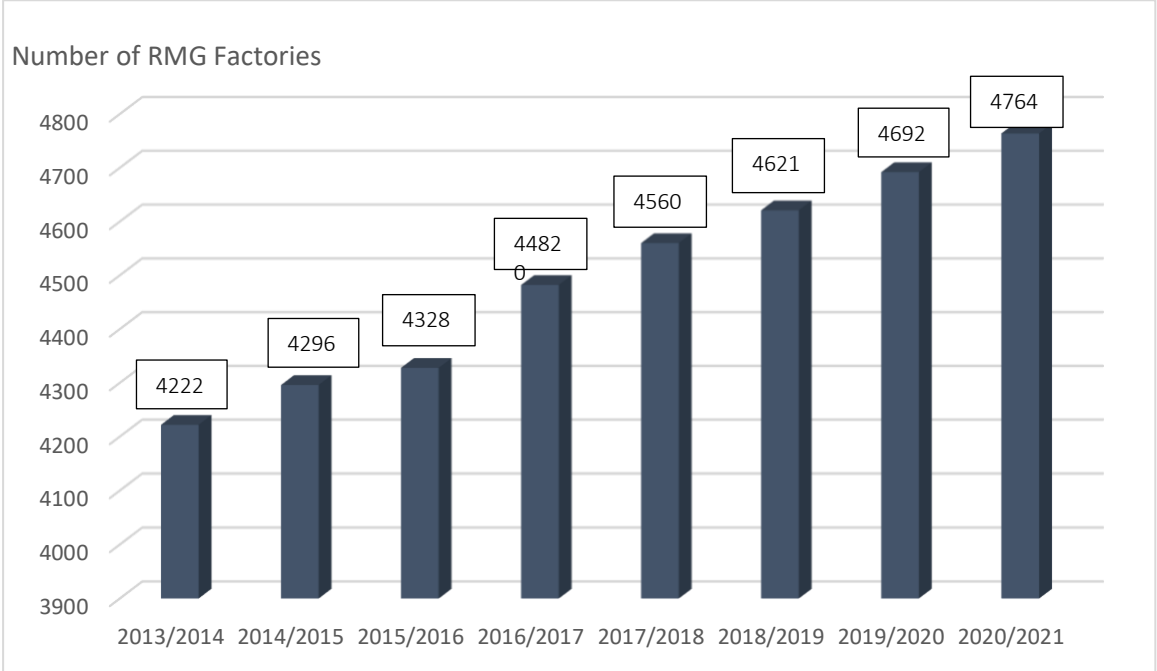
Maintaining the safety and productivity of the RMG sector is not only a concern for owners of RMG factories but also for the Government of Bangladesh. The RMG sector has given the nation's economy a strong foundation, created employment for millions, reduced poverty and enhanced overall quality of life for many. Relevant government agencies and institutions create a regulatory regime wherein all main stakeholders and actors including factory owners and administrators, professionals, and practitioners work to protect the interests of this sector.

Sustained safety is built upon basic values and principles that are shared within the society through education and a commitment to ethical practices. Rahman and Siddiqui (2015) observe that practitioners, planners, architects, developers, engineers, and others have realised in recent years that they are subject to development principles and policies that promote national and international standards of safety. In terms of the RMG sector, it is part of the

global supply chain network comprised of transnational multi-actors who advocate their multi-faceted approaches to safety standards. These include local regulation, international agreements, and private governance initiatives (Vogel, 2008). Yet execution of such safety principles may be overlooked for a wide range of reasons such as lack of accountability for practitioners or owners, employers' preference for economic feasibility, and complexity of development processes.

Figure 4.1

Increase in the Number of RMG Factories



Note. Source: BGMEA, 2021.

This chapter discusses existing regulations governing the RMG workplaces within Dhaka's built environment and the roles played by relevant institutions and primary actors in shaping the RMG factories- from the design and construction of the buildings to their safety and production planning, operation and maintenance. Focusing on the main actors responsible for implementing and regulating safety aspects within the RMG industry, it

defines their roles, responsibilities and considerations towards promoting and sustaining safety within the city's built environment.

4.1 Regulations relating to RMG Factory Buildings and Government Policies

Although the garment manufacturing industry is global, many argue that the accountability for incidents such as the Rana Plaza building collapse should primarily be apportioned to the ineptitude of local governance and prevalent corruption, simply for allowing the illegal construction and operation of the factory in the first place (Rahim, 2016). Factory workers should never have to weigh their livelihood against jeopardising their safety. Given that the RMG sector had been under scrutiny for a series of building incidents since 2005, if the management of Rana Plaza had already embraced the processes of social responsibility and abided by the ethos of monitoring their workplace accurately, this tragic outcome could have been prevented (Arengo, 2019). Immediately after the tragedy, numerous global standards emerged to improve worker's welfare and reduce complexity within the processes of exporting ready-made garments. However, the degree of commitment of the other stakeholders within this industry is also pertinent to this disaster along with that of government authorities, regulators, and agencies (Miller & Hohenegger, 2017). Perhaps if all agencies playing the monitoring role had performed responding to duty of care, the organisations within the Rana Plaza building would have been less likely to be negligent towards their duties regarding worker safety. This is apparently also true for the most devastating fire cases in RMG supply chain network of other developing countries (Megersa, 2019).

Safety within the RMG industry in Bangladesh is still in its nascent phase of development. There is still a glaring disparity between goals and commitments, practice, and results in social responsibility governance. There is an overall lack of framework and institutional readiness in relation to OHS, the supply chain network of garment manufacture and export, workplace and building safety, and environmental awareness. These activities are yet to be integrated into most industrial spheres (Nolan, 2021). Safety within garment factories centres around all compliance-related concerns covering both

physical structures and the processes carried out within, which are founded on principles of appropriate institutional setup and good governance (ILO, 2020a).

Most of Bangladesh's regulations originated from the laws under the British rule. In spite of major upheavals occurring between 1947 and the 1971 partition, expulsion of the British, and independence of Bangladesh from Pakistan that transformed the country politically, socially, culturally and religiously, the reliance on British laws has not been relinquished (Ahmed & Parvin, 2015). Bangladesh has been abiding by labour laws that were enacted during the British colonial period and the Pakistan rule long after its independence. Meanwhile, there are 67 laws related to hazards, all of which are still waiting to be reviewed prior to their implementation (ILO, 2020b).

This section discusses the regulations governing the RMG industry of greater Dhaka, categorising them into two broad groups: i) governance and ii) institutions. The former will focus on the operational regulations or processes that are used as tools for controlling and monitoring this industry, while the latter will identify and describe some of the most prominent organisations that are concerned with Dhaka's garment manufacturing sector.

4.2 Existing Policies/Regulations

With the advent of global production networks, ensuring the safety and welfare of workers in the workplace and service has become a global concern, especially in export-based industries. Most industrialised countries, like the UK and the USA, have legislated their labour laws with emphasis on production planning providing the utmost safety, security, and welfare of workers (Ahmed & Parvin, 2015). Being an outcome of globalisation, the RMG industry of Bangladesh functions with the aid of both local and global governance systems that have been applied at different stages to meet certain requirements. However, whereas most developed countries amend their labour laws over time according to the changing circumstances, Bangladesh methodised its labour law in 2006, substituting as many as 50 regulations of the British colonial regime (pre-1947) and the Pakistan era (pre-1971) (Fahim 2020).

Although there is a plethora of regulations, the following section will describe some of those most relevant to the scope of this study. It looks at policies that apply to the workplaces within the garment manufacturing and exporting industry of the country. These policies could be further categorised as: i) policies for regulating building structures and operation of factories ii) policies for regulating workers' rights and welfare.

4.2.1 Policies for Regulating Building Structures and Operation

The aim of local governance is to ensure steady economic growth and maintain social equity. According to Biswas et al. (2001), effective governance has eight main characteristics—it is participatory, consensus oriented, accountable, transparent, receptive, operative, inclusive, and obeys the rule of law. In the context of the RMG sector, good governance is concerned with balancing the relationship between government and the RMG industry, aiming at national economic development and facilitating the coordination between RMG organisations and its stakeholders who target profit maximisation. Below are a few such local regimes, laws or regulations that have been developed or introduced to support and regulate the RMG industry, their workplaces, working conditions and overall built environment of the city of Dhaka.

Bangladesh National Building Codes (BNBC): Any new residential, commercial, or industrial building established in Bangladesh is required to follow the Bangladesh National Building Code (BNBC), which has a strong focus towards minimizing fire risks within buildings to an acceptable limit (Wadud et al., 2013). The BNBC is the national code that is to be complied with when establishing or constructing any building structure in the country. It was first published in 1993 to regulate construction of buildings and maintain certain standards (BNBC, 2020). Before the establishment of these codes, the only law pertinent to construction of buildings was the Building Construction Act that had been enacted in 1952 during the Pakistan rule (Shafi, 2010a). The need for the BNBC was realised during the sudden growth and rapid development that occurred in the country, leading to the enormous boom in real estate in the early 1990s and further amendments made in 2017 to make the codes more relevant to the real estate sector

(BNBC, 2020). Initially drafted in 1993 by the Housing and Building Research Institute of Bangladesh, the BNBC was established 13 years later under the authority of the Building Construction Act 1952 (Parvin et al., 2013). The two objectives of the BNBC are to provide a safe and healthy built environment by regulating building planning, design, and construction and to facilitate a balanced practice in the building and construction industry that includes sanitary, plumbing, electrical and mechanical facilities. Simultaneously, it covers planning administration and enforcement, building controls and regulations in general, fire protection, materials, occupancy, density, and building height (Shafi, 2010b). Although the approval for industrial buildings is the task of RAJUK or city corporations, they are to be planned, designed, and constructed according to the BNBC. For factories, the codes have strict rules under the “Fire Drill and Evacuation Procedure”, mandating that every building must have an emergency evacuation protocol, firefighting plan, and training and obligations for occupants (BNBC, 2020).

The BNBC also specifically instructs owners of properties which are under construction to abide by the codes with regards to citizens, government departments, and developers (BNBC, 2006). Additionally, practitioners including architects, engineers and planners must be compliant with the codes in their individual practices. Four chapters in the previous edition of the BNBC were dedicated to workers’ health, safety, and welfare and the responsibilities of the employers relating to these aspects of workplaces. The code has been further enhanced in the latest review taking into account the regulations set by RAJUK (Ahmed & Parvin, 2015). It has detailed provisions for building safety that include establishment of industrial or manufacturing structures. The code also mandates that multi-storeyed structures are to be equipped with sprinklers and hydrants along with heat, smoke and flame detectors and requires the Fire Service and Civil Defence (FSCD) to monitor the sprinklers that are to be installed every ten feet (Samad, 2021). In some cases, deficiencies in fire safety designs and precautions may be prevalent within buildings owing to irregular inspections (Wadud et al., 2013).

National Tripartite Plan of Action on Fire Safety and Structural Integrity (NTPA): Formulated in 2013, as a reaction to the Tazreen and Rana Plaza

incidents, this plan sought to address the underlying shortcomings in rules and regulations and institutional competence, OHS and broader issues related to safer working conditions in industrial settings (ILO, 2020d). The Centre for Policy Dialogue (CPD) conducted a participatory evaluation to examine the level of “institutionalisation” of all liabilities and activities under the agreement (CPD, 2014). The review identifies areas for further development and the refined safety measures to be considered. NTPA reviewed a) legislation and policy b) administration c) industrial safety d) worker rehabilitation and insurance on injury. Along with the ILO, the country’s multi-donor RMG cluster comprising Better Work Bangladesh, RMG Program, Social Dialogue and Industrial Relations, the Sustainability Compact, and the Employment Injury Insurance Project undertook this contextual analysis (ILO, 2019). On the basis of this review, the NTPA proposed a Plan of Action (PoA) on industrial workplace safety in the country. It emphasised the requirement for a multi-sectoral method refocusing on initiatives in industrial safety, taking the principled practices of RMGs into account (ILO Policy Brief, 2020). Within the context of the NTPA on Fire Safety, several steps for the project Improving Fire and General Building Safety in Bangladesh, were taken (Reynaud, 2018). This government initiative, assisted and coordinated by the ILO, inspected over 1,500 factory workplaces that were not under the Accord or the Alliance. However, the feedback of the inspections is not available to public (Duval et al., 2018). With the completion of factory inspections in December 2015, where the need for remediation was indicated, factory owners would modify and correct their factories according to the findings of the inspections and a Remediation Coordination Cell (RCC) would confirm the completion of this work under the National Initiative (ILO, 2017).

Fire Prevention and Extinction Rules 2014: The Fire Prevention and Extinction Rules 2014 have been deferred and are yet to be revised following objections from various stakeholders including RMG factory owners of Bangladesh (Uddin, 2021). Nine years after the enactment of the Fire Prevention and Protection Act 2003, the local government formulated this rule and issued gazette notification in 2014. Three months later, the Home

Ministry announced its postponement after the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) and the Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA) expressed their reservations about the regulations to the Ministry and Bangladesh Fire Service and Civil Defence (BFSCD) (Wadud, 2017). Apparently, RMG factory owners resisted some clauses related to occupancy certification, license fee, installation of fire extinguishers, fire-fighting equipment, detectors, and other matters. BGMEA demanded that 13 sections of the draft rules be amended saying that they were not relevant for RMG factory buildings (RMG Bangladesh, 2018). One rule is that the owner of a building is required to obtain an occupancy certificate after completion of its construction, establish emergency exits with fire alarms and have indicator signs for escaping from the building. It forbids operation of any multi-storied industrial or commercial enclosure without the certification of the Fire Service and Civil Defence (FSCD) regarding fire precautions, extinguishing and other relevant aspects of fire safety issues. Contravention could lead to three years' imprisonment or a fine (BILS, 2015). The rules specify that no structural design or layout of multi-storied buildings is to be approved without the authorisation of the FSCD, and every owner is obligated to undertake measures for public safety. Although all building owners acquire the license prior to approving their plan for construction, there is no monitoring authority to observe implementation of relevant specifications (Hyder, 2017).

Bangladesh Fire Services and Civil Defence (BFSCD) Regulations: The regulations introduced by this department are targeted towards making positive changes for the creation of safer workplaces within industrial and commercial buildings and overall sectors. The Fire Safety Plan was a part of formulating this target (Hoque, 2019). The Fire Safety Plan is a document intended to be used as a guide for building/factory owners and management to be compliant with BNBC, NTPA, and BFSCD codes (ILO, 2017a). The plan also customises information to reflect individual properties and their existing fire protection procedures and fire risks. It obliges owners to renew or obtain new licenses for factories or other commercial/industrial structures (Ahmed & Kabir, 2021). According to these regulations, RMG factories must

acquire an operational certificate from the BFSCD authority, which is to be renewed every month by zonal officials. The officers are to examine a total of 61 parameters of which 41 are structural (Hossain, 2016).

Bangladesh Labour Act (BLA) 2006: Prior to the BLA 2006, the directive relating to workers' health and safety was included in the Factories Act 1965 and the Factories Rules 1979 (Morshed, 2007). The BLA Act is the primary legislation for the health and safety of the country's workers. It is the nation's most significant labour legislation which was welcomed as a landmark accomplishment for factory workers. Drafting of the legislation began in 1992 but it was not finalised until 2006 (Hossain, 2013). After almost three decades of independence, Bangladesh extended the applicability of labour rights nationwide, bringing together 25 separate other acts and ordinances. Various stakeholders contributed to the development of this legislation, including the UN, ILO, workers' right groups and human rights committees (ILO, 2006).

The BLA imposes obligations upon owners, employers, and managers towards their workforce within industrial and commercial premises. The scope of this Act covers legal protection of factories and establishments including construction sites, shops, restaurants, and others. Its perspective on "corporate killing" or any type of injury of workers is the same as that of the Health and Safety at Work Act (HSWA) 1974 that holds the employers liable for any accidents occurring at workplace (Ahmed & Parvin, 2015). The Act includes instructions about providing and maintaining safety within buildings with effective protection from fire and machinery hazards (BLA, 2006). It authorises building inspectors to restrict use of any building or establishment that may appear to be threatening or risky to human life or safety (BEF, 2009). Although often neglected or overlooked, according to the Act all exit doors should remain unlocked during working hours or operation, with unobstructed stairs, passages and corridors that may be used during any emergency. Some of the other provisions of the Act for workers' rights and welfare are discussed later.

Corrective Action Plan (CAP): This governs corrective procedures that are to be followed after reports are shared with owners whose factories have

been inspected (DIFE, 2015). On the basis of the report of safety shortfalls, the factory managers or owners are required to develop a time-constrained corrective plan in conjunction with technical guidance from professionals. This must contain a thorough strategy for remedial actions conforming to the identified non-compliant issues during inspections (RCC, 2018). It is to be submitted to the respective authority with a clear timeline for implementation, alongside a financial plan prioritizing the most urgent non-compliant concerns. It is then reviewed and approved (ILO, 2017b). There are, however, several obstacles to implementing a CAP. First, the factories in Bangladesh are said to have limited access to funds without buyers' assurance of sponsoring. When factories turn to banks for loans, they are asked for buyers guarantees which the buyers often do not provide (Dey & Basak, 2016). Secondly, structural corrections or remediation are time-consuming, and it is difficult to continue operations while retrofitting. The other option is to close the factory for the period of work, but this can have an unmanageable impact on earnings and the ability to meet buyers' deadlines (Honey, 2019). Under these circumstances, the owners may often look for ways to escape corrective processes.

4.2.2 Policies for Workers' Rights and Welfare

Being under the aegis of the United Nations, Bangladesh is compelled to sustain workers' rights through a range of international human rights legislation, chiefly the Universal Declaration of Human Rights (UDHR), the International Covenant on Economic, Social and Cultural Rights (ICESR), and the International Covenant on Civil and Political Rights that grant labour force with financial, social, cultural, civil, and political rights (Alamgir et al., 2013). The Convention on the Rights of Child (CRC) and Elimination of All Forms of Discrimination against Women (CEDAW) also work on the basis of safeguarding of workers' rights, focusing particularly on youngsters and women (UN, 2021).

Numerous labour standards related to export-oriented industries and their workers have been developed because of the nation's persistent push for integration into the global economy, specifically to capitalise on the Generalised System of Preference (GSP) in the markets of developed, first

world countries. This provides motivation for maintaining workplace safety. For instance, the US-GSP specifies appropriate working conditions along with minimum wages, service hours, and OHS as conditions for preferential tax-free entry into the US market (Alamgir et al., 2013). The following section discusses a few of the many such significant policies, based on their relevance to the programmes or plans introduced to encourage safety within RMG industries in Dhaka.

Bangladesh Labour Act (BLA) 2006: This Act, revised twice in 2013 and 2018, is intended to amend and consolidate regulations concerning worker employment, employer-worker relations, rates of wages and their payments, compensation for accidents during work, organisation of trade unions, resolving workplace/industrial disputes, health, safety, welfare, working conditions and apprenticeship of workers. The amended Act is aimed at strengthening the provision of collective negotiating and assuring safety at workplaces in the garment manufacturing industries. It excludes any previous obligation on the government organisation concerned to name the union leaders to the proprietors when a union is registered (ILO, 2020e). The BLA encompasses three main areas based on occupational health and safety policies- occupational mishaps, hazards and diseases and safety practices. It places emphasis on notifying workers on any operation that may be risky or hazardous (Hossain et al., 2015). Encouraging the process of digitalisation, DIFE with support from ILO introduced the Labour Inspection Management Application (LIMA) directed towards making the factory licensing procedure easier. The purpose of this system is also to function as a digital database of safety issues in agencies across multiple sectors (DIFE, 2019). The Act states that every organisation should be provided with firefighting tools and one alternative fire escape. An inspector is entitled to provide a written order to the owner if such fire exits are not present. All doors and exits to be used to escape from fire must remain unlocked with clear access to each means of escape according to the law (Hossain & Arefin, 2015). However, a number of specifications in the BLA such as the provision of freedom of association, collective negotiation and occupational safety and health are not applicable to the workers in the EPZs. They are regulated by the EPZ Workers

Association and Industrial Relations Act 2010 (EWAIRA 2010) (Wahab, 2018).

Bangladesh Labour Rules 2015 (BLR 2015): Since the country's independence, the BLA 2006 was a comprehensive set of regulations relating to industries. However, companies discovered its limitations, so the law was amended by the Bangladesh Government in 2013 (MoLE, 2021). The amendment was in line with the conventions of the ILO but lacked updated procedural guidelines. In response, the Government ratified the Bangladesh Labour Rule in 2009. In September 2015, two years after the Rana Plaza incident, the Bangladesh Labour Rule 2015 (BLR 2015) was gazetted with reformed regulation guidelines including safety regimes to regulate the country's industrial sector. The key points of the rules are provision of organograms within the industry covering wages, health and fire safety, approval of factory plans and any extensions (Amin, 1998) that account for labour rights and management procedures which are to be followed for ensuring safe workplaces.

Occupational Health and Safety (OHS): OHS in Bangladesh is a policy that stipulates that safe and healthy workplaces are a right for any labourer, worker, or employee, and that these should not only be intended to improve productivity but also employees' ability to sustain themselves in the industry (Wahab, 2018). OHS policy has already been adopted nationally and provisions for penalties for failure to be compliant with standards have been implemented. The primary laws connected with OHS in Bangladesh are the Factory Act 1965, Factory Rule 1979, Bangladesh Labour Act 2006 and amended act of 2013 and OHS policy 2013. These regulations recommend occupational hygiene, diseases caused at workplaces, industrial mishaps, protection of female workers and children and compensation. These laws are often criticised for being too generalised in nature and lacking specifications (Masum, 2016). According to this policy, the top tier of management is required to strive continuously towards workplace health and safety, prevent injuries and infirmity and obey all legal regulations (DIFE, 2015).

While the present national regulatory framework on OHS refers to the workforce of industries, it does not cover all employment. The primary

conditions mentioned in this policy relate to workplace accidents, hazards, and illnesses. It provides precautionary preventative guidelines, regulations, safeguards against workplace hazards and diseases, documentation, planning, rehabilitation, and awareness building (DIFE, 2016). The most significant laws linked to OHS are the ones mentioned in the Bangladesh Labour Act 2006, but owing to inconsistent implementation of regulations regarding OHS, working conditions within industries leave workers vulnerable (Sejan, 2018).

Corporate Social Responsibility (CSR): Globalisation of the country's economy has preceded self-regulation of export-based companies. There was an increased demand for Corporate Social Responsibility after the catastrophic fire incident at Tazreen Fashion Factory in 2012. In both developing and developed countries the corporate sector was and is expected to modify modes of response to crisis situations. Globalisation demands safe working conditions and responsible behaviour by the employers to improve workplace safety and health, both domestically and worldwide (Alamgir et al., 2013).

Corporate Social Responsibility is a principle promoting a form of global private business self-regulation that intends to contribute to societal goals. According to Sheehy (2015), it is divided into four categories: Philanthropic Responsibility, Environmental Responsibility, Economic Responsibility, and Ethical Responsibility. In 1985, the UN adopted some elementary CSR procedures that were implemented in the 1990s because of apprehensions of buyers concerning working conditions particularly in underdeveloped and developing countries (Bristi et al., 2020). Although CSR could once be described as an internal organisational guideline or corporate ethic, national and international laws have been reformed to push it beyond individual or industry-based initiatives (Haque & Azmat, 2015). The concept states that organisations are required to incorporate regulations into safety and production planning to improve their sustainability performances, including voluntary legislation and control strategies. The lack of CSR could simply be referred to as Corporate Social Irresponsibility (CSI) (Akter et al., 2021) or negligence.

Following the Rana Plaza incident, Bangladesh was closely scrutinised by nongovernmental organisations (NGOs) and CSR stakeholders regarding its compliance standards (Newman et al., 2020). The implementation of CSR practices can potentially have immensely beneficial influence on the economic, social, and environmental development of a city like Dhaka. Mausumi (2018), however, maintains that while the Bangladeshi RMG sector must embrace transparent and improved management strategies to achieve CSR goals, crucial challenges that obstruct sustainable environment within the RMG sector are also related to CSR.

The Compact: As an aftermath of the tragic Rana Plaza incident in 2013, the European Union, the United States, the ILO, and the Government of Bangladesh agreed upon the “Compact for Continuous Improvements in Labour Rights and Factory Safety in the Ready-Made Garment and Knitwear Industry in Bangladesh” (the Sustainability Compact), which the Government of Canada joined in 2016 (Vogt, 2017). It aims to sustain reform on labour rights and factory safety in the RMG and knitwear industries of Bangladesh and is actively involved in addressing labour health and safety issues, motivating responsible business methods by all stakeholders (Barua & Ansary, 2016). The Compact required Bangladesh to amend the BLA 2006 that was revised in 2013 with a total of 29 undertakings (ILO, 2013a). It is founded on three short and long-term commitments: i) respect for labour rights; ii) structural integrity of buildings and OHS; and iii) responsible business supervision. There is no deadline for the Compact as it is considered to be a constant process of engagement between the partners (ILO, 2019a).

The Decent Work Country Programme: The Decent Work Country Programme in Bangladesh was established in close association with ILO’s National Tripartite Plan of Action constituents—the Government, Bangladesh Employers’ Federation and National Coordination Committee for Workers Education—focusing on outcomes of national policy documents and SDGs initiatives (ILO, 2017c). It had been implemented for the period 2017–2020, emphasizing four priorities and outcomes: i) effective employment governance to augment employability through skill development including

“green growth” (a path of economic development which is eco-friendly); ii) promotion of healthy and safe working environments for all workers, compliant with global labour principles; iii) advancement of fundamental principles and rights at workplaces through social interaction and tripartism; and iv) enhancement of communal protection for all workers and others at risk, including the risks associated with climate change (ILO, 2019b). The concept of “social protection” refers to workers’ safety, occupational health, and economic stability (Fields, 2003). Following the major tragedies of Tazreen Fashion Factory Fire and Rana Plaza building collapse, social protection became a vital issue as it was realised that workers’ health and safety should be prime concerns for employers (Piasna et al., 2020).

4.3 Regulating Institutions/Organisations

According to some studies, the link between the Bangladesh Government and the RMG industry in regard to good governance may be perceived through learning about the interaction between the organisations involved. In Bangladesh, RMG factories, like all other factories, are required to obtain BFSCDA certification for compliance with fire regulations. Purpose built, newly constructed factories have to abide by the Bangladesh National Building Code and receive certification from local authorities under the Ministry of Housing and Public Works, Government of the People’s Republic of Bangladesh (Hyder & Hyder, 2017). Factories within Dhaka require approval from RAJUK and the ones just outside the city, need permission of the assigned city corporations. Factories operating in old structures which were constructed prior to the formulation of the code, are also required to obtain a fitness certificate from BFSCDA before they can obtain a second one from the Ministry (Wadud, 2017).

There is a plethora of other government, non-government, and international institutions that are authorised to oversee design, structural integrity, construction, maintenance, machine layout, safety, compliance, operation, and such other aspects related to a factory building and its management. These include the Labour Directorate, The Department of Labour (DoL), Ministry of Industries, Ministry of Finance, Bangladesh Garments Manufacturers and Exporters Association (BGMEA), Bangladesh Knitwear

Manufacturers and Exporters Association (BKMEA), RAJUK, ILO, DIFE, and trade unions to name only a few (Biswas, 2015). In fact, a garment manufacturing building needs approval from 19 organisations before commencing its venture. However, there is no database on the country's RMG sector for monitoring (Bossavie et al., 2020).

The following section of this study will discuss a selected few of the significant institutes relevant within the scope of this research, especially those associated with regulation and monitoring of safety within RMG factories of Dhaka. A discussion of institutes that supervise workers' welfare follows.

The prime organisation accredited for Dhaka city management and progress is the Dhaka City Corporation (DCC), the first civic committee formed in 1823 to administer the city's urban issues (Mahmud & Hoque, 2014). According to current national law, the executive authority of the corporation is conferred upon and exercised by the elected city mayor for five years. It constitutes sub-committees to monitor and provide guidelines for its activities (Akhter, 2009). According to the Town Improvement Act 1953, Rajdhani Unnayan Katripakkhya (RAJUK) has the legitimate power to prepare land use plans, oversee implementation of plans, control the city's development and guide Dhaka's growth. It is, however, independent of DCC and, according to Rahman (2015), the coordination between these two authorities is apparently unproductive.

RAJUK's objectives were to ensure a planned development while encouraging a healthy urban environment; reduce congestion and overpopulation; resist expansion of conflicting land uses; and most importantly, ensure the city's sustainable development (Mahmud, 2007). RAJUK is the statutory agency under the Ministry of Housing and Public Works in Dhaka that has been authorised in 1987 to initiate and implement Dhaka's development plans through formulation of rules and regulations (ADB, 2012). It is the capital development authority—a local public organisation responsible for directing urban growth. It exercises development regulating performances according to conditions stated in the East Bengal Building Construction Act 1952 and its subsequent amendments (Ahmed &

Montu, 2021). The failure of both DCC and RAJUK to control the development process can be blamed for the deterioration of Dhaka's overall living conditions and sustainability.

Dhaka City Corporation (DCC): Throughout the Pakistan era, Dhaka continued to be a municipality in spite of its expansion in both area and population as its prominence escalated with the presence of the provincial government head and its remarkable development in several sectors, significantly trade and industries (The Guardian, 2021). After the nation emerged as an independent country, the local urban authorities operating during the previous rule were officially disbanded and new administrative officials were appointed on the President's order (Ferdous, 2020).

Municipalities underwent marginal amendments in structure and the functions remained almost unchanged, and in 1977 a new Municipality Ordinance was declared without substantial alterations. As a result of this act, Dhaka was once again designated as a municipality (Roy et al., 2019).

However, it was soon realised that the city demanded a broader framework and governance, particularly to represent the people and to levy taxes.

Dhaka had expanded phenomenally by 1983, with its population reaching over 3.4 million and its area exceeding 400 sq. km., compelling the local government of the metropolis to respond to the transformations of the city's nature (Banglapedia, 2021). Hence the need to upgrade the Dhaka

Municipality was acknowledged, and in 1983 the City Corporation was introduced for Dhaka under the autonomous Dhaka Municipal Corporation Ordinance (Akhter et al., 2009). Dhaka was made a corporation to be referred to as Dhaka Municipal Corporation, renamed Dhaka City Corporation (DCC) in 1990. The primary purpose of DCC is to manage this megacity by providing amenities to its citizens, managing waste, and delivering conservation and certification services (Talukder & Newman, 2003).

In general, city corporations in Bangladesh, have been delegated a lengthy list of functions by the central government that can be broadly categorised into six categories as follows:

- Public health (waste management, water supply, sanitation, etc.)
- Public welfare (education facilities, recreation, etc.)
- Public safety (fire protection, street facilities like walkways, lighting, etc.)
- Public works (development and maintenance of infrastructure, drainage system, etc.)
- Planning and establishment activities (town planning, commercial markets, etc.)

However, this institution is criticised for lacking vision to respond appropriately to the expansion and character transformation of Dhaka. It is said to be administratively weak and inadequately staffed, with elected bodies being far from transparent regarding their performances and not answerable to the people (Samad, 2012). RAJUK is authorised to regulate urban housing facilities and implement city planning and is independent of DCC. The coordination between these two organisations and with some others is ineffective. This is perhaps the most influential reason behind the unplanned growth of Dhaka's peripheral areas (Mahmud & Hoque, 2014).

RAJUK (Rajdhani Unnayan Katripakkha): RAJUK, the only organisation with well-defined responsibilities for planning and management in the city was formed in 1987 under the Ministry of Housing and Public Works. It is the National Authoritative Board for coordinating urban development within the region of Dhaka, including planning, estates and resources, allotment of land, and construction approvals from private and public entities (RAJUK, 2016). It had been originally formed as Dhaka Improvement Trust (DIT) in 1956 by the Town Improvement Act 1953 with the significant objective of controlling the growth of Dhaka and Narayanganj. The challenges arising from the rapid development of urbanisation of the capital and its environs in the 1970s and 1980s necessitated the reformation of the administrative and legislative structure of DIT (Naomi, 2020).

This regulatory institute is expected to prevent illegal structural development that may interfere with the environmental stability and habitat of the sprawling city (Islam, 2007). As per RAJUK regulations, every construction within their jurisdiction requires approval from an authorised officer or committee under

the Town Improvement Act 1953 and any type of building, including housing, commercial, and industrial, must conform with land use instructions (Alam & Alias, 2018). The agency has the power to monitor and guide expansion, development, and enhancement of the cities of Dhaka, Narayanganj (a city just on the periphery of Dhaka) and a few other areas in the vicinity of the two towns (Mahmud, 2007). After additional jurisdictional areas were established, major sections of Savar, Gazipur, and Keraniganj were allocated by RAJUK with the intention of developing a planned metropolitan city (RAJUK, 2018). These areas, including Narayanganj and a few others like Tongi, are all industrial cities comprised mostly of RMG factories. Scarcity of space and resources within the capital compelled garment entrepreneurs to set up their factories on the outskirts of Dhaka (As-Saber, 2018b). The agency is the legitimate approver of any building construction in greater Dhaka. It was entrusted with the responsibility of permitting land use and processing planning approval for residential, commercial, or industrial purposes after granting Land Use Clearance and Building Permission. The main functions of RAJUK are listed below (Mahmud et al., 2014):

- formulation of Master Plan or Development Plan for Dhaka Metropolitan Area
- controlling land use planning and zoning
- comprehensive area planning
- planning and infrastructure of new roads, bridges, etc.
- planning housing zones within the city
- development of satellite towns
- approving markets and shopping centres or any other commercial structure
- implementing special projects.

Much of the state that Dhaka city is presently in, is blamed on RAJUK for being deficient in expertise for building inspections, negligent of its responsibilities, and above all, corruption. A study has listed the primary violations committed by this institution in which Dhaka's growth was highly dependent. These are: i) its failure to prepare the Detail Area Plan for the capital even after 12 years of formulation of the Structure Plan that

obstructed some important proposals for Dhaka's development between 1995-2025; ii) its inability to take effective action when the Structure Plan and Urban Area Plan of Dhaka Metropolitan Development Plan (DMDP) were violated on several occasions; and iii) its failure to retain and implement the standards of planning of the DMDP (Haque et al., 2014) and currently its DSP 2016-235 which has been criticised for being incongruous with the DMDP (Mowla, 2016).

The authority of RAJUK as an agency for planning and development has been impugned for the organisation's lack of adequate technical manpower and logistics support. It has also been often criticised as being synonymous with corruption and lack of transparency (Dhaka Tribune, 2022). It perhaps is to a great extent responsible for the city's unplanned urban sprawl and the mushrooming of industries, which they approved and regulated prior to the establishment of other agencies.

RAJUK had been allocated immense responsibility for developing the city of Dhaka sustainably, but it is often accused of allowing inappropriate permission processes through severe corruption throughout the system. It is even known to be responsible for the city's currently unliveable conditions (Siddiqui, 2019). Much of the blame concerning deprivation from community facilities, congestion, traffic, pollution, and numerous other problems is directed towards RAJUK and said to be the outcome of its unethical practices and exploitation of authority (Mahmud, 2007).

Bangladesh Fire Services and Civil Defence Authority (BFSCDA):

Around 1939/1940, the British Government established the Fire Service within undivided India which later, after a few transitions, merged with the Civil Defence Department in 1981 to form the Department of Fire Service and Civil Defence (FSCD) in an independent Bangladesh under the Ministry of Home Affairs (Huda et al., 2015). Later, the Rescue Department was also incorporated. Its primary function is to provide provisions for fire protection, emergency medical facilities and other critical public safety services to the people (Sarraz et al., 2012). As per its regulations, every RMG factory initially is required to obtain a fire safety certificate from regulators prior to commencing a business and this certification needs to be renewed monthly

by a visiting monitor or inspector from the department (Tishi & Islam, 2019). However, the factories are inspected only once or twice a year owing to workforce shortages, and it is criticised for being corrupted as a result of inspectors' unethical practices. For example, inspection schedules are often revealed in advance, providing ample opportunity for preparation before regulators' visits (Wadud, 2017).

Department of Inspection for Factories and Establishments (DIFE):

Established as a directorate in 1969 by the Government of Pakistan prior to the country's independence, this organisation is an entity of the Ministry of Labour and Employment (MoLE). In 2014, it was upgraded into a department. Under the Ministry, the Department's chief inspector of DIFE is responsible for auditing and supervising workplace environments and working conditions within factories (Akter & Mostafiz, 2016). Its key responsibility is to ensure health and safety of workers and their overall welfare in the leading sectors that contribute to national growth (DIFE, 2020). It is in charge of approving factory layouts, acknowledging complaints from labourers, inspecting workplace accidents and monitoring workplace conditions. The Bangladesh Labour Act 20061 (BLA) and the Bangladesh Labour Rules 2015 (BLR) are the main instruments for the Department's operation (Karanikas & Hasan, 2022). Inspection of the national initiative factories is the responsibility of the DIFE, where engineers are employed to serve as Inspectors General. However, this department has been criticised for lacking visibility despite prevalent reports of unsatisfactory working conditions at local factories (Tribune Report, 2021).

The above are a few of the main national regulatory regimes—there are several other municipalities, city corporations, and unions that are authorised to monitor building construction within Dhaka and its peripheral districts such as Tongi, Savar, and Gazipur, most of which are industrial areas.

The next section discusses the international regulatory bodies which have been introduced in Dhaka's industrial sector, significantly in the RMG sector after the tragic incidents at Tazreen and Rana Plaza.

Remediation Coordination Cell (RCC): As mentioned earlier, supported by the ILO, and funded by Canada, the Netherlands and the UK, the RCC, a

national initiative in Bangladesh, was launched in May 2017 to monitor and supervise post-inspection remedial tasks at the RMG factories. It had been formulated through the collaboration of the Bangladesh Government, BGMEA and BKMEA after consultation with trade unions and international buyers (ILO, 2017d). The RCC was staffed and aided by second members of regulatory authorities with the DIFE, BFSCD, RAJUK, Public Works Department and Chittagong Development Authority who were initially supported by engineers from private sectors employed to provide technical expertise to follow up on remediation requirements (RCC, 2018). The process of remediation in factories is conducted following the Remediation Strategy for the RMG sector that had been established by the MoLE and DIFE, with support from the ILO and recommendations from international engineering specialists (Ansary, Wiersma & Barua, 2021).

After the Rana Plaza collapse in 2013, the priority was to inspect existing export-based garment manufacturing factories for fire, electrical and structural safety when the NTPA, assisted by the ILO, was assigned to inspect 1,549 factories (BGMEA, 2017). Among those, some were shut down owing to noncompliance, while the remaining 1,293 factories were required to remediate detected shortcomings (Ansary et al., 2021). After successfully implementing the Corrective Action Plan (CAP), factories receive a completion approval and in case of any disparity with the findings of the final remediation assessment, the case is directed to the RCC to evaluate the technical aspects and ensure transparency in the reports (RCC, 2018). The RMG factory owners are obliged to cooperate fully and maintain compliance throughout the process of assessment and remediation. The Escalation Protocol was developed to take measures against non-cooperative and non-compliant factory owners or management within the legal framework (RCC, 2018). Remediated factories are required to maintain safety compliance and commit to regular inspections by DIFE. In the future, the RCC envisions transitioning into a government-led Industrial Safety Unit to regulate workplace safety issues and identify and include unlisted or newly established/expanded/relocated factories (ILO, 2018). Presently, with the exit of the foreign regulatory regimes (discussed in Chapter 7), there are only 813

factories under the RCC. Until April 2021, 47% of the total structural, electrical, and fire-related remediation had been completed, including 57% of the fire-related CAPs (ILO, 2021a).

4.3.1 Institutes for Workers' Rights and Welfare

The contentious reality of globalisation has managed to unify modes of production under a dominant approach. The swift pace of industrialisation has formed a parallel entity to the Global West in which workers in the Global South regularly receive low wages and cater largely to western countries (Selwyn, 2019). Arguably, the Tazreen Factory Fire and Rana Plaza incidents were undesirable effects of globalisation which put Bangladesh at the centre of global discussions on labour exploitation and misconduct. Since the tragedies, the ethics of the global fashion industry have been questioned. Although progress in the RMG sector has been astounding, it has come at the price of unsatisfactory working conditions, repression, negligence, mismanagement, and periodic disasters, among other issues (Ahmed et al., 2016).

Various programmes and steps were adopted nationally and internationally after the Tazreen Factory and Rana Plaza incidents to ensure safer workplaces methodically within the RMG industry of Dhaka and countrywide. All approaches and instruments connect three subjects of concern: a) OHS standards b) labour participation, unionisation and collective negotiation and c) labour standards, the focus being on fire and building safety while restricting responsibility to particular tiers of the RMG sector (Kabir et al., 2019). Advanced working conditions, workplace safety, and respect for workers' rights including their entitlement to set up trade unions are indispensable, both in their own right and since such restructuring can assist in preventing disasters that victimise workers. Rights in workplaces in Bangladesh are underpinned by elementary human rights in accordance with ILO conventions, advocating safety within workplaces and protection of every individual (Khan et al., 2019). The following section elaborates the roles of some of the most significant national and global institutions within the scope of this study which serve to retain the rights and welfare of the RMG factory workers through ensuring their safety within workplaces.

Ministry of Labour and Employment (MoLE): The Ministry of Labour and Employment (MoLE) plays the lead role in monitoring and implementation of safety related issues in all industrial sectors. The objectives of this ministry are to alleviate poverty through expanding employment opportunities for the underprivileged, unemployed and untrained workforce; enhancing efficiency of factories by ensuring healthy and safe working environment; and ensuring workers' welfare in different industries (Akter & Mostafiz, 2016). The Ministry is governed by labour laws and serves justice through labour courts where required and is authorised to improve and administer directorates into departments. It had been established with the assistance of the ILO, the Department of Inspection of Factories and Establishments (DIFE), the Department of Labour (DoL), and the Bangladesh Fire Safety and Civil Defence (FSCD) which have considerably strengthened human resources and logistics (Khan et al., 2015).

Bangladesh Garment Manufacturers and Exporters Association

(BGMEA): The RMG sector of the nation is controlled by the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), an industry group that was instituted in 1983 to assist the Government to oversee the administrative aspects of this industry (Committee of Foreign Relations, 2020). Currently it possesses tremendous regulatory authority and in some cases is said to be more influential towards the factory owners than the Government itself (Rahman, 2020). Its role in developing and expanding this sector is crucial as it is one of the country's largest trade associations, particularly the knitwear, woven garments and sweaters sectors (Akter & Mostafiz, 2016). It is dedicated to the promotion and facilitation of the apparel industry through advocacy of policies to the Government, services to members, and safeguarding workers' rights and social compliance at workplaces (TIB, 2013). The BGMEA has devised its own code of conduct for the RMG industry in alliance with major trade unions and has established a compliance unit that monitors working conditions in its members' factories (UNIFEM, 2008). Being the dominant reformer of the garments industry, the BGMEA can complement its role in implementation of self-monitoring and enforcing compliance through compulsory training courses to

create awareness about workers' rights, OHS, inspection, and corrective measures to encourage compliance, that goes beyond checklists to create a culture of ethical practice throughout the RMG industry (Ali & Medhekar, 2016).

Having evolved in an unplanned manner, many BGMEA member factories have been relocated just outside Dhaka to ensure safety within the factories and make a positive impact on the city's overall built environment. The Government has also been requested to allocate more plots for the garment factories outside the capital (Akter & Mostafiz, 2016). The BGMEA is also the medium through which governments and buyers communicate, and negotiations between exporters and buyers are carried out to maintain steady business within the industry. However, some studies have found that both the Government and BGMEA undertake initiatives which are not implemented and most manufacturing factories, especially small-scale ones, avoid being compliant to minimise expense. They are often criticised for focusing on benefits for the garment factory owners rather than for society or workers' welfare (Ferdous, 2015).

Trade Unions: The Bangladesh Garments Workers Trade Union Centre (GWTUC) is a federation of garment employees, being the largest in this sector with more than 20 factory affiliations. The need for trade unions in Bangladesh became more urgent after the two main factory accidents motivated the labour force to be concerned about their rights and interests (ITUC, 2020). Regardless of age or gender, each worker is entitled to join the trade unions to promote OHS in the RMG workplaces (ILO, 2017e). The country's trade unions prioritise improved working conditions, respond to legislation, increase interaction among workers' and employers and others, with OHS being the centre of their functions and responsibilities (ITC, 2017). Trade unions must keep their actions focused on their rights and aligned with regulations specified in the BLA (2006) and BLR (2016) (ILO, 2018a).

The RMG industry in Bangladesh provides the ideal opportunity for establishing and promoting labour rights only if the Government can formulate and implement rigorous and stringent labour laws and regulations. Over the previous few decades, there have been fundamental

transformations in the manner in which these institutions operate, obliging governments to revise organisational practices and management procedures. Bangladesh is part of these changes too (ILO, 2020). One such institution is the International Labour Organisation (ILO) whose key role has been strengthening labour administration and implementation of the national labour policy in Bangladesh. They have been serving as the primary global organisation that overlooks the rights and welfare of workers. The following section elaborates the role of the ILO in improving both human and institutional capacity within Dhaka's RMG industry.

ILO: A range of social thinkers and researchers maintain that international labour standards were essential to combat the trials of competitive global pressures leading to deterioration of employment conditions from the early 19th century (James et al., 2018). An intricate body of such practices evolved with the adoption of the six initial International Labour Organisation (ILO) Conventions in 1919 which were later promulgated, being distinguished separately as processes, rights, or standards (ILO, 2013b). The aim of each standard developed varied from being applicable to domestic laws to regulations of states or organisations in accordance with international guidelines to shape global business activities (James et al., 2018). According to the ILO, reliable and accountable industrial safety governance through proven practices and methods needs a number of capacities and institutions (ILO, 2020). In the case of Bangladesh, the basis of legislative labour administration is derived from the Bangladesh Labour Act 2006 (BLA, amended in 2013 and 2018), the Ministry of Labour and Employment (MoLE) which holds the ultimate responsibility for working conditions through the Department of Labour (DoL), Department of Inspection for Factories and Establishments (DIFE) and the Labour Judiciary (ILO, 2016b).

The ILO's constituents comprising governments, employers and workers have legal instruments called International Labour Standards (ILS) that rest upon a few fundamental principles and rights at work called the ILO Conventions or Protocols (ILO, 2020). The ILO Governing Body has classified eight primary conventions among 189 related to disciplines that are

considered to be most essential principles and rights at workplaces. These are the:

- Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87)
- Right to Organise and Collective Bargaining Convention, 1949 (No. 98)
- Forced Labour Convention, 1930 (No. 29)
- Abolition of Forced Labour Convention, 1957 (No. 105)
- Minimum Age Convention, 1973 (No. 138)
- Worst Forms of Child Labour Convention, 1999 (No. 182)
- Equal Remuneration Convention, 1951 (No. 100)
- Discrimination (Employment and Occupation) Convention, 1958 (No. 111) (ILO Conventions, 2022)

However, none of these conventions include recommendations related to the health and safety of workers. The ILO mandates that nations must develop coherent national governance on occupational health and workplace safety, along with workplace environments designed to prevent mishaps and injuries arising from, or in the course of, service, through minimisation of the causes that lead to hazards (ILO Convention 155, Article 4, ILO, 2020).

Bangladesh has been actively a part of ILO since 1972 and has consented to 35 ILO Conventions. The ILO serves to stimulate appropriate employment opportunities in the country, with assistance from government, employers, and workers organisations (ILO, 2021b). It commenced service by opening its office in 1973, initially increasing income-earning opportunities through labour intensive infrastructure. The organisation also strives to encourage implementation of safety measures and decent workplaces; eliminate child labour; and establish fundamental social stability (ILO Bangladesh, 2021). The ILO'S multilateral nature functions in collaboration with the Government, Bangladesh Employers' Federation (BEF), the National Coordination Committee for Workers' Education (NCCWE) and the Industrial Bangladesh Council (IBC). As part of the UN system in the country, the ILO supports the Government of Bangladesh in implementing its Five-Year Plan to attain the

Sustainable Development Goals (SDGs), particularly those related to sustaining steady economic progress through productive employment and safe workplaces (ILO 2030 SDG targets).

As an outcome of the reformation of labour laws and registration of new unions, the ILO, in collaboration with the International Finance Corporation (IFC), launched the Better Work programme in 2013 to emphasise on industrial relations and worker issues like overtime and wages. The programme involves selected factories which are considered qualified after undergoing inspections. It encourages American brands and retailers to join the programme, after which the Better Work teams provide consultancy services and training to factory administrators and workers (Staff Report, 2020). The ILO also created a “Framework for Continuous Improvement” plan derived from the National Adaptation Plan, Global Support Programme and Sustainability Compact. The ILO believes the Better Work programme to be a positive initiative for improving the country’s working conditions within its RMG industry, particularly where the unions were active (ILO, 2021).

4.4 Roles of Actors for Ensuring Safety within the RMG sector of Dhaka

Maintaining safety and productivity of RMG sector is not only a concern for owners of RMG factories but also for the Government of Bangladesh.

While ensuring safety in factory buildings may primarily be the responsibility of factory owners and regulatory bodies, all actors, including professionals and practitioners involved in the design, construction and maintenance of factories share this responsibility. Sustained safety is built upon basic values and principles that are shared within the society through education and a commitment to ethical practices. Transformations within an urban environment by the addition of infrastructure, buildings and spaces impact living conditions and the wellbeing of its residents. Siddiqui and Uddin (2014) observe that practitioners, planners, architects, developers, engineers, and others have accepted in recent years that they are guided by development principles and policies that promote national and international standards of safety. This study focuses on the actors who are most influential in implementing and regulating safety aspects in the RMG workplaces within Dhaka’s built environment. The following section defines roles and

responsibilities in terms of designing, practising, and sustaining safety within a city's built environment.

4.5 Defining Roles and Responsibility

To comprehend the actors' tasks and what is expected from them in detail, the following section commences by explaining the defining roles and responsibilities in terms of designing, practising, and sustaining safety within the city.

These two terms may be succinctly defined by simply saying that "role" indicates an individual's position in a team while "responsibility" signifies the tasks and duties allocated for a particular role or description (Indeed, 2021). Roles of an individual within a group, team or organisation are driven by goals, expertise, experience, and knowledge. Clarity of roles and responsibilities may seem to be an ideal way to create a successful organisation (Mazza, 2020). However, while this practise alone may temporarily identify breakdowns, underlying complications caused by a lack of clarity tend to re-emerge.

It may be summarised that traditionally most individuals involved in the process of building assume one of these four sets of roles and responsibilities among other safety obligations (Thompson, 1998):

- securing and providing resources, investments, and finance (clients, owners, employers, etc.);
- conceiving/designing, and assisting in the building process (architects, surveyors, engineers, etc.);
- carrying out and supervising construction (contractors, etc.);
- regulating and monitoring building compliance under the prevailing legislation and regulations (planning and building regulators).

Stakeholders may be described as individuals or groups who are involved in an organisation and are impacted by its actions. They may be consumers, clients, employees, suppliers, management, owners, government officials, unions, and others (Thompson, 1998). Therefore, organisations should consider sustainability for the stakeholder component. Their contributions are

equally valuable and interrelated, although the authority of different parties may vary.

The discussion below endeavours to explain the roles and responsibilities of the most prominent actors/stakeholders who are involved in Dhaka's RMG industry.

4.5.1 Role of Labour

The role of organised labour is imperative in improving safety conditions within the RMG workplaces in Dhaka and the rest of the country. A vigorous labour movement or union is perhaps the best bulwark against any risks or unprecedented tragedy. As stated in the Committee of Foreign Relations Report (2020), enhancement and modification of workers' rights in Bangladesh can benefit in culminating the "race to the bottom" and uplift labour standards in other flourishing economies like Vietnam and Burma (Evans, 2021). Effective relations with labour can be the key to promoting a proficient industrial workforce and a sustainable urban industry. However, association between the industry's managerial bodies and the labour force in Bangladesh has been pervaded by a deep-rooted antagonism (Rahman & Langford, 2012). The core of this antagonism lies in the industry's disregard for the potential of workers to be an irrefutable driving force for urbanisation and socio-economic growth (CSI, 2013). Although the industry has made progress in eliminating certain issues such as child labour, workers' right to entitlement for association, organisation and engagement in negotiations is widely overlooked. Therefore, the rightful roles and responsibilities of labour remain undermined (Morshed, 2007).

Fortunately, the workers have been supported by NGOs since the 90s when an activist named Jeff Ballinger published an exposé of the renowned brand Nike, highlighting an Indonesian worker who was paid just 14 cents an hour, lower than Indonesia's minimum wage, and depicted other forms of abuse. The findings showed that Nike's business model exploited children and used "sweatshops" to manufacture footwear at the lowest cost of labour (Nisen, 2013). "Sweatshops" became an expression with negative connotations for working environments—they are considered to be disappointingly challenging or threatening places where employees work long hours for low

wages (EPRS, 2014). In 1992 and 1993, protests against Nike were made by workers and Ballinger's NGO "Press for Change", provoking a tide of mainstream media interest which led to Nike establishing a department assigned to improve working conditions in 1996 (Locke, 2002). Protestors were later joined by college students, and by 1998, after unrelenting global criticism, the company was compelled to realise its need for change and lift the minimum age of workers, implement monitoring of factories, and adapt the U.S. clean air quality standards throughout their factories (Ziege, 2019). They also committed to transparency and maintaining corporate ethics by giving human rights organisations access to inspect their factories. Today, the company continues to publish reports revealing its audit data as a part of its corporate social responsibility. Many other major global companies followed their footsteps, willing to invest a small fraction of their revenue in community welfare to maintain their individual branding.

However, in Bangladesh, clarity of operation fails to change issues like low wages or tragedies (Nisen, 2013). Cheap labour has always been the most lucrative reason for foreign buyers to remain inclined towards Bangladesh. From the inception of the RMG sector, unit labour cost in the country has been the lowest in comparison to other manufacturing nations. In the 1990s, the country's unit labour cost was U.S.\$0.11 per shirt, whereas in India it was U.S.\$0.26, in Pakistan it was U.S. \$0.43, and in Sri Lanka it was U.S. \$0.79 (Muhammad, 2011).

Although minimum wages increased after one of the worst building disasters in the country in 2013, according to a survey conducted in 2017 and 2018, garment factory workers' monthly wage was only U.S.\$101. This is still much cheaper than Myanmar (U.S.\$135/month), Cambodia (U.S.\$170/month), Vietnam (U.S.\$234/month) and China (U.S.\$518/month), making the cost of labour a significant driver of the flourishing apparel industry in global export markets (Dhaka Tribune, 2020). Table 4.2 reveals the minimum monthly wage of workers in RMG exporting countries prior to the aftermath of scandalous building disasters in 2012 and 2013.

Table 4.1*Minimum Wage (Monthly) in Selected Countries to 2013*

Countries	Minimum Wage (\$)	Per capita GDP (\$)	Monthly Per capita GDP (\$)	Minimum Wage as a Percentage Share of Per capita GDP
Bangladesh	68	957.8	79.8	85.2
Cambodia	128	1006.8	83.9	152.6
China	134.5-293.1	6807.4	567.3	23.8
Indonesia	103.1-209.7	3475.3	289.6	35.6
India	65-142.6	1498.9	124.9	52.0
Myanmar	50.6-60.6	---	---	---
Pakistan	101	1,275.3	106.3	95.0
Sri Lanka	73	3,279.9	273.3	26.7
Vietnam	88.7-126	1,910.5	159.2	55.9

Note: Source: National Wages and Productivity Commission, Department of Labour and Employment, Government of Philippines.

Bangladesh was not the location of the inception of manufacturing globally. Until the 1960s, clothing industries in the U.S. and U.K., along with few European nations, switched to domestic subcontracting to smaller factories for the convenience of cheap female labour while extensive merchandising was handed to larger companies (Masum, 2016). Subsequently, as manufacturing wages began to surge, garment retailers in the first world countries found it more cost-effective to relocate production to the more affordable, developing countries. Such outsourcing operated through subcontracting between retailers belonging to the developed nations and manufacturers based in the developing or underdeveloped countries (Salam & McLean, 2014). In this way, a triangular trade between the garment manufacturers, international buyers, and retailers was established. The MFA quota restrictions (as mentioned in Chapter 2) resulted in Asian regions that had consumed their quota setting up manufacturing platforms elsewhere in Asia, causing the rapid expansion of the RMG sector in South Asia (Absar, 2001). RMG manufacturing in South Asia grew rapidly, owing to the

availability of quotas for the American and European markets, cheap labour and flexibility of entry and exit for business operations. These conditions significantly helped countries like Sri Lanka, Nepal and Bangladesh which historically had no experience in export of garments (The World Bank, 2005). The garment manufacturing industry is a low-technology and labour-intensive sector, which means that its global relocation is dictated by the availability of cheap labour, the advantage provided by Bangladesh provided, along with a surplus of labour (Velde, 2014). Because of the low cost of labour, the country successfully outshined its competitors and retained its position on the global map throughout the 1980s and 1990s.

The country's RMG industry does not facilitate transformation of underprivileged rural people into specialised industrial workers. However, their contribution has revolutionised certain aspects of the RMG industry, both domestically and internationally. Workers must now acknowledge their constructive role as influencing agents within a thriving workplace that manifests the capacity for sustainable social-economic development and grow their sense of ownership and ability to reform this giant industry (AMRF, AWAJ & CSI, 2013).

4.5.2 Role of Planning and Practitioners

Unfortunately, Dhaka has not been developed with attentive planning from the time of the country's independence in 1971 with little consideration given to exploiting the prospect of establishing the national capital as a nucleus for multi-faceted development (Ahmed, 2011). Amidst a rapidly growing population, city life has been challenged with insufficient services in sectors including transportation, housing, utilities, community and housing facilities, social amenities, infrastructures, industrial and business services. In most cases, implementation of plans has been delayed owing to lack of good governance, and some are not implemented at all (Azad, 2011). The role of the planners remained largely ineffective against political forces that patronised developers (including practitioners such as architects and engineers) and other stakeholders in matters related to building development. Dhaka's rapid growth and global urbanisation in the past decades, however, raises demands for effective planning to provide an

enhanced quality of life. This is becoming an increasingly critical issue. Planning is crucial for development and numerous Sustainable Development Goals (SDGs) are linked with urbanisation where they address aims to “make cities and human settlements inclusive, safe, resilient and sustainable” (UN, 2018). Over the years, “planning” has evolved from being space-oriented to being related to social, environmental, and economic aspects. Professionals and theorists have also evolved their conceptual approach to place more emphasis on relevant policies, governance, and practice (Ahasan & Hoda, 2020). The Government uses planning as a tool to address underlying issues of a specific area and thus, it could be a procedure for seamlessly organising a developing space (Nahrin, 2018).

According to one of the SDGs, sustainable development is not attainable without considerably transforming the manner in which urban spaces are built and (SDG Goal #11). Global emphasis is on creating inclusive, safe, resilient, and sustainable cities to encourage sustainable urbanisation, to provide universal access to safe, inclusive, and accessible spaces, and to adopt and implement integrated planning and regulations (UN, 2015).

Currently the central planning organisation of the country is the Bangladesh Planning Commission, which determines goals, objectives, and strategies for temporary and short-term schemes within the framework of future and formulates policy measures for reaching the targets (Chowdhury, 2014). The main purpose of the Planning Commission, established in 1972 after the liberation war, was upgrading the living standards of the country’s people with provision for basic needs for all through systematic development by setting out ten main functions for the commission. These functions may be classified into three broad sets of roles of the Planning Commission as follows (Hamiduzzaman, 2014):

- Advisory role: guiding the Government in issues of development ambitions, priorities, strategies and governance
- Executive role: preparing plans, administering development projects

for approval, and formulating Annual Development Programme

- Coordination role: managing all planning activities.

RAJUK on the other hand is the leading authority charged with the responsibility of planning, developing, and managing Dhaka's development under its jurisdiction. Therefore, the Planning Commission and RAJUK bear the responsibility of directing the country to the SDGs to which it is committed (Khan & Mahmud, 2020).

Design and construction of the built environment have always been the centre of debate or disagreement in relation to the threats that defectively designed buildings can pose to their occupants' health, safety, and well-being. From the ancient building codes of Mesopotamia in the first century BC to contemporary systems of building control, regulating the risks allied with the building sector has always been an attribute of the design and construction practice (Imrie & Street, 2009). Building failure is the most common cause of casualties and property losses related to industrial buildings, however structural strength is not the sole crucial element for building safety (Idham, 2020). Other risks include the threat of fire, structural issues, lack of maintenance, and natural catastrophes. Historically, industrial buildings were primarily designed to maximise profit. Therefore, user contentment was not given adequate consideration, which obviously led to poor working conditions within these buildings (NFPA, 2016). There had been philanthropists like George Cadbury (1839–1922), an affluent Quaker manufacturer based in Birmingham who was among the few pioneers who sought the reformation of workers' accommodations (Bailey and Bryson, 2007). In 1893, he developed a landmark housing establishment near his chocolate factory in Bournville. It was the first model settlement dedicated to factory employees, becoming the model for consecutive Quaker developments in 1901 and 1907 (Pietrusiak, 2003). Along with growing awareness about the interdependence of a good workplace environment and workers' efficiency, minimum standards were introduced within European and American industries although this interdependence continued to be

underestimated in the developing countries (Dost et al., 2011).

Practitioners play a vital role in conceptually, structurally, and physically building a structure within a deluge of rules and regulations. Architects endeavour to meet aesthetic, functional and safety standards which include securing minimum standards of design inclusive of safe and healthy environments; usage of materials; construction techniques; clients' costing parameters and many others. Different dimensions of building design and development processes are construed within a broad and complex regulatory field by both government and non-government actors and institutions (Habracken, 2005). As for engineers, many of the decisions they make often hold ethical dimensions and implications that influence the structure and final design of a building. Bowen (2017) thus asserts that the codes of engineering ethics should feature concerns for health, safety, and welfare of common people as paramount.

Practitioners, in general, are required to recognise their responsibility to avoid unprofessional and unethical conduct and their obligation within reasonable boundaries to prevent harm to a buildings' occupants. This obligation means that practitioners must anticipate risks, investigate underlying issues, and alert appropriate authorities; in other words, serve as "whistle-blowers" (Dien et al., 2020). However, professionalism and safety may not be perceived as univocal—safety considerations may just be absorbed by practitioners as a self-evident part of their skillset (Gilbert, 2018). Safety cannot be dissociated from any form of practice, process, or organisational procedure. A permanent safe condition is to be maintained routinely along with everyday application of a set of rules, methods, and experiences and practical know-how through learning and amending mistakes (Amalberti, 2018). The dilemma of whether safety is to be demanded by the client or to be voluntarily implemented by the practitioners is prevalent, however.

4.5.3 Role of Owners

In spite of well-articulated local and international regulations for safeguarding and corroborating safety for factory workers prevailing in Bangladesh, the unpardonable Rana Plaza collapse exposed the negligence of factory

owners, along with others. The UN Guiding Principles on Business and Human Rights, unanimously agreed upon by all member states including Bangladesh in 2011, outlined the specific roles and responsibilities regarding human rights for both authorities and business owners. The framework was based on three pillars: Protect, Respect and Remedy (Sherman, 2020). The right to safe work is an acknowledged labour right and therefore the UN framework should be applied to resolve issues of risky workplaces by states and garments factory owners who are obligated to meet local and global health and safety standards at such workplaces (Munni, 2020). ILO Convention 155 on OHS defines steps that are to be taken by governments and organisations to enhance workplace conditions and safety but has not been adopted by Bangladesh's Government. Instead, the Government has varying directorates under separate ministries in addition to international guidelines and institutions to oversee the rights, protection, and safety of workers in factories (ILO, 2020). Along with the construction industry being heavily influenced by politics and corruption, allegations are commonly made that factory owners exercise their monetary power and position to influence authorities and succeed in violating building construction Acts or planning Acts, as well as other Acts, during the establishment of their factories (Johara, 2018).

An owner's or employer's responsibilities have also been allocated in the BNBC and may be listed as follows (Rahman & Rahman, 2020):

- acting rationally and responsibly
- looking after and protecting the people who have been employed
- whistleblowing potential health and safety risks such as building issues or concerns about well-being
- cooperating with all health and safety regulations and guidelines
- prioritising all remediation tasks regarding building safety.

Historically, factory owners have been held most accountable for their reluctance to implement substantial safety standards in the workplaces that resulted in catastrophic outcomes. A mere expression of regret, or on some occasions compensating the workers for their injuries or loss, seem insufficient responses when their conscious decision to compromise with

building safety, operation and maintenance puts the lives of the workers in jeopardy (Roland, 2012). The expectations of RMG factory owners and recommendations have been summarised by the Clean Clothes Campaign established in 1989, the largest alliance of trade unions and non-governmental organisations. They are listed below (Wawrzyniak, 2017).

- All workplaces including extensions to factory buildings must fulfill legal requirements and all electrical equipment must be accurately maintained.
- The safety situation at all workplaces must be reviewed by a neutral inspector and rectify any safety concerns that may be identified during the process.
- During renovations or remediation periods, workers' employment is to be maintained and they are not be deprived of any payment.
- Supervisors, managers, and labourers should be given appropriate training on fire and safety practices and be assured of safe exit from buildings during or following any mishap.
- There should be sufficient exit routes for the number of workers, which must remain unlocked and unobstructed at all times.
- In accordance with the country's law, a Health and Safety Committee is to be established with workers and managers, with the number of workers selected by the factory's trade union, to comprise no less than 50% of the membership.
- Workers must be assisted to deal with concerns and address the roles trade unions and workplace safety committees can play in implanting and practicing safety standards for workers.

The responsibility for safeguarding and protecting workers at RMG factories lies primarily with the owners according to the Clean Clothes Campaign, although precautionary measures taken by stakeholders and enforced by authorities are also crucial (Heugten, 2016).

4.5.4 Role of Regulators

Safety standards for buildings once adopted as a law by responsible government agencies are to be abided by during all construction works in the

city or country where administrative units control the approvals and inspection procedures (Fakunle et al., 2020). Management and application of building codes generally involve processes such as obtaining licenses, permits, fees, occupancy certificates, and drawing approvals, along with another phase of ensuring implementation of accurate safety standards for structural component, stairs, fire and such other aspects (Foliente, 2000). A transparent control and verification system for evaluating a building's compliance requires on-site inspections during and after building construction to be undertaken by experienced and trained inspectors. Ideally, local authorities assign a director with the responsibility of ensuring enforcement of building codes focusing on protection of workers'/occupants' health, safety, and welfare (Fakunle et al., 2020). A regulator's main role begins with the task of assessing or examining documents related to proposed construction projects and verify their compliance to building codes and regulations. The plans are assessed and building inspectors impose any relevant regulations, construction codes and regulations, building use procedures to be followed and materials to be used (Ahmed et al., 2017). Regulatory bodies are to inspect and ascertain that newly constructed or extended buildings are safe and compliant with local codes and laws.

As discussed in the previous chapter, the chief regulatory body responsible for the buildings within Greater Dhaka is RAJUK, recognised as the National Authoritative Board on building planning, resources, estates, land allotment and construction permissions both government and private (RAJUK, 2016). It regulates all development-based undertakings within the capital under the provisions of Town Improvement Acts, Building Construction Laws and Land Use Regulations under the jurisdiction of the city. Its three vital roles are Planning, Development and Development Control with the goal of making Dhaka liveable (Rahman, 2015). The most prominent functions of RAJUK may be summarised as follows (Ahmed & Montu, 2021):

- planning
- Land Use Clearance and Deviation in Plans or Constructions
- controlling building heights
- monitoring physical development under the national urban policies

- the “Construction Actor” for culverts, bridges, etc.
- designing most government projects
- land acquisition.

Although entrusted with critical and decisive roles and responsibilities, the agency has long been known for its reputation of being corrupt and unethical than dutiful and effective. A survey of the ongoing reformation of Dhaka’s Detailed Area Plan (DAP) revealed that over 95% of the city’s structures under RAJUK’s jurisdiction were established without their approval (Roy et al., 2019).

4.5.5 Role of Buyers

Prominent stakeholders in the RMG sector are the buyers who together are a fundamental factor in the garment export business. Despite the outstanding success of the RMG sector in Bangladesh, fair labour practices are often said to be violated and to improve the conditions of safety within these workplaces, buyers play a major role (Hossain & Arefin, 2015). The country’s RMG export involves some of the industry’s biggest names (mentioned with the location of their headquarters) like H&M (Sweden), Walmart (Arkansas), Li & Fung (Hong Kong), Adidas (Germany), Levis (California), Nike (Oregon), Gap (California), Target (Minnesota), Zara (Spain), Puma (Germany), Kmart (Illinois) and Marks and Spencer (London) to name a few (Grossi et al., 2019).

Buyers, by nature, tend to be attracted to lower prices and pursue available bargains within comparable alternatives. Such fundamental market principles motivate corporate businesses within the globalised economy to locate the labour-intensive segments of production processes within developing countries. However, there is another aspect of buyers’ motivation that runs quite contrary to their tendency to chase cheaper prices: the concept of responsible purchasing.

Responsible purchasing routines are essential for safeguarding garment workers and providing safe workplaces. International buyers, in particular, demand compliance of the RMG workplaces with their individual Codes of Conduct inclusive of workplace environmental conditions prior to placing their

orders for import from the garment factories of Bangladesh (Haider, 2007). The export of readymade garments is not based on the parameters of quality alone but also the working environment where the products are manufactured is important. Social dimensions of the RMG sector are receiving much attention from consumers, social workers, NGOs and welfare organisations, and global buyers (Akbar, 2018). Besides BGMEA, the Ministry of Labour and the local government, buyers play a crucial role in increasing pressure on the garments industry to be compliant and satisfy them during audits (Das, 2007). If a manufacturing company is unsuccessful in fulfilling the buyers' requirements, it may suffer financially or at times, a retail giant may even have the factory expelled from the industry (Hossain & Arefin, 2015).

Multinational garment retailers had been expressing their concerns regarding workplace conditions in Bangladesh since the 1990s when a range of labour violations had been revealed. However, it was only after the tragic Rana Plaza factory building collapse in 2013, through the public exposure of safety contraventions, that the protests intensified, and buyers intervened to demand the implementation of safety in the workplaces of Bangladesh (Park-Poaps & Rees, 2010). Although global buyers have gradually developed various strategies to respond to their social responsibility, significantly after the factory tragedy, they are keen to transfer these obligations to their suppliers for whom these turn into regulations (Mann et al., 2014).

Manufacturers remain eager to keep buyers' content in order to avoid losing business. International buyers require some basic performance standards defining a safety culture adopted by local manufacturers and exporters. On average, every buyer audits these workplace safety measures at least three to five times annually, and safety compliance is a factor in purchasing decisions (Hossain & Ferdous, 2015).

As far as social responsibility is concerned, most global buying firms adhere to the regulations of the host nation relating to wages and workplace conditions because this approach provides a cost advantage and allows them to claim their engagement in ethical standards (Faruq, 2013). Reliance on this approach enables buyers to argue that they have no right to intervene

in the labour regulations of a foreign country thus showing due respect to its socio-political context (Nicholls, 2002). However, several multinational organisations or buyers within the international apparel market have embraced self-imposed corporate codes of conduct which set out the foundation for policy standards to guide factory employees and managers. At the same time, they assure consumers that the products purchased are manufactured at ethically operated factories (Yasmin, 2014). The buyers had introduced the codes because of the perceptions and evidence that the suppliers were neglecting safe and just workplaces and to ensure so, some big retailers agreed upon various declarations and initiatives to commit to a certain level of working conditions for the workers who are producing what they sell (Kabir et al., 2019).

4.5.6 Role of Consumers

The predominant presence of the RMG industry in the Bangladeshi economy is mainly because of its income through foreign export which greatly depends on the demand of consumers for the products being manufactured (Rayhan et al., 2014). The globalised supply chain of the country's RMG sector consists of all parties who are directly or indirectly connected to this industry at different phases. At each stage of the procurement chain, including manufacturing, and customer orders, the suppliers, manufacturers, buyers, and consumers are collaborating for efficiency. The aim is to produce high-quality products at low cost and make optimal profit (Rocky et al., 2019).

Consumers' response to basic marketing strategies and their satisfaction is vital. It is the principal purpose of any business that determines the success or failure of an organisation (Yani-de-Soriano & Slater, 2009). Consumers' role in influencing the pricing of products is crucial for the garment sector and it ultimately creates the circumstances for cheap labour. In several surveys, customers or consumers have ranked the price factor of what they purchase first, followed by availability, quality, comfort and then style/fashion in descending order (Rayhan et al., 2014).

In the early 1990s, the consumer campaign that was later developed into the Clean Clothes Campaign (CCC), emerged in the Netherlands due to the concerns of NGOs over unacceptable working conditions in garment

manufacturing companies of the Philippines (Chang & Wong, 2005). The CCC is an association of several European NGOs and trade unions that endeavours to improve workplace conditions for garment workers and promote local trade unions and NGOs in developing nations through creating awareness and mobilising consumer command over retailers and RMG industries (Pruett et al., 2005). In the U.S., the anti-sweatshop campaign that commenced in the mid-1990s, as mentioned earlier in this chapter, was followed by launching of various other groups such as The National Labour Committee, and the Campaign for Labour Rights (Weil, 2006). A coalition named the Ethical Trading Action Group that supports public access to information on labour conditions in the RMG sector along with monitoring and analysis of company compliance was formed in Canada (Chang et al., 2021). The Clean Clothes Campaign motivates consumers to purchase with a conscience and choose products manufactured under safe and fair labour conditions (Hearson, 2007). Consumers are therefore believed to have relative authority over manufacturing regions which are mainly located in South Asian countries (Collins et al., 2007). Consumers have unitedly objected to buying “blood-stained” products after factory tragedies like the Rana Plaza in Dhaka and this pressure has possibly resulted in initiatives undertaken to improve workplace health and safety conditions in developing countries (Ferdous, 2020). The RMG manufacturers are directed by global consumer pressure to continuously reduce costs.

However, awareness of “sweatshop” conditions and breaches of safety (as mentioned earlier) relating to poor labour standards have driven improvement in workplace conditions. An example of such a reformation that resulted from consumer pressure occurred in 2008 at the Beijing Olympics. The Play Fair Campaign was initiated in which international groups of consumers, sports fans, activists, and workers agreed upon the Protocol on Freedom of Association, an agreement on labourers’ freedom of association. They focused on Indonesia as it is a leading global manufacturer of sportswear and athletic footwear and later, Indonesian brands, global sportswear brands like Nike, Adidas, and Puma adopted the Protocol (ILRF, 2019). Consumer pressure also led to the reopening of a major RMG factory

in the Honduras that had retaliated against its workers by closing an entire factory to prevent unionisation of its workers (Lopez & Robertson, 2012). Consumers can and have been globally influencing the RMG sector, motivating enhancement of workplace safety and overall working environments. However, their inclination towards cheaper prices for quality products leads to the practice of paying low wages to labourers in developing countries. This “compromise” conceivably hinders undertaking of adequate measures to ensure safe and healthy workplaces within the garment manufacturing factories.

4.6 Chapter Conclusion

The considerable advancement made in Dhaka’s RMG sector is undeniable, yet the country remains behind its competitors such as Vietnam and China in safety and compliance issues (Bhattacharja & Hossain, 2017). The plethora of legislation and regulations introduced to regulate this sector without proper streamlining of distinct role and responsibilities of the primary actors, can initiate errors that cause accidents. There is also the issue of the existence of out-dated institutional arrangements and regulations adding to the confusion. Many institutions and regulations have become irrelevant, especially with respect to the RMG manufacturing sector that is part of a global production network and needs to perform to standards expected by international clients.

A specific concern regarding ensuring safety in the workplace relates to the local context of Bangladesh, a developing country where the level of education and awareness regarding workplace safety is lacking. Reform regarding workers’ rights in Bangladesh is an area that remains particularly deficient. For example, the ILO conventions on child labour and workplace safety are yet to be ratified in Bangladesh, as is guaranteeing independence of association to workers. Further amendments are required to the Bangladesh Labour Act and the Bangladesh Labour Rule to adopt relevant conventions of the International Labour Organisation (Islam & Rakib, 2019). As Uddin (2019) notes, dissimilarity in labour laws for the Export Processing Zones and other industrial zones need to be removed by enacting a single labour law applicable throughout the country.

Globalisation has enabled the creation of global production networks within which buyers, mindful of the preferences and demands of their consumers based in affluent countries, negotiate with suppliers in developing countries. Few buyers and numerous potential suppliers can create an unbalanced relationship advantaging the buyers. Tareque et al. (2020) suggest buyers can put undue pressure upon the suppliers in terms of delivery deadlines and pricing which tend to influence compliance with safety standards at the sourcing garment factories. However, as Yasmin (2014) points out, buyers cannot be singled out and held responsible if there is no state governance mechanism to obligate compliance with national safety regulations, or if the licensing and inspection procedures are non-transparent and unreliable. This leads to the proposition by Habib (2009) that in the event of tragic mishaps or hazards, all are to share accountability for injuries or death of occupants and in providing compensation for the victims and their families. All actors contributing to the supply chain network of the RMG industry should have clearly specified roles and responsibilities, individually and as part of society, in respect of safety and sustainability.

Chapter 5: Research Methodology

This study seeks to examine the global interventions triggered by high-profile RMG factory building disasters around Dhaka that marked critical junctures in safety policy reformations within factory buildings that form the global supply chain network. This investigation seeks to understand the dynamics of those reformations and sets out to assess the probability of the safety restructurings being sustained within the country's RMG industry. The investigation requires a thorough assessment of ground reality through the collection of secondary data by reviewing the relevant literature and collecting primary data through interviews of professionals and stakeholders and surveys of factory workers and university students enrolled in disciplines related to the built environment.

This broad research investigates the causes of building disasters, their aftermath, subsequent foreign interventions in factory building safety regimes and the sustainability of building safety improvements. The research methods for addressing the research questions are selected accordingly. A research methodology is the modus operandi on the core research problem providing a holistic structure for the steps that a researcher pursues to accumulate data, and to plan the examination of the findings (Maheshwari, 2017). It is a strategy with the fundamental aim to solve the research problem. This chapter sets out to explain the research methodology and subsequent procedures and methods adopted to conduct this study.

The selection of methods is usually based on the aims and objectives of the study's projected outcomes and the character of research within a definite conceptual context (Nahiduzzaman, 2012). Trochim (2006) indicates two broad approaches to research in educational settings: deductive (quantitative) and inductive (qualitative). According to Trochim, the deductive approach commences with general ideas and concludes with precision and is related to arguments founded upon laws, regulations, or other universally accepted principles. The inductive method moves from specific to broader themes and is based on experiences or observations (Trochim, 2006). Inductive research tends to evaluate descriptive information rather than statistical data and invariably concerns the collection of qualitative data and

is hence synonymous with the qualitative method. The reverse holds true for deductive research (Creswell, 2009). Each type of research approach has its potential limitations. While inductive reasoning may be questioned for the validity of its findings as they are derived from qualitative data, deductive reasoning, being primarily dependent on quantitative information, may lack applicability (Saunders et al., 2009). Therefore, a mix of approaches may often be needed to facilitate thorough research and can be a versatile model for addressing myriad issues.

Table 5.1

Comparison between Deductive and Inductive Approaches

Deductive Approach	Inductive Approach
Elaborates causal relationships between variables.	Comprehends the context of the research extensively
Employs quantitative data	Utilises qualitative data
Expands from data to theory	Involves humans in situations
A considerable sample used for generalisation	Less generalisation
Based on scientific principles	Acquires an understanding of the context
Researcher remains uninvolved in the study	Researcher is involved in the study
The process is systematic	Flexible structure for alterations
Applies controls for need of validity	

Note. Source: Saunders et al. (2009, p. 127).

5.1 Preliminary Research Concepts and Selection of Methods

The thesis is more inclined towards the inductive approach as it endeavours to form a rationale from relevant observations and reach a general conclusion. It employs a combination of both qualitative and quantitative

methods where, according to Creswell (2009), both are understood to be ends of a continuum. The qualitative method involves comprehending and exploring human behaviour attributed to societal or human concerns (Creswell, 2009). The quantitative study looks to unveil facts about social phenomena (Nahiduzzaman, 2012). There is also another approach, mixed methods, which is a combination of both qualitative and quantitative methods used to comprehend and examine an issue profoundly and widely (Denzin & Lincoln, 1998).

The selection of a research strategy is extensively influenced by the requirement to demonstrate observable results from fieldwork. Quantitative research is often understood to deliver the most rational and dependable form of calculating the effectiveness of a study that is easily comprehensible. The outcomes or findings may be standardised across specific groups according to their allocated roles, responsibilities, and situations. This study utilises this approach to draw comparison between each group of respondents in an attempt to reveal their views on certain aspects of building safety within Dhaka's RMG sector.

Qualitative methods can express a better perception of underlying social and ethical dynamics related to safety practices and regulations as they address the situation that building strategies or issues are not universal but are manifested differently based on varying conditions (Kitchin & Tate, 2013). This method is comprised of variables that can be used to collect qualitative information through informal discussions and unstructured or structured interviews, explanatory studies of cases or incidents and observational procedures (Ahmad et. al, 2019). These approaches, when employed, unveil rationales or causes through narratives and/or statistical information, whereas impacts of certain changes or reformations can be recorded through numerical data only (Brannen, 2005). Qualitative information can depict the experiences and conditions of occupants or users and practitioners simultaneously revealing the impact of reformed safety regulations on the industry. While quantitative information may display trends, qualitative data offers justification but is often considered to be less reliable as it is perceived as the researcher's interpretation of outcomes (Jones, 2004). Therefore, for

the assessment of regulatory reformations and allocation of responsibility where the validity of qualitative information can be attained through data-driven strategies, combining the two research methods is more practical.

Instead of considering qualitative and quantitative methods as contrasting methodologies, they can be regarded as complementary and, if utilised in situations like critical junctures, can aid triangulation of findings, which can encourage greater consistency and facilitate comprehension of complex conclusions (Grossoehme, 2014). In this study, where the intent is to examine the modified building safety regulations implemented in RMG factories of Dhaka and the extent to which the current regulatory regimes deliver sustainable building safety within workplaces, the assessment of the controls requires a shift from a numerically dominated issue to a more holistic comprehension of wide-ranging outcomes. Combined methodologies incorporating both qualitative and quantitative approaches are more suitable for this research and hence have been applied in this study.

5.2 Theoretical and Conceptual Context for the Research

According to Kumar (2019), theoretical research is one of the preliminary undertakings in gathering knowledge, commencing with reviewing existing literature relevant to a similar field of interest to identify and understand the scopes researchers have covered on the particular subject. Theoretical and conceptual studies of safety, role, responsibilities, governance, and critical junctures in policy development were included in the literature review as they contribute significantly to framing the research questions. Findings from the literature review serve to reinforce the theoretical roots of the research; establish the contextual background; formulate the selection criteria of the cases studied; and additionally guide in developing questionnaires and formulating designing methodologies. In the advanced stages of the research, a sound literature review can help in incorporating the knowledge gained from findings of the study into the existing body of studies representing mainstream research (Schwarz et al., 2007).

Literature on relevant themes available in the form of scholarly publications such as books and journals, dissertations and technical reports, and grey literature including local publications and magazines, newspaper articles and

media scans was examined. This informed the field of study and the design of the surveys. The literature review was initiated with the queries that had arisen about the field of investigation limited within the scope of the study. For instance:

- What has already been conducted on the topic?
- Who were the key researchers or theorists?
- What are the principal theories and hypotheses surrounding the focus area?
- What are the prevailing concerns or issues regarding the area of interest?
- What strategies have been adopted or what methods are appropriate and applicable?

The literature review for this research assisted in detecting the primary areas of the study by providing an overview of the issues of the garments manufacturing factory buildings of Dhaka starting from structural, design-related, operational, and ethical issues. Reviewing literature facilitated defining and comprehending the fundamentals of building safety and sustainability theories, governance, responsibilities of professionals and regulations. It also supported comparison and examination of the working conditions, practices, perceptions, safety quests and regulatory laws and their modifications in the globalised RMG industry of Bangladesh. Much of the literature review covered how the country's garment industry—a product of globalisation—established itself and was simultaneously challenged with safety related issues as it strove to meet demands from developed countries. The thesis is designed to bridge the gap between the reformed regulations following the major building tragedies and the current steps taken to enable the RMG industry to be sustainable. The literature review:

- founded the platform for fieldwork
- informed the design of interview questions and survey questionnaires
- established the criteria for selecting the incidents to study

- and supported critical evaluation to reach conclusions regarding building safety regulations and assess the industry's potential to be sustainable.

5.3 Rationale for Empirical Research

The intent of this thesis is to investigate if the RMG sector of Bangladesh has learnt from its disastrous experiences in the past and whether the lessons are being implemented so that the garment manufacturing factories operate safely, and for the industry to be sustainable. Empirical methods typically involve the systematic collection of information and/or examination of data as the mode to acquire knowledge and are employed to achieve research objectives and yield reliable findings (Dan, 2017). Originally, this approach was equated with quantitative measures (such as analyses and surveys) and collection and evaluation of primary data (Bavelas, 1995). But recently, secondary analyses and qualitative research have also been categorised as empirical methods (Dan, 2017). Empirical study commonly constitutes the theoretical roots of the research, observations to address and record facts, information from incidents that can be directly or recurrently noticed, and conclusions derived from theories, observations, and facts (Robson & McCartan, 2016).

The empirical method has been adopted to examine the two most fatal RMG factory incidents in the Dhaka region to identify the causes objectively and scrutinise the effectiveness of reformations in preventing building disasters in the future and sustaining the industry. The investigation seeks to comprehend, document, and evaluate the rectifications implemented to ensure safe workplaces. A detailed representation of the purpose of the empirical research follows.

5.3.1 Relevant Tools for Empirical Research

Data collection is a vital part of an empirical study. It means to obtain reliable evidence that serves to answer all questions that have been formulated for this study. The data collected can assist in drawing inferences and make factual conclusions. The two broad categories of data collection are primary data collection and secondary data collection, which are both used in this

research project, as explained earlier (Guba & Lincoln, 1981). Primary data collection involves qualitative and quantitative methods which have been discussed earlier, and secondary data collection is those from existing documents such as books and journals. Primary data collection tools include interviews (including structured, semi structured, or unstructured interviews), surveys (including questionnaires), reporting observations and such other processes (Gaskell, 2000). These tools have been employed in this study. The triangulation method is also used to strengthen the validity of findings as it allows researchers to combine theories, methods or observations made in a study to overcome any fundamental biases that may arise from the implementation of a single method or a single perception. Triangulation can assist in the exploration and explanation of complex human behaviour and can be used in both qualitative and quantitative research (Noble & Heale, 2019).

5.3.2 Secondary Source of Data Collection. Arrangements were organised with interviewees and management of factories as per their availability and convenience for the purpose of collecting secondary data and for providing field support.

Literature Review and Desktop Review. The literature review covered books, publications, scholarly articles, and other sources relevant to the specific subjects of the thesis, research scope and concepts. The review gathered explanations and descriptions, and the information derived was critically evaluated to address the research problem. Similarly, the desktop review served an important role in assessing information and providing a foundation for the study. Information gathered from the thorough scan of literature and analysis of existing data was collated to increase the rigour of the research.

Table 5.2

Objectives and Tools for Data Collection

No.	Objectives of the Study	Data collection/interpretation tools
1.	<p><i>To establish an understanding of the significant issues that jeopardise safety within Dhaka’s RMG factories leading to building hazards.</i></p> <ul style="list-style-type: none"> • Comprehend the theories for safety within workplaces, its impact on the overall built environment and an industry’s dependence on it if it is to sustain. 	<p>The literature review focused on academic journals, publications, etc. to provide a theoretical and case-relevant frame of reference.</p>
2.	<p><i>To grasp the methods and strategies adopted by the key actors for collaborative safety practices.</i></p> <ul style="list-style-type: none"> • Level of interaction between the workers and stakeholders • Assess the effectiveness of regulatory modifications resulting from the critical junctures within RMG factories in the aftermath of major building disasters. • Level of awareness regarding building/workplace safety among the key actors involved with the RMG industry. 	<p>The desktop review-served as an entry-point into understanding the context of the particular RMG market and summarise the available disparate types of information.</p> <p>Study of the two worst cases of factory disasters.</p>
3.	<p><i>To address, investigate and document the factors influencing ethical safety practices and implementation of regulations.</i></p> <ul style="list-style-type: none"> • Examine the existing and reformed regulations and the roles of practitioners. • Assess the effectiveness of regulatory reforms and map the perceived allocation of responsibilities among key players related to delivering safety within garment factory buildings. 	<p>Questionnaire survey of 60 students, 50 workers and 70 individuals from Dhaka’s civil society who are experienced or familiar with the RMG sector.</p>
4.	<p><i>To formulate a methodology to assess to what extent each actor was involved in during the past building tragedies and how effective the corrected strategies may prove to be to prevent human errors contributing to building accidents.</i></p> <ul style="list-style-type: none"> • Form an analytical framework to evaluate the safety reformations. • Critically investigate how responsibility for ensuring, and implementing safety measures and preventing disasters in the future has been allocated among the primary actors. 	<p>Interviews with 30 actors- practitioners, regulators, educators, factory owners and global partners.</p>

Selection Criteria for Studying the Two Factory Building Disasters. The selection criteria for the cases include:

- the garment manufacturing factories being within or near Dhaka region, the city where the garment manufacturing industry had been initiated and later expanded just to its peripheral regions and a few other cities (Morshed et. al, 2017);
- the factories were part of the global production network (RMG); and
- Tazreen and Rana Plaza are two of the worst building disasters to have occurred in the country until now.

The analysis of the two cases of RMG factory disasters follows Yin's (2018) descriptive and explanatory research approaches. As such, this study does not employ case study research, the purpose of which is to recommend theoretical relevance in addition to providing descriptive information about a phenomenon or entity. The two specific cases have been studied covering primary aspects of the RMG factory disasters to establish the context for critical junctures in safety regulation policy development. Both Tazreen Factory and the Rana Plaza incidents denote critical junctures when the status quo of the country's RMG industry was challenged. This approach also aimed at understanding the circumstances that led to global intervention in the regulatory regime in reaction to the two garment factory disasters.

Document Analysis. Secondary information on both Tazreen Factory and Rana Plaza was obtained from available online documentation of the incidents and through interviews with experts and rescue volunteers. The relevant information collected was in the form of figures, tables, reports, industry details, archives, feedback of professionals, and online photographs and drawings. These documents that are related to policies, regulations, experiences, and expert opinions were analysed to explore the context, reform pattern, goals and objectives, regulator involvement and contribution; worker engagement approaches, and future projections regarding the workplace environment. Media scrutiny after the two tragedies was also considered, to identify third-party perspectives.

According to Robson and McCartan (2016), when undertaking analysis of a document, it is essential to identify its context, establish who it has been composed by, and its purpose. The intention of document analysis was to develop a framework for comprehending the findings of the surveys and to outline essential information for conducting a comparative evaluation of the perspectives of practitioners and general people. The documents also provided crucial information about building incidents which was integrated to strengthen the research and support the implications of the study. The findings acquired from the analysis of documents informed the design of the surveys and guided the comparison of published information with existing facts, forming part of the triangulation method, and enhancing the reliability of the research.

5.3.3 Primary Source of Data Collection

As briefly described earlier, primary data collection provides crude information and direct evidence in the form of interview transcripts or statistical data. It connects the researcher directly with the subject of study. Qualitative data collected through interviews and statistical findings` from questionnaires may be used together in the mixed method approach. While questionnaires can be used to procure evidence from a large number of respondents, interviews often provide profound insights on behavioural patterns, views and actions (Harris & Brown, 2010). In addition, on-site observations aid in providing a personal perspective. The following sections describe the steps that were used to carry out primary data collection in this study.

Factory Visits and Surveys. Several factory visits were organised according to the availability of the factory managers to obtain an overview of the workplaces. Nine factories were visited for workers' surveys. They were selected randomly through snow-balling method using the directory of RMG Exporters and Suppliers in Bangladesh. The application of this method involved the generation of a pool of participants for the study through referrals or recommendations made by individuals who shared similar expertise or interest that this research sought. The criteria for selection of the factories were that their location was within the Dhaka region and that they

were involved in the global supply network. The managers were initially contacted via telephone or email, and once they had given verbal consent, they were emailed the research information sheet. An appointment to visit was scheduled at the convenience of factory authorities. A research assistant based in Dhaka was appointed to conduct the factory visits and surveys as the researcher could not travel to Dhaka owing to COVID-19 restrictions. As instructed, the research assistant noted the responses from the RMG factory workers to queries on regular safety practices and how they assessed the general compliance level of their workplaces (e.g. fire exit doors being locked, landing areas used as storage, and safety drills).

The empirical procedure of the study included interviews and surveys. Primary data was collected through fieldwork that comprised interviews of resource persons, and three surveys among factory workers, students and civil society of Dhaka.

The following section describes how these methods were carried out for data collection.

Surveys. This approach served to derive quantitative data from a pool of respondents and identify some initial safety issues that could later be compared with some other data collected through the above-mentioned approaches.

Interviews. Specific groups of actors were interviewed to understand how responsibility for implementing, practising, and regulating building safety is allocated. This approach assisted in collecting data, gathering information, and comprehending the concepts related to building safety within the country's global supply network.

5.3.4 Data Management and Analysis

The data collected from the workers' and students' surveys and professionals' interviews were categorised for investigation by means of qualitative and quantitative methods appropriate to the information. Close-ended questions requiring respondents to select answers from sets of options provided were mainly used for statistical analysis using averages, percentages, and multiple-response frequencies. Graphical illustrations are

presented through bar diagrams, line charts and pie charts and are used to depict the findings. Presenting the numeric data as graphical, illustrative data helps readers to comprehend the distribution and trends comfortably. These quantitative results have been merged and re-interpreted using empirical evidence relating to the incidents studied and supplemented with the information gathered through surveys and interviews.

5.3.5 Triangulation of Data

Triangulation is expressed as the amalgamation of various techniques of collecting data in the study of similar phenomenon (Minichiello, 1992). In this study, triangulated data was drawn from primary and secondary data, surveys, and interviews. No technique is considered superior or more thorough in the triangulation of methods, as each has its own strengths and limitations. This research has utilised some techniques as primary sources and some as secondary sources and both were employed to cross-examine the validity and reliability of data obtained. Triangulation of data strengthened the credibility of the research findings and demonstrated the researcher's unbiased viewpoint. Open ended questions were designed to draw information from the informed participants (actors) who could corroborate information derived from the literature review. The following section elaborates the approaches and tools implemented in reaching the goals and objectives of this research through triangulation of data and findings.

5.3.6 Interviews of Actors

After in-depth observation and identification of the key actors withing Dhaka's RMG industry by the researcher, they were categorised under five groups.

- *Practitioners*: comprised of architects and engineers, most part of professional institutes, as they play a key role in designing and establishing the city's built environment.
- *Regulators*: regulating or monitoring bodies who are authorised to maintain aspects of compliance within the built environment.
- *Owners*: garment factory owners who are responsible for safety and production planning of the global RMG manufacturing and supply

chain network to ensure safe working conditions for the workers they employ.

- *Educators*: learned individuals who are responsible for providing knowledge on building safety under relevant disciplines such as planning, architecture, or engineering.
- *Global Partners*: international/foreign partners who are either buyers or associated with organisations like the International Labour Organisation (ILO) overseeing worker welfare.

Question Design for Interviews. Designing a set of questions involves addressing the research problem, the objectives, and the data analysis methods. Outlining the questions is the core part of the data collection method (Baker, 1997), in which “what” relates to the topic the study is referring to; the issues guiding the interview; the focus of the questions; and the specific information communicated by the participants (Gubrium & Holstein, 2002). A structured arrangement of questions is essential for the participants’ flow of thoughts and for the researcher to gather maximum information within the limited timeframe.

Based on literature review, observations and the contextual aspects of Dhaka, few broad divisions were outlined. The questions formulated for the interviews (see Appendix 1) were divided into six categories to address the research question corresponding to the objectives of the thesis as outlined below.

- **Building Safety Information**: building safety practices and workplace safety operations within RMG factories within the region of Dhaka as adopted and/or understood by practitioners, owners, regulators and other stakeholders.
- **Compliance Information**: regulatory practices, safety measures, and monitoring within RMG factories as conducted by practitioners, owners, and stakeholders.
- **Safety Regulatory Reformations after the two worst RMG factory disasters**: the comparison and transformation of regulatory bodies, amended regulations and their impact after Tazreen and Rana Plaza disasters.

- **The Trend of Blame Game:** the level of accountability among the actors for past RMG building tragedies.
- **Allocation of Responsibility:** how responsibility is allocated among the involved actors to ensure safety within Dhaka's RMG workplaces.
- **Effectiveness of Foreign Regulatory Regimes and Current Regulators:** the impact of the foreign intervention in regulatory regimes in taking corrective safety measures and the possibility of the reformations to sustain safety practices within the RMG factories.

The interviews comprised both open-ended and close-ended questions. Open-ended questions are usually used when there is an intent to discover while close-ended questions are targeted towards reaching a conclusion already having an existing, preconceived idea about the facts. The former manifest the respondents' opinions and the latter provide limited choices for more specific responses (Taylor- Powell, 1998). The intent behind the types of questions used in the interviews were as follows:

- The opening question, or "ice-breaker", specifically related to an actor's expertise/ background.
- A set of common questions presented to all actors explored opinions and viewpoints aligned with the research questions.
- Questions seeking further insight into certain aspects of building safety regulations and/or their implementation in RMG factories were asked of selected actor groups who have direct experience and knowledge of the particular issues involved.

Matrix for Allocation of Responsibility. In addition to open and close-ended questions, a matrix was used for data collection through interviews. A matrix was provided to the interviewees only and not to survey participants (workers, students and civil society) to determine more factual data based on knowledge or direct professional expertise on specific aspects of building safety. Workers, students and members of civil society may have responded solely from perception or opinion, which was not intended. As Choguill (2005) suggests, a matrix compels the researcher to ponder the rationale of the proposed study, ascertaining that the various components of a research link together in a reasonable way and that no essential elements of the study are

overlooked. The matrix was presented to all interviewees so that the opinions of each group on a particular aspect could be compared with those of other groups.

Table 5.3

Matrix for Observation Allocation of Responsibility

Matrix for Allocation of Responsibility					
Key Actors	Creating Building Safety Awareness	Implementing Building Safety	Ensuring Compliant Behaviour	Preventing Future Building Disasters	Who tends to perpetuate the Blame Game for past incidents?
Educators					
Practitioners					
Regulators					
Owners					
Global Partners					
Students					
Workers					

Note. Source: Author.

The following describes the methods for selecting the interview participants.

Selection of Interview Participants. Each group of professionals was chosen on account of the group's specific expertise and disciplinary focus and background, and the role they perform regarding building safety regulations within Dhaka's RMG industry. Thirty interviews were conducted in total.

1. Seven practitioners were selected, including architects and engineers who were shortlisted from professional institutes- the Institutes of Architects and Engineers of Bangladesh (IAB and IEB). The selection criteria included involving practitioners who had expertise or experience in designing garment manufacturing factories located within the Dhaka region. Practitioners' work profile or prior knowledge (since the researcher is from same background) and snowballing were used to select architects and engineers from different age groups (between 30 and 65 years) who would be able to assist through their participation in interviews.
2. Six regulators were interviewed from different regulatory bodies like RAJUK, Department of Inspection of Factories and Establishments (DIFE), the Accord, the Alliance, and RMG Sustainability Council (RSC). The participants were selected through each agency's directory, the snowballing method, and through professional and academic contacts.
3. Six educators from different age groups (between 28 to 60 years) participated in the interviews. They were selected, using the snowballing method, from the researcher's former teachers, associates, and professional contacts. Although the educators were randomly selected from both government and private universities, the criterion was that they were teaching in fields relevant to the built environment such as architecture, engineering, or planning.
 - i) Six RMG factory owners were interviewed. Their contact details were collected from the RMG Exporters and Suppliers in Bangladesh and through the snowballing method. The criteria for selecting the RMG factory owners ensured that they were

operating within the global supply chain network and their factory was located within the Dhaka region.

4. Five global partners including representatives of foreign buyers (H&M and Zara) and members from the ILO (fire engineer and advisor) were interviewed. These participants were selected through the snowballing method and the criteria for selecting ensured that they are involved within the Dhaka's RMG supply chain network.

The process followed for conducting interviews is shown in Table 5.4.

Data were acquired through mixed methods at various phases of the research within the stipulated timeframe. The mixed method facilitated the collection of a wide range of participants' perceptions regarding building safety.

Table 5.4*Interview Process for Actors*

Steps	Methods
Phase 1: Approval for Interviews of Participants	<ul style="list-style-type: none"> • Shortlisting • Contact with the participants via email or phone call for explaining the significance of their contribution in the research as mentioned in the Recruitment Form • The Participant Information Sheet also provided via email.
Phase 2: Consent for Interviews	<ol style="list-style-type: none"> 1. Consent Form sent and signed by each participant A copy of the questions also provided to the interviewees to give a rough idea about the information the research sought 2. A date and time scheduled for online interviews
Phase 3: Discussion of Interview Findings	<ul style="list-style-type: none"> • Interviews transcribed, information and data received transcribed • Findings discussed and conclusions drawn from feedback received from interviews • Recommendations made on the basis of observations.

Surveys of Workers, Students and Civil Society. Surveys were conducted among three groups after carefully observing and identifying the groups whose views would help to make conclusions.

Workers. Factory workers play a significant role within the garment industry. Although they have very little to do with the establishment, maintenance, or operation of factories, they are the ones who are most impacted and affected by unsafe working conditions. Building disasters have cost more lives of workers than of any other actor serving in this sector.

Students. Students were selected as they are the future professionals who may serve as architects, engineers, planners, educators, regulators or even factory owners. Only students of the disciplines of architecture, engineering, or planning were chosen to be surveyed so that they gain an awareness of building safety and make observations about their curriculum from their understanding of compliance.

Civil Society. This survey was designed to be conducted among the local people of Dhaka who are experienced, involved or familiar with the RMG sector either through practice, profession, employment or education, to gather an overall impression of the opinions of educated/concerned citizens of Dhaka. They were chosen randomly from NGOs, governing and regulatory bodies, professional institutes and RMG manufacturing and exporting associations.

Recruitment of a Research Assistant. Owing to the pandemic restrictions and travel ban, the surveys were carried out by a Research Assistant residing in Dhaka. The criteria for selection included the individual being an architect or a student of a similar discipline so that the concepts relevant to the built environment would be easily understood, enabling the interviewer to extract useful information from the respondents. Through a post on social media, interested individuals fitting the given criteria were requested to contact the researcher via email. The most suitable candidate was selected.

Question Design for Surveys. The surveys were intended to investigate the level of concern and awareness regarding workplace safety among workers; the extent to which knowledge of building safety had been provided to the students of relevant academic fields; and to observe the perceptions of building safety held by general civil society of Dhaka. The queries primarily concentrated on safety issues within the workplaces of RMG factories in both the past and present. The following sections elaborate on the processes involved in data collection through survey.

Data Collection from Factory Workers. The objective of conducting the surveys was to verify the extent of satisfaction among factory workers regarding safety within their workplaces and their overall perception on building safety of the RMG factories.

Fifty RMG factory workers from nine different manufacturing factories (the same factories used for workers' surveys) within the region of Dhaka were randomly selected from the directory of RMG Exporters and Suppliers in Bangladesh. The criteria for selecting the RMG factories ensured that they were operating within the global supply chain network and were located within the Dhaka region.

All surveys among the factory workers were conducted by the research assistant as instructed by the researcher. Local COVID-19 guidelines that were in place in Dhaka at the time were strictly followed. The Participant Information Form, Recruitment Form and Questionnaires were all translated into Bangla as the survey involved factory workers, most of whom have limited literacy or are illiterate, or are unable to communicate in English as it is not their mother tongue and a secondary language in Bangladesh.

Data Collection from Students. The surveys were intended to investigate the extent of knowledge on building safety provided to the students of relevant academic fields who are the future practitioners of the country. Only those students enrolled in the disciplines of building design or civil engineering were surveyed. The participants varied from being first year to final year students. The students responded online through a Google form as all education institutes in Dhaka were closed during the time of the survey owing to COVID-19. Through academic associates and using the snow-

balling method, 60 students from seven institutes in Dhaka were contacted online and selected on a “first-come-first-served” basis.

The integration of the data collected from the surveys with the responses of the owners and educators through the interviews proved beneficial in developing a comparison and identifying the gaps between employers and workers, and educators and students regarding implementation of safety and delivering knowledge on building safety designs.

Data Collection from Civil Society of Dhaka. A total of 70 inhabitants of Dhaka who are involved or familiar with the RMG sector, either from experience or employment, took part in a survey conducted to make broad conclusions regarding safety awareness and views on building safety among citizens in general. This group comprised representatives of civil society of Dhaka including eight (8) individuals working with NGOs, two (2) associated with the ILO, ten (10) from the IAB and ten (10) from the IEB and forty (40) from regulatory agencies (Accord, Alliance, RAJUK, BGMEA, BKMEA and Bangladesh Government) in Dhaka.

Table 5.5

Survey Process

	Workers	Students	Civil Society
Phase 1: Approval and Consent	<ul style="list-style-type: none"> • Factory managers were contacted for permission via email or phone call for explaining the significance of their contribution in the research as mentioned in the Recruitment Form. • Participant Information Sheets were provided. • Translated form provided for workers. • Workers randomly selected as per their willingness to participate. They were previously informed through management and given a rough idea about the intent of the survey. • The information sheet was translated into Bangla language for the respondents, read, and carefully explained. • Respondents were informed that their participation was entirely voluntary and the questions were asked only when the respondent consented verbally. 	<ul style="list-style-type: none"> • Online contacts were made through snowballing and academic relations. • Participants were provided with an Information Sheet via email. • Students were randomly selected on a first-come-first-served basis as per their willingness to participate. • Recruitment and Consent forms were emailed. 	<ul style="list-style-type: none"> • Communication was undertaken online through snowballing and associates in Dhaka. • The Information Sheet was emailed to participants. • Participants were randomly selected on a first-come-first-served basis according to their willingness to participate. • Recruitment and Consent forms were emailed.

	Workers	Students	Civil Society
Phase 2: Conducting Surveys	<ul style="list-style-type: none"> Interested workers were randomly shortlisted to respond to the questionnaire. Those capable of reading and writing filled out the questionnaires on their own after distribution. The research assistant read out each question to others, and workers' responses were noted on the questionnaires (See Appendix 1). The targeted sample size was reached using the same approach. 	<ul style="list-style-type: none"> Upon obtaining consent, a link for the online Google questionnaire was provided Data was collated from responses. 	<ul style="list-style-type: none"> Upon obtaining consent, a link for the online Google questionnaire was provided Data was collated from responses.
Phase 3: Discussion of Survey Findings	<ul style="list-style-type: none"> The information and data received was summarised. Discussion of findings analysed and conclusions drawn from feedback received from the survey. Recommendations made on the basis of observations. 	<ul style="list-style-type: none"> The information and data received was summarised. Discussion of findings analysed and conclusions drawn from feedback received from the survey. Recommendations made on the basis of observations. 	<ul style="list-style-type: none"> The information and data received was summarised. Discussion of findings analysed and conclusions drawn from feedback received from the survey. Recommendations made on the basis of observations.

Note. Source: Author.

5.4 Ethical Considerations

The procedure selected for research was based on the principles and guidelines of the Ethics Form A (Application for Ethical Approval of a Research Project Involving Humans), approved by the Human Research Ethics Committee (HREC) of Curtin University which promotes research undertaking a rational and ethically enhanced approach and being respectful of all customs and cultures of the community. Approval of the field survey protocol was obtained from the committee prior to any engagement with the participants. Simultaneously, consent of the interviewees and participants was obtained via emails and was physically attained from some (of workers and students), with the help of a research assistant for the collection of secondary data. The interview questions investigating various aspects of the issues highlighted in the research questions were approved by the HREC of Curtin University (HRE2020-0743). The research information sheet, semi-structured interview questions, and the research brief were also submitted to the participants to communicate the research aim and objectives, requirements and procedures.

Research concerning humans as participants is to be in compliance with the current Australian ethical standards set by the National Health and Medical Research Council (NHMRC) and National Statement on Ethical Conduct in Human Research. It is obligatory to receive approval from the HREC of Curtin University prior to commencing the research to confirm that the researcher abided by the regulations and maintained the standards by using proper procedures. According to HREC (2013, 3):

The aim of ethical review of human research is to ensure that participants in research are not at risk of harm, are not disadvantaged and made aware that they may withdraw without prejudice. Broadly, the process of ethical review concentrates on three main areas: a) gathering informed consent to participate in research projects b) protection of privacy and confidentiality of records and c) risk of harm to subjects or groups in the community.

As this research involves human respondents for survey and interviews, ethics approval (HRE2020-0743) was acquired from Curtin University. The researcher was aware that surveying compliance aspects or safety practices would raise ethical concerns relating to the right to privacy, nature of data collection, the requirement for consent and the requirement for information. The following tasks were conducted in accordance with the ethics guidelines advised by HREC, Curtin University:

- Consent from each of the interviewees was obtained in advance. An outline of the study with the working title, research goals, research questions, and purpose of the research were communicated, and additional information that further communicated the intent of the study was also delivered when requested.
- The information sheet was sent to each of the participants, inviting them to contribute to the research through their participation in the interviews.
- For the factory surveys among workers, the research assistant read out the information sheet first in the national language Bangla (see Appendix 1) as the factory workers mostly have received no or very limited formal education. The information sheet was further explained to provide a clear understanding of the purpose of the survey so that the participants would have clarity on the information being sought. The participants were also informed that their participation was voluntary and only after each participant had verbally consented, were the questions asked.
- The students surveyed were enrolled in institutes that provide education in architecture, engineering, or other disciplines related to building design or structure. Since the survey was conducted online through a Google Form. The participants were emailed the information sheet and provided with an overview of the study. They were informed that their participation was voluntary, and after they had consented via email, they were provided with the link to the Google form.

- The secondary data was collected through publications and from databases accessible by the public such as newspaper articles, websites, and online news.
- The information collected through the surveys and interviews did not interfere with any participant's privacy or pose a threat to any individual.
- The respondents were assured that they would remain re-identifiable or non-identifiable. All responses from the interviews were collated and only aggregated conclusions were delivered, ensuring complete anonymity of respondents where applicable.

Table 5.6 *List of Key Respondents of Surveys and Interviews*

Type of Respondents for Interviews	Number of Actors Interviewed
Practitioners (architects, engineers)	7
Regulators	6
Factory Owners	6
Educators	6
Global Partners	5
Total	30
Type of Respondents for Surveys	Number of Participants Surveyed
Factory workers	50
Students	60
Civil Society	70
Total	180

5.5 Data Storage

All materials collected from the surveys and interviews during the research were preserved safely with only the researcher and supervisors having

access to the findings. This material will be securely stored for the next seven years after completion of the dissertation.

5.6 Chapter Conclusion

This chapter on research methodology elaborated the research strategies, preliminary research ideas, methods of data collection and approaches implemented in the thesis. A mixed approach combining both qualitative and quantitative methods was applied within the theoretical framework of the investigation and secondary data, was collected to analyse the context of the disasters in question. Random and purposive sampling were employed for surveys and interviews to collect information on the issues. The triangulation method was used for rationality and validity of the collected data. Graphical illustrations expressed the findings visually along with study of the cases and their outcomes in Chapters 8 and 9.

The following sections of the thesis will present the findings revealed through the methods discussed previously that assisted in reaching the aim and objectives of this thesis.

Chapter 6: Studying the Tazreen Factory Fire and the Rana Plaza Building Collapse

About a century ago, an appalling fire incident devastated the Triangle Shirtwaist Factory in New York, U.S.A., taking 146 lives, mostly newly migrated Jewish or Italian women. The aftermath saw recommendations on a raft of statutory applications and the enactment of about 60 new legislative reforms to improve building regulations, apply fire prevention measures and establish rules for work hours (Havel, 2013). In comparison, both global and local responses to the tragic factory incidents in Bangladesh were slow. This is despite the fact that over a period of 20 years, almost three hundred lives had been lost to factory building tragedies, losses which perhaps appeared insignificant until the two disasters, the Tazreen Factory and the Rana Plaza occurred.

There are more than 4,000 RMG factories in Bangladesh, directly employing over 4.5 million people and consistently maintaining the industry's dominant share in the country's economy (CCC & Maquila, 2013). The RMG industry is a vital contributor to the country's prosperity and all threats concerning this sector will be reflected on the economy and could impact the overall welfare of Bangladesh. Even during the global recession in 2007–2008, the garment industry's resistance proved exemplary and retained its robust income (BILS, 2015). Bangladesh has also been proudly catering to global events like the FIFA World Cup and others (Reza, 2014) and others.

On the flip side, the RMG sector also has its issues. There has been rigorous strife for decades within the country's garment manufacturing industry as the workers demanded acceptable wages, workplace safety and freedom of association. These demands remained unfulfilled. Protests and riots were opposed by police forces or management repression (Manzur, 2016).

Researchers observed that low wages, unsafe working conditions, inadequate training methods and other issues made Dhaka's RMG sector one of the riskiest and most hazardous workplaces (Mahmood et al., 2021). Solaiman (2013) reported that prior to the two major building tragedies in the region, at least 33 major fire incidents had occurred between 1990 and 2012,

costing almost 500 lives. Some of the deadliest incidents in the country reported by Solaiman (2013) include:

- i) 1990: Sareka Garments, Mirpur (Dhaka), 27 deaths
- ii) 1997: Tamanna Garments, Mirpur (Dhaka), 27 deaths
- iii) 1997: Rahman and Rahman Apparels, Mirpur (Dhaka), 22 deaths
- iv) 2000: Chowdhury Knitwear, Narshingdi (outside Dhaka), 53 deaths
- v) 2004: Narshingdi Garment factory, Narshingdi (outside Dhaka), 48 deaths
- vi) 2005: Sun Knitting factory, Narayanganj (outskirts of Dhaka), 20 deaths
- vii) 2006: KTS Composite Textile Mills, Chittagong (another prime industrial city), 65 deaths
- viii) 2010: Garib and Garib factory, Gazipur (outskirts of Dhaka), 25 deaths
- ix) 2010: Hameem Group factory, Ashulia (outskirts of Dhaka), 31 deaths.

Although Bangladesh had been making gradual progress on several compliance issues such as regulation against prolonged working hours and child labour, the RMG industry received its wake-up call for ensuring safety in terms of structural accuracy and fire protection through two major industrial catastrophes—the Tazreen Fashion fire incident in 2012 and the Rana Plaza building collapse in 2013 (BILS Journal, 2018). These two incidents have been the worst of the RMG industry's challenges faced by safety regulators. The following ripple of events may be referred to as "critical junctures" that is described as relatively brief periods of time during which the choices made by those involved have a high probability of impacting an outcome of interest. This phase of juncture is often short in comparison to the process it activates (Capoccia & Kelemen, 2007). This description also suggests that choices made during critical junctures create a status quo which is qualitatively dissimilar from the "normal" or expected development of institutional interest (Hogan, 2006). In an article by Hossain (2019) on how disaster politics has played out in the history of Bangladesh, the Rana Plaza incident was explored as a critical event in the politics within the RMG sector which instigated a shift in power relations that enabled workers to insist on their rights.

While many researchers have been pointing out the high susceptibility of building structures to earthquakes and other natural hazards, it is the human-made disasters in RMG factories that sparked debate, research, and action in Bangladesh. This section of the research elaborates on the controllable human errors surrounding the two worst, possibly preventable incidents (revealed through research findings in Chapter 8), and examines the underlying issues within the workplaces of the manufacturing factories (Chapter 8 & Chapter 9). The chapter identifies the main causes that led to the building hazards, the aftermath and most importantly ascertains whether they remain as threats within Dhaka's RMG factories.

6.1 The Two Worst RMG Factory Disasters

Fire accidents had been an issue in Dhaka's RMG industry since the 90s, probably as a result of its very rapid unplanned growth and the congestion of workplace structures which continued to take hundreds of workers' lives every year, most of whom were women and children (Karmaker et al., 2019). Between 2001 and 2007, Dhaka experienced 6,454 fires that caused property loss of US\$45 million. During the period of 2013 and 2015, a total of 908 workers were wounded and 31 died because of fire explosions (Hasan, 2016). Almost 94% of these disasters were found to be caused by fire, 3.03% by building collapse, and the remaining by other factors (Anitha & Begum, 2016). A number of schemes and initiatives were undertaken to curb the frequency and severity of fire accidents. However, according to a 2019 media report (Dhaka Tribune), there had been more than 16,000 fire incidents around the country in a decade, 80% of which were related to export-related factories. Fire hazards continue to threaten the industries as well as residential and commercial buildings of Dhaka.

6.1.1 The Tazreen Fashion Factory Fire, 2012

The most tragic of these fire incidents in the country's history took place in the Tazreen garment eight storied factory building with three of the top floors under construction. The building was owned by Tazreen Fashions Ltd, a subsidiary of the Tuba Group, a prominent garment exporter of Bangladesh (Alamgir & Banarjee, 2019). The factory commenced operation in May 2010,

employing around 1,500 workers with a sprawling area equipped with 12 production lines and 650 sets of machinery. It soon flourished, making sales of about US\$35 million annually from exporting clothing items such as t-shirts, fleece jackets and polo shirts to their clients including Walmart, Kmart, Li and Fung and others (Chowdhury & Tanim, 2016).

Structural Description: The factory sprawled across an area of 12,240 square metres in total with each floor being around 1,500 square metre and appearing to be well-ventilated with large glass windows (Gopinath & Choudhury, 2015). However, it was later discovered that these windows had been bolted permanently with iron frames from the inside leaving no scope for ventilation or escape. Moreover, the upper two floors were not in use and were padlocked, making them inaccessible. It was therefore impossible to reach the rooftop (Hasan et al., 2017). The building had only three staircases and it was found after the fire incident that many of the workers who died were unable to escape because of an inadequate number of fire exits and other emergency facilities. Lack of sufficient staircases also made it challenging for firefighters to reach close to the affected areas with their equipment (Azad et al., 2018).

Description of the Incident: The fire originated on the ground floor that was a factory storage space for yarn, which allowed the fire to spread quickly. The yarn had been illegally stocked and not confined within a fireproof warehouse as required by law (Tazmul et al., 2018). The fire alarm alerted the occupants on the second, third and fourth floors around 6:45 pm on the day of the incident. The blaze seemingly started from a short circuit and spread upwards swiftly within minutes, owing to the presence of flammable materials contained on the windowless ground floor (Sumon et al., 2017). Panic-stricken employees of the factory attempted to escape down the stairways when they were summoned to return by the managers who claimed it was a false alarm. Soon after the lights went out, dense clouds of smoke filled every corner of the multi-storied factory trapping hundreds of workers inside (Gopinath & Choudhury, 2015). However, the workers soon realised the severity of the situation and rushed towards the exits only to find them locked from outside. Using the staircases was not an option as they led to the

ground floor where the situation was worse. As the fire engulfed their workplace, some workers attempted to escape by either jumping off the building or climbing down the scaffoldings (Hasan & Mahmud, 2017). The situation further deteriorated when firefighters who had taken over thirty minutes to arrive, failed to find any source of water nearby. They had already gone through the ordeal of reaching the building through narrow lanes as the factory building was located nearly three kilometres from the main road and outside the export processing zone. Eighteen firefighting units struggled for 17 hours to finally extinguish the blaze next day (Islam & Islam, 2021).

The Tragic Outcome: Approximately 117 people died in the Tazreen Fashion Factory fire incident including more females than male workers—some very young, some pregnant. Many bodies having been burned beyond recognition, remained unidentified and unclaimed (Gopinath & Choudhury, 2015). Over 300 workers were severely injured and never managed to go back to work owing to their injuries. Among the few elements that contributed to the massive death toll the main one identified by police investigation was the padlocked collapsible gate, with managers and security guards refusing to let the workers leave the premises. Moreover, the ground floor stocked with inflammable materials had no walls to prevent the rapid spread of the fire (Inkpen, 2013). Fire department officials had provided information that the fire safety license for the manufacturing factory had expired five months prior to the accident in June 2012. Firefighters even reported that during the rescue operation, they had to break locks of the gates that led to staircases (Faruq, 2013). A series of such acts of negligence and human errors, all of which could have been possibly avoided, caused injury and death of hundreds of hard-working people.

Responses: Resulting in the greatest number of fatalities related to fire hazards in the RMG sector of Greater Dhaka, the Tazreen Factory fire incident received remarkable response from both local and international bodies. As the entire nation mourned over the irreplaceable losses, common people, trade unions and organisations, garment factory workers and survivors of the tragedy protested against the unsafe working conditions that led to the tragic consequence (Sumon et al., 2017). The reactions varied

from NGOs to stakeholders, media, civil society and many others. A few of those within the scope of this study are discussed below.

Government: The national authorities endeavoured to take immediate steps and concluded that they found it to be a “sabotage” after investigation and vowed to the victims that the culprits would be brought to justice (The New York Times, 2012). A few ministers announced that factories operating without fire precautions would be shut down. The security guards and managers were arrested within a few days of the incident and a case was filed against the owner (Islam, 2015). The Prime Minister financially compensated the affected families through funds raised from the Ministry of Labour, BGMEA, international buyer Li & Fung and the Banker’s Association of Bangladesh, but as yet no payment has been made by the owner of the factory although it is legally obligatory (Nath, 2019). On the other hand, the Clean Clothes Campaign, European Trade Union, IndustriALL, International Trade Union and UNI Global Unions have insisted that despite the agreement made on a sustainability compact (as discussed in Chapter 4) with the EU after the fire incident at Tazreen, Bangladesh remained in violation of the deal that pledged reformation of labour laws, implementation of freedom of association in EPZ, promotion of labour unions and curtailment of discrimination against unions (CCC, 2017).

BGMEA: The BGMEA urged the investigating government agencies not to conclude that the incident was a “sabotage” and claimed without providing details that the presence of just one emergency exit leading outside the factory would have significantly minimised the total number of casualties (Sumon et al., 2017). The BGMEA was called upon to pay 55% of the compensation to the victims, along with medical costs for treatment of the survivors (CCC, 2017). They took steps to provide aid for treating the injured workers and formed an inquiry committee, however no report on the outcome was submitted. This caused people to even suspect BGMEA’s bias towards the owner of Tazreen factory (Wiersma, 2018). As mentioned at the Boston Global Forum (2013), the BGMEA claimed to be regularly monitoring their member RMG factories for safety compliance but there was no clarity on their findings. After the Tazreen Factory incident that seemingly originated from

illegal storage of combustible materials, BGMEA inspectors monitored some factories for labour and safety compliance. Four of the buildings that had been identified as risky with numerous violations belonged to the then President of the BGMEA (Boston Global Forum, 2014). Such information created a sense of distrust among people, particularly the workers who were possibly hoping for reformations in the industry after the tragic fire.

Owners: The owners of Tazreen Fashions Ltd. and seven other factories at the time of the incident, Delwar Hossain and his wife, denied allegations of negligence and stated that this was the first accident to happen in their factories and that it was an act of sabotage caused by arson (Sumon, 2021). However, the owners themselves were initially suspected of having intentionally set their factory on fire to claim insurance for a financial loss of about U.S.\$128,500. They later admitted to being unaware of the specifications regarding factory building exits (Sumon, 2020). Regardless of these accusations and the culpability of the owners, only the mid-level officials were arrested while the owners remained free for the fourteen months following the tragedy, to then be jailed for less than six months. The couple, along with close associates, continued to operate their chief company Tuba Fashions along with four other garment factories which they owned in Dhaka, while in custody (Thomas, 2019). Probe had also revealed that Delwar Hossain instructed his factory managers to withhold payment from about 1,600 workers to compel them to sign a petition in support of his release (Human Rights Watch, 2015a). When the owners' bail hearing was under way in court, they brought along jerseys of the FIFA World Cup 2014 to emphasise the significance of the industry in Bangladesh. This exhibited their concern for profit over the lives lost (Reza, 2014). Many of the victims still await long-term compensation that had been calculated to be U.S.\$5.7 million (CCC, 2021).

RAJUK/Regulators: The Dhaka Metropolitan Development Plan (DMDP) that is commonly referred to as the city's master plan, does not permit factories to be developed in Ashulia, a suburban area on the outskirts of the capital which has nonetheless developed into an industrial district (Ahmed et al., 2018). Hundreds of industrial organisations, including the fatally fire-

struck Tazreen Fashion House, had been developed in the pastoral areas of Ashulia, violating building code and the DMDP as per official documents (The Daily Star, 2022). These locations that have been included within the jurisdiction of RAJUK since 1987 were allocated for homesteads and agriculture, not industries, as stated by the agency (Hosen et al., 2021). Over 500 RMG factories in Ashulia had neither land-use clearance nor RAJUK's building approval (The Daily Star, 2012). According to the President of the IAB, architect Mubasshar Hussein, Tazreen had grossly violated mandatory safety provisions stated in national building safety codes along with the rules of construction. He also criticised RAJUK, which was responsible for controlling such development in those areas under DMDP, for displaying utter apathy towards their undertakings (The Daily Star, 2022). RAJUK, however, attributed their malfunction in monitoring development outside the central city areas to scarcity of workforce (BILS, 2018).

ILO and other global responses: The organisation promptly responded to the incident and as a part of its agreement with the Government of Bangladesh for immediate and medium-term actions, integrated the National Tripartite Plan of Action (NTPA) (ILO, 2016c) as elaborated in Chapter 3. Funded by Canada, the UK, and the Netherlands, the ILO launched a programme to support the accurate implementation of the NTPA and recuperate workplace environments within the RMG factories. This included building and fire safety monitoring; labour inspection reforms; OHS; rehabilitation and training of the affected people; and the introduction of the Better Work Bangladesh programme (ILO, 2014).

The Triangle Shirtwaist Factory Fire in New York City that occurred on the 25th of March 1911, was the most fatal industrial calamity in the country's history. It killed 146 garment workers (Goldfield, 2007). The incident-initiated improvements in building and fire codes within workplaces in New York and throughout the U.S. and also expanded the union movement among garment factory workers, creating greater awareness about fire prevention issues. In contrast, the Tazreen Factory fire only resulted in appointment of a single commission to monitor thousands of RMG factories in the country (Havel, 2013).

The fire incident at Tazreen Fashion factory initiated two major plans: one by the Government of Bangladesh, the BGMEA, and local labour unions to develop the National Action Plan (NAP) with the purposes of reviewing national safety standards, improving inspection capacities, and introducing fire safety training for garment manufacturing employees and initiating a fire-safety hotline (CCC, 2013). The other step was taken by buyers such as Walmart and Tesco, who proposed a collective approach to fire and building safety through development of an agenda that would be directed by the German Development Agency (GIZ). It would be mainly based on accommodating improved regulation and enforcement, investments, and more involvement of workers (Altenburg et al., 2016). Responding to this proposal, IndustriALL and a coalition of NGOs organised a discussion, but five days prior to the meeting, the Rana Plaza building collapse happened (Jamali et al., 2015).

6.1.2 Rana Plaza Factory Collapse, 2013.

Despite the apparently proactive measures and responses following the Tazreen Factory fire incident, within a span of just five months, the Rana Plaza factory collapse took place, further jeopardising the stability of the country's RMG industry. The failure of Dhaka's RMG industry to learn from mistakes and prevent unforeseen accidents had been demonstrated through the Rana Plaza incident which followed the Spectrum Sweater Factory Collapse in 2005 at Savar, a district just outside the capital (Manzur, 2016). In his book "Last Nightshift in Savar: The Story of the Spectrum Sweater Factory Collapse", the author Doug Miller (2012), described it as an "ominous tale" that presaged an industrial hazard of unimaginable magnitude as a caution of consequence for all concerned stakeholders within the garments manufacturing sector. He further stated that the lessons learnt through the Spectrum Factory incident that killed 69 workers and injured over 84, were evidently insufficient for preventing the disasters that followed (Miller, 2012).

It is said that prior to the tragedy, workers had identified cracks on the walls of the factory building that had been constructed on a former flood-prone swamp and expressed their concern but were silenced by authorities (The

Daily Star, 2015). Circumventing the provision for adequate structural foundation, the originally four-storied building was extended by five additional floors to accommodate larger orders from buyers that factory owners would not refuse. Furthermore, heavy machines were positioned on the extended floors, aggravating the risks (Dhaka Tribune, 2014). Investigations revealed that Spectrum Factory not only violated its construction permit but also disregarded several labour laws and codes of conduct prior to the mishap, including failing to provide the minimum wage and denying workers their legal right to a weekly day off (Spencer, 2013). Greenhouse (2012) affirmed the failure of both the local public authorities and European retailers who sourced from this organisation to effectively monitor safety issues within the sweater factory.

Many of these retailers claimed to have been abiding by regulations and procedures that required them to examine ethical labour practices of their suppliers but they failed to discover and remediate prevailing threats at the Spectrum Factory (The New York Times, 2014). Millers' book (2013) provides a comprehensive account of the national and international campaign that takes the approach of penalising the owner and the multinational buyers. It elaborates the hesitancy of buyers to compensate the affected workers and sheds light on some contradictions of corporate social responsibility in today's globalised economy (Manzur, 2016). When the Government, manufacturers, and retailers addressed industry-wide health and safety issues after the Spectrum Factory accident, several international buyers ensured they would take immediate action to convince consumers that the workplaces used in Bangladesh were safe and would strengthen structural integrity of factories so such incidents were prevented in the future (Spencer, 2013). However, the intensifying pressure on the Bangladeshi RMG industry for significantly improving health and safety practices within their workplaces did not yield results and the complacent behaviour of the actors led to the larger tragedy of Rana Plaza.

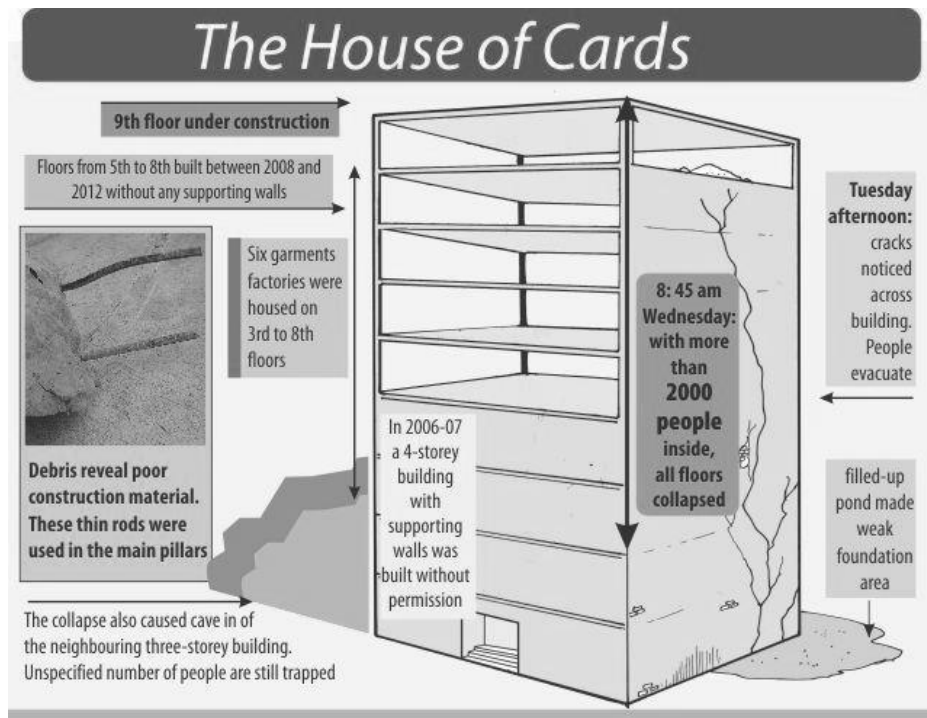
Within the 90 seconds it took to crumble into rubble, the Rana Plaza garment manufacturing complex became a symbol of global disparity and came to be considered the deadliest structural failure of the contemporary era (The

Guardian, 2015). Global trade unions termed it as “mass industrial homicide”. The debris from the wreckage, gradually cleared away by volunteers and day labourers, also signified a city gone out of control with illegally developed buildings overloaded with people and machinery while somehow negotiating regulations to eclipse competition and ensure success (Williamson & Lutz, 2019).

Structural Description: The Rana Plaza factory complex located in Savar, a district just on the outskirts of Dhaka, was originally designed as a three-storied shopping mall in 2004 and was therefore not strong enough to withstand the weight and vibration of heavy machinery that had been installed to operate manufacturing processes in factories (Pitcher, 2013). The building that was never intended to house factories had been extended vertically with additional floors added over the years, apparently without any permission from authorities (Manik & Yardley, 2012). It is claimed that the top two stories were built on receiving approval from the Savar City Corporation (Afros, 2014). According to media reports, the building had about six RMG factories in operation along with various shops, a bank and apartments. Among its clients were Mango, Benetton Group and Walmart, who had claimed to have no authorised deal for production although one of its factories Ether Tex, had all three brands listed as buyers (Odhikar, 2013).

Figure 6.1

Rana Plaza—Possible Causes of Failure



Note. Source: Architizer Journal (2013).

Description of the Incident: On April 24, 2013, just five months after the fateful Tazreen Fashion Factory fire incident, the factory building of Rana Plaza collapsed injuring and killing thousands of workers who were working for just 25 US cents an hour (Odhikar, 2013). A day before the catastrophe, workers had reportedly identified cracks on the walls of the building and that the very morning an engineer had supposedly notified the building owner Sohel Rana about the underlying risks within the structure and suggested all occupants evacuate it (The Daily Star, 2015). However, after a discussion between the owner and a local government official, the building was pronounced to be safe (Quelch & Rodriguez, 2013). Fortunately for the employees of the bank, they abided by the advice of the engineer and vacated the building, but the factory workers were instructed by the factory management bodies to return to work the next morning to fulfill clients' orders that were overdue. They were threatened with dismissal from their jobs if they disobeyed (Dey & Basak, 2016). The workers had no choice but to

conform and show up for work the next morning. A few minutes after the factory began its usual schedule in the morning, a power outage halted work. Six diesel generators unlawfully placed on the upper floors and weighting few tons apiece, reverberated into action and the vibrations began to ripple as the entire structure began to crumble down floor by floor creating a monstrous pile of concrete wreckage over thousands of workers (Labowitz & Baumann-Pauly, 2014).

Among numerous human errors and lack of principled judgments that may have initiated the disaster, some basic structural flaws were evidently responsible for the extreme outcome. Experts have summarised a few of the possible causes for the Rana Plaza factory building to collapse as follows (Quelch & Rodriguez, 2013):

- two years after its establishment, the four-storied building was extended without approval from authorities
- the fifth and eighth floors were built between 2008–2012 without any supporting walls required for withstanding heavy industrial machinery
- the building's foundation rested on swampy land that had been filled only with sand
- debris remaining after the collapse revealed the use of sub-standard building materials with iron rods used in place of main columns

All such structural weaknesses in the building culminated in one of the worst industrial disasters the world has witnessed to date.

The Tragic Outcome: The disastrous Rana Plaza building failure caused 1,134 deaths and grievous injuries to over 2,500 people. Most victims were female factory workers who had their children under the care of the building's nursery. Hundreds of people remained confined for days under the load of destruction and the only possible way to free them from the weight of debris and rescue them was by amputating parts of their limbs (The Daily Star, 2018). Over 332 people remain missing, while a majority of the victims were married with children. These children have either been orphaned or bound to survive with parents crippled through this tragedy (Sobhan, 2013). The building owner, Sohel Rana was arrested four days after the accident along

with others from the management on account of two main charges linked with the collapse: murder and violation of building regulations. In 2016, 41 individuals were charged however, on the pretext of legal delays their trials had resumed after five more years in 2022 (Jacobs & Singhal, 2017). According to Jacobs and Singhal (2017), the magnitude of the disaster enhanced awareness regarding the underlying risks and detriments of sourcing from developing countries and the urgency to improve supply chain governance mechanisms for workplace environments. It also underscored the importance of maintaining safety in the global garment manufacturing sector. Although garment manufacturing factories in developing countries including Bangladesh have experienced innumerable hazards, the collapse of Rana Plaza factory building is one of the most scandalous in history (Hobson, 2013).

Responses: This incident became a global scandal and stole the limelight of the national and international media. Trade unions and NGOs instantly highlighted the shared accountability of companies and brands mostly based in Europe and North America that had assigned the factories within Rana Plaza and put pressure on the manufacturers to deliver on time in spite of changing the designs of their ordered clothing line (Koenig & Poncet, 2022). Foreign buyers were held responsible for influencing the factory owners' decision to compromise workplace safety and continue work and also criticised them for collaborating with such manufacturers without being certain of their safety compliance (Quelch & Rodriguez, 2013). Various pledges and commitments acknowledging the prevalent challenges and demands including compensation, rehabilitation, treatment of the injured workers and proceeding with legal actions, were made at national, international, government and non-government level with regard to ensuring fire and building safety within the RMG workplaces (Rahman, 2019). Some of the significant responses falling within the scope of this study are discussed below.

Government: The Bangladesh Government arrested the owner of the Rana Plaza building along with all the owners of the garment manufacturing factories it housed, intending to penalise each for negligence (Wahnstrom,

2015). The Mayor of Savar- where the building was located, along with the engineer who had inspected the complex the day before the disaster, were both suspended from their positions (Haque, 2013). Meanwhile, the government authorities endeavoured to sidestep the issue of negligence and non-compliance fearing the loss of foreign investments and damage to the country's economy (CNN, 2013).

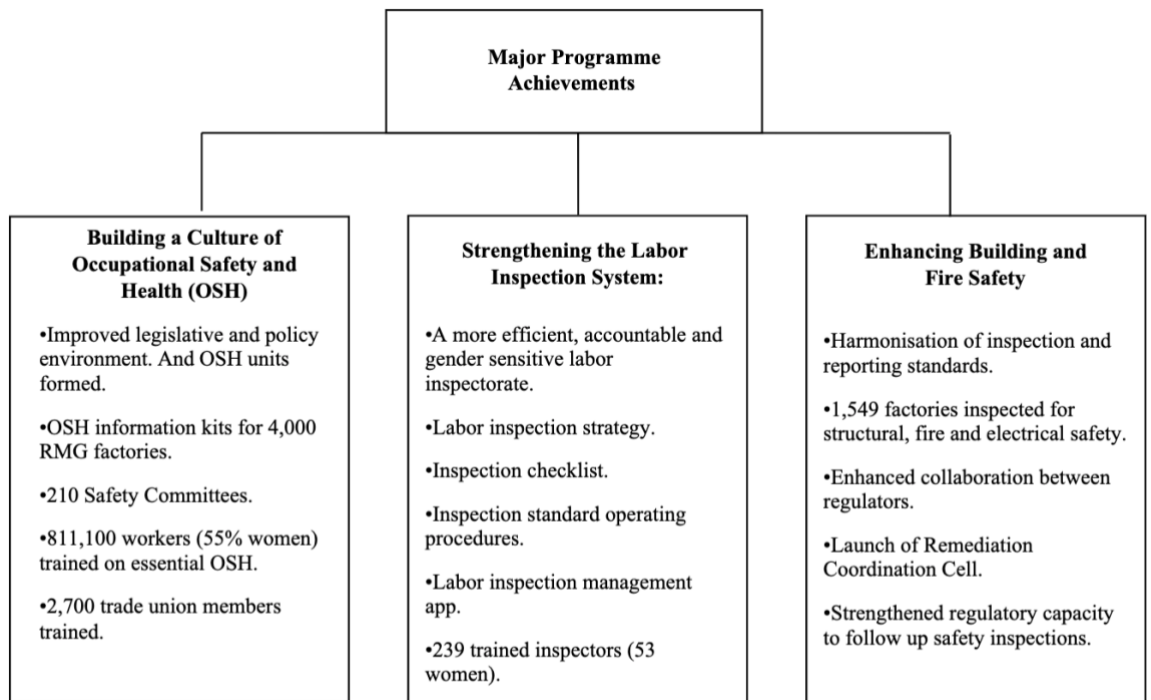
After the Rana Plaza tragedy, the ambiguity and ineffectiveness of the Bangladesh Labour Law Act 2006 was realised and therefore, amended on July 15, 2013 concentrating on OHS and labour rights and obligations (Rahman, 2019). This amendment stressed safety measures, reports of workplace incidents, fire drills, and other OHS issues, along with the development of labour inspectorates in different agencies for enhancing working conditions and worker safety (Frenkel et al., 2022). These modifications were crucial for they involved workplace safety measures that were needed to eradicate the inherent hazards. Prior to the Rana Plaza collapse, several foreign organisations such as the ILO were sceptical of the Bangladesh government's role in implementing legal rights for workers to form labour unions (ILO, 2016d). However, being strongly opposed by the BGMEA, the Government initially refused to reform the Labour Law. Meanwhile, in the aftermath of the Rana Plaza incident, the U.S. government deferred the generalised system of preference (GSP) facility to Bangladesh alleging its agencies failed to amend the labour regulations (The Daily Star, 2015). Siddiqui et al. (2020) point out that it was only then that the Government conformed by amending the Labour Act on July 22, 2013, four months post the building collapse tragedy and consequently the amendments closely corresponded to the international labour standards, strengthening labour rights and workplace health and safety (Siddiqui et al., 2020).

The Government involved the ILO in implementing activities in the context of the National Tripartite Plan of Action (NTPA) for factory building safety and prevention of fire hazards within the garments factories. Khan et al. (2019) state that the plan identified actions to be taken at three levels—policy and legislation, administration, and practical operation. The scope of the NTPA that was established earlier in response to the Tazreen Factory fire incident

was urgently expanded after the Rana Plaza accident to incorporate issues related to structural concerns and hence the revised document was titled NTPA on Fire Safety and Structural Integrity for the RMG sector in Bangladesh (ILO, 2016).

Figure 6.1

Government Programmes after the Rana Plaza Disaster



Note. Source: BGMEA, 2017.

Dutia and Erol (2018) report that the Ministry of Labour introduced standard operating methods, aiming to enhance transparency and reliability in the trade union registration procedure. Furthermore, to enhance capacity-building, workforces, and resources, the mandate of DIFE had been reconstructed with more than 250 new labour inspectors recruited, the budget increased by four times and institutional aptitudes of DIFE upgraded (Dutia & Erol, 2018).

Bangladesh Garment Manufacturers and Exporters Association: The day after the tragedy, the President of the BGMEA announced the formation of three committees to provide targeted assist to the victims and their families

with compensation and medical care. They also assembled a team of engineers to monitor the functioning factories in the city, of which 19 were found to be risky and were shut down (Manik & Yardley, 2013). The BGMEA also claims to have ensured paying all the workers of the factories that were housed in the complex of Rana Plaza in accordance with the labour law, and that it donated U.S.\$232,000 to the government relief fund (BGMEA, 2020b). As stated by the BGMEA, 26 of the ill-fated workers who had lost their limbs in the collapse were provided with artificial limbs. The Association established the first Orthotics and Prosthetics School in the country within a year of the incident (BGMEA, 2020c). The BGMEA and the Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA) strongly recommended relocating generators from the upper floors of buildings and formed committees with the Bangladesh University of Engineering and Technology (BUET) to identify faulty factory buildings (CPD, 2013). They also signed a memorandum of understanding (MOU) with the Institute of Planners, architects and others to detect the causes of accidents and poor building standards. They also formed three separate committees to coordinate the rescue and rehabilitation of the Rana Plaza victims. However, according to the affected workers and other sources, not all victims were compensated by the BGMEA (FIDH, 2014). The Rana Plaza incident shed light on the negligence of state and non-government actors such as multinational organisations and private owners of RMG factories in the country, along with the BGMEA, the principal body authorised to regulate the RMG sector. They were all roundly criticised for their governance failures and failure to accept responsibility for the outcome (Reinecke and Ansari, 2015).

Owners: The incident of Rana Plaza building collapse appears more tragic when it is realised that a forewarning had been provided the previous day about detection of the cracks in the building. The owner underestimated the warning and took no measures to safeguard the occupants (Motlagh, 2014). Unlike the owner of Tazreen, the owner of the Sohel Rana complex had most parts of his building rented out to other manufacturers and fled after the accident (Siddiqui et al., 2020). Rana took no responsibility for the tragedy and was arrested four days after the building collapse along with 17 others,

including his father. They were charged with violation of building codes and illegal construction, while Rana faced four separate charges for murder that include deaths of the factory workers (Manzur, 2016). Although arrested and currently serving a jail sentence, much astounding information surfaced after the incident, beginning with the construction of the building itself. It appears that the owner Sohel Rana was an active member of the ruling party in the Savar Municipality unit and had established the Rana Plaza complex with approval from the then Savar Mayor in 2007, who in reality had no authority to issue such permission for construction (Gomes, 2013).

Many accused the Government of attempting to protect the owner by blaming the opposition party and others (Roeland, 2012). In 2015, charges against the owners were upgraded from culpable homicide to murder relating to the collapse, rising from allegations that the workers were compelled to enter the building to work in spite of warnings made about the appearance of cracks in the building. Consequently, 38 persons have been charged with murder while three have been accused of helping Rana flee the scene of the accident (Venzke, 2018).

RAJUK/Regulators: An inspector from RAJUK's civil department was held in custody after the incident despite the fact that the nine storied building had not been approved by RAJUK, nor had RAJUK carried out supervision during its intermittent construction carried out in different phases over five years (Halder & Bappi, 2021). Savar Municipality officials revealed that the building owner had submitted a layout plan in 2008, which had been approved by the municipality that had a small branch comprising just two engineers to carry out this job. The municipality claimed that supervision was not their responsibility (Jonas, 2019). RAJUK, in their defence, stated that an area of 1,528 km² around Dhaka is under their direct jurisdiction and no municipality within this area was authorised to give permission for any building construction, and that the owner of Rana Plaza building had not obtained the compulsory approval from RAJUK (FIDH, 2015a). RAJUK formed a three-member committee to investigate the causes of the factory building collapse and submitted a report within seven days of the incident. In that report, RAJUK's Chief Engineer accused Rana Plaza of disobeying the BNBC

regulations by not organising supervision by architects or engineers during the construction phase, which led to the collapse (The Daily Star, 2021). RAJUK has always cited the lack of adequate workforce as the primary reason for their inability to monitor violations of building regulations and codes. At the time of the Rana Plaza incident, they had only 40 inspectors, many of them without degrees in engineering (Sabet & Tazreen, 2013).

The UNB (2016) however, point to the fact that RAJUK seemed to be quite capable of carrying out their non-regulatory performances such as acquiring land, selling plots, or developing lands. People thus assert that political influence and corruption appear to be the driving forces behind RAJUK's inefficiency (Sabet & Tazreen, 2013). On the other hand, to establish internal management processes to report efficiently on findings of fire and structural inspections in a methodical, comprehensive, and ethical manner, RAJUK, along with the Fire Service and Civil Defence (FSCD) department collaborated with the ILO with intentions of playing a vital role in ensuring fire and structural safety of buildings with the RMG sector of Dhaka (ILO, 2015a).

The ILO and other global responses: The ILO immediately responded to the hazard by organising the Rana Plaza Trust Fund in November 2013 to collect donations for the victims from the brands and retailers employing the labour force employed at the Rana Plaza, as well as from others (Roeland, 2013). The ILO agreed to serve as the neutral facilitator for converging the stakeholders and multinational organisations together for negotiations and delivery of a compensation deal. Prentice (2019) notes that never before had the ILO participated in compensation after an industrial mishap, and this exception was made as a tribute to the magnitude of damage Rana Plaza had caused, and its gravity. This process came to be considered as a ground-breaking initiative by the NGOs as it covered the entire supply chain in ensuring that the victims were compensated (Mirjam, 2015). This supply chain-funded system indirectly established a list of companies headquartered in developed countries to be immediately identified as sharing responsibility for the Rana Plaza disaster (Christie, 2019). With the support of the ILO and some global buyers, local authorities and

stakeholders at national and international levels along with organisations such as IndustriAll Global Union and the Clean Clothes Campaign proceeded towards strengthening OHS, labour inspection services, skills training and long-term rehabilitation services (ILO, 2013).

Shortly after the collapse of the building, a high-level ILO mission was sent to engage with stakeholders, Bangladesh government, employers/owners, workers, and development allies to identify the steps to be taken to prevent such tragedies from occurring in the future (ILO, 2017). To respond to the factory building collapse and to further enhance the NTPA, the ILO joined a three-year program “Improving Working Conditions in the RMG Sector’ funded internationally by a few governments to ensure workplace safety. This included measures taken in five areas: improving building and fire safety; strengthening labour inspection systems; establishing a culture of health and safety in workplaces; restabilizing injured workers and enhance working conditions; and competitiveness through the Better Work Bangladesh program (ILO, 2015b). However, the ILO and the World Bank refused to approve of Bangladesh joining the textile industry monitoring program until the country had overhauled its labour regulations and corrected the conditions for unions (ILO, 2013). Consequently, the EU, ILO, and Government of Bangladesh collaborated in 2013 to form the Sustainability Compact that emphasises continuous enhancement of labour rights and factory safety (Posner, 2014).

After completion of inspections in several RMG factories in the region and identification of their underlying safety issues, the ILO programmes focused on the development of Corrective Action Plans (CAPs), leading to significant development in the capacity of the DIFE to effectively monitor remediation process in the inspected factories (Siddiqui & Uddin, 2016). To coordinate this procedure with the Government and stakeholders, the ILO launched a Remediation Coordination Cell (RCC) in 2017 to administer the remediation process after agreeing upon harmonised criteria for fire and structural safety assessment in 2014,

leading to the common protocols for fire, electrical, monitoring of the RMG factories, and building safety remediation (RMG Bangladesh, 2017).

The Rana Plaza incident received massive global attention, overshadowing the Tazreen Factory fire occurrence only five months earlier owing to its scale. The unsafe working conditions of millions of workers in the garment sector fell under global scrutiny (Ethics Unwrapped, 2021). “Who to blame” became a crucial question. As the country’s common people and workers primarily turned against the owner Sohel Rana and building regulating authorities, even the President of the BGMEA insisted upon an exemplary penalty for those responsible, receiving the support of the garment factory workers’ federation (Quadir et al., 2021). Gradually, the criticism shifted towards the global brands and almost a year after the Rana Plaza tragedy, when the BGMEA teamed up with factory owners stating that the disasters in Dhaka’s RMG factories were the consequence of negligence by top buyers such as H&M and Walmart, their claim received government support as well (Aizawa & Tripathi, 2016). This shift in position became remarkable as domestic players transferred their accountability on to the western world. Eventually, global buyers also participated in the “blame game” and distanced themselves from the mishaps, either claiming they were uninvolved with the factories housed within Rana Plaza or accusing the Government and industry authorities of negligence (Ashraf & Prentice, 2017). Over 40 companies and organisations expressed their concerns to the BGMEA, expecting credible actions from the Government and expressing their doubts and reconsideration of sourcing from Bangladesh (T.J., 2013).

The following part of this chapter discusses the possible existing gaps as perceived by the primary actors that lead to such “blame games” after a tragedy. It seeks to explore how lack of clarity regarding each actor’s role and responsibility could contribute to generating more issues than solutions.

6.2 The Governance Gaps and Failures: The Blame Game

The International Monetary Fund (IMF) promotes globalisation, claiming “there is substantial evidence from countries of different sizes and different regions that as countries ‘globalise’ their citizens benefit, in the form of access to a wider variety of goods and services, lower prices, more and better-paying jobs, improved health and higher overall living standards” (Giovanni et al., 2008). In this line of thinking, economic globalisation is credited with enabling trade through “flows of investments, financial capital, division of labour and specialisation” (Mukerji & Triparthi, 2014). The clothing industry perhaps best symbolises successful globalisation of a manufacturing sector by transforming the manufacturing and consumption processes through the realisation of such flows. The RMG sector in Bangladesh would figure as one of the greatest success stories of benefitting from economic globalisation over the past few decades. Not all are convinced, however, of the benefits of globalisation with many criticising various side effects it creates notably, loss of national sovereignty, security, and safety. Mackinnon and Cumbers (2018) summed up the globalisation process as one wherein production leaps from city to city with intermediaries outsourcing to other representatives while governments make courageous claims but few investigate safety.

Following the collapse of the Rana Plaza building, for weeks and months the western media in particular scrutinised the negligence of duty of care and the prevalence of such unsafe workplaces. An article in *Globe and Mail* underlined the debate around the extent to which retailers are responsible for the supply chain that delivers products onto their shelves (Mackinnon & Strauss, 2013). Bangladesh was facing the downside of globalisation, possibly for the first time.

The unplanned growth of the garment sector in Bangladesh over a span of about 30 years, is perhaps a quintessential example of strong business possibilities coupled with frail regulations. According to the World Justice Project (Correspondent, 2014), the lenient rule of law across the country’s RMG sector had created severe risks that concluded in tragedies like the Tazreen Factory fire and Rana Plaza collapse among several others. The

existence of global agencies is the outcome of the profits they make. The globalisation of the garment industry continues to be supported by domestic work conditions in developing countries. The Rana Plaza collapse raised apprehensions over the responsibility of American and European retailers and authorities who employ labour in Bangladesh and other such low-wage markets in efforts to minimise prices for consumers (Gopinath, 2018).

As news of the Rana Plaza broke globally, consumers who purchased from multinational companies with operations in Bangladesh began to condemn the retailers for taking advantage of workers from developing countries terming it “modern slavery” (Nolan & Bott, 2018). The country, a home to over 5,000 garment manufacturing factories for most of the top global brands, has the lowest paid workers. As reported by The Butler (2019), the workers employed at the garment manufacturing factories receive the lowest wages in the world which is a minimum of BDT 5,300 (US\$54) per month. It was also noted that despite the ILO’s demand to respect, promote and acknowledge principles such as freedom of association for workers, employers often avoid to comply. Moreover, on numerous occasions employers have been reported to assault the workers who protest or voice their demands. This play of authority exposes the prevailing gap between regulations and ground realities (Stanwick & Stanwick, 2015).

As a result of these two prominent fatal disasters, societal criticism was overpowering and resulted in focused, international pressure through several stakeholders to ensure safety within the RMG workplaces concentrating on socially and environmentally ethical behaviour along global supply chains. However, the blame has been directed mainly at Bangladeshi suppliers where their unsustainable practices were soon highlighted significantly in terms of building safety, unsatisfactory working conditions, and disregard for environmental impacts (Schuessler et al., 2019). Rana Plaza threatened three sets of actors involved in the RMG sector of Bangladesh: the country’s Government, which had responded disappointingly to a series of previous deadly factory related tragedies; western brands which persisted sourcing products from the country with cheap labour, overlooking the risky workplace conditions; and the factory owners who relied on a steady stream of orders

from the globalised market. Therefore, an immediate impact of these unfortunate events was a sense of shared risk that somewhat, though perhaps temporarily, aligned the interests of all stakeholders (Schuessler et al., 2019).

The following is an overview and critique of some of the prominent actors who reacted to the two disasters and blamed others, perhaps to avoid their own accountability in the tragedies. Existing gaps that hinder steady progress in improving workplaces within the garment manufacturing factories are identified.

6.2.1 The Government and BGMEA

Culpability. Reinecke and Ansari claim that the evident coalition between the country's Government and the BGMEA allowed various forms of labour exploitation to persist in the RMG industry, neglecting concerns regarding poor wages and distressing working conditions, raised by international buyers. They were apparently not sincere in their purpose to tackle the issue of modern slavery (Reinecke & Ansari, 2015). Meanwhile, according to a CCC report, global buyers were content with the ineffectual governance of inspection and compliance during the pre-Rana Plaza era as it assisted in maximising their profits. Therefore, researchers say that the complexity lies within the issues in the supply chains (CCC, 2013).

Building incidents, as mentioned earlier, were not uncommon in the country. After a textile factory fire incident in 2010 that killed 21 workers, the IndustriALL initiated consultations with unions and primary stakeholders in Bangladesh to formulate strategies for improving fire and building safety but the Government and BGMEA declined to join the consultations, perhaps to denote their disapproval of the proposals (Labowitz & Baumann-Pauly, 2014). Following a series of fire hazards in 2011, however, both parties acknowledged the initiative by IndustriALL and a memorandum of understanding (MoU) aimed at establishing safety programmes to prevent future fire incidents in manufacturing factories was discussed (CCC, 2013). However, the MoU received lukewarm responses from global garment brands as well as BGMEA, and never made headway way until the Rana

Plaza occurrence in 2013, which spurred the urgency to implement building and fire safety action plans (Reinecke & Ansari, 2016). As names of the major brands which refused to sign agreements on building and fire safety started being exposed, calls were made in the global media to boycott buying their products (Bhasin, 2013).

As discussed earlier, the BGMEA plays a significant role in leading the country's RMG industry and it also claims to be aligned with the Government. The extent of its authority may be seen in its role in issuing the "utilisation declaration" that is necessary for importing duty-free materials. The utilisation declaration is a customs document used to monitor compliance with regulations for payments of export and import duties made to the Government and is issued by trade associations and not a government body (BGMEA, 2020d). Reacting to the pressure to regulate the practice of non-transparent subcontracting, the Government turned to trade associations to formulate a new strategy for developing a transparent and accountable subcontracting method based on validating unregistered factories by having them join the trade alliances to be allowed to receive subcontracts (Akbar & Ahsan, 2021). The trade associations attempt to play a strong role in executing regulations that would ideally be applied by the Government. Despite labour laws being amended in 2013 to simplify the formation of labour unions, only 10% of the garment factories among over 5,000, are registered (Human Rights Watch, 2015b). The BGMEA and BKMEA do not intend to allow small factories which cannot meet minimum safety standards and provide satisfactory working conditions to be among their ranks and have now started to restrict new membership, revealing the reality of the pseudo-regulatory role that the trade associations aspire to play (Akter & Uddin, 2016).

The distributed responsibility among different entities tasked some local and officials from the Ministry of Textiles to conduct random factory inspection visits, while some multinational agencies carried out their own audits. The remaining were inspected by BGMEA itself (Nolan, 2016). Rahman reports that RAJUK had only 40 inspectors at the time of the Rana Plaza collapse for monitoring all the factories in Dhaka, estimated to be over 1 million at the

time. They also lacked resources for enforcing building codes. Some officials from inspection agencies have even raised the issue of factory owners being pre-warned of (supposedly random and unannounced) inspections so they could take covering up measures to avoid penalties (Aizawa & Tripathi, 2016). The challenge of enforcement of labour law is linked with the uneven progress of employing the much-needed additional workplace inspectors or monitors, an attempt that had been taken in a stark realisation of the inadequacy of supervision in the RMG industry. The Government recognised the requirement for at least 800 additional supervisors and committed to employing 200 by the end of 2013, but made negligible progress (CCC, 2017). Both the Bangladesh Government and BGMEA ultimately blamed the owner of Rana Plaza for the accident but also have been accused for sheltering him for their own benefit (CBC News, 2013).

Governance Gaps and Failures. The system of industrial affairs in Bangladesh is characterised by the principal role the Government plays where the state functions both as an organiser and administrator in the system with government intervention in trade unions continuing to be a feature (Fair Wear Foundation, 2015). The success or failure of the various tripartite consultations or negotiations of which the Government is a predominant part, significantly depends on the Government's responsiveness to both employers' and workers' demands and objectives. According to Knudsen and Moon (2019), human rights issues have taken a new direction since the formal endorsement of guidelines on workers' rights in The Trades and Businesses Framework, that is "Protect, Respect, Remedy". The framework takes into account variable responses to human rights and frail negotiating authority of the state in the face of multinational organisations (Parsa et al., 2018). However, the UN's efforts to safeguard human rights in the RMG industry through national legislation and other strategies were largely unsuccessful, leading to what has been described as "global governance gaps and failures" (Eberlein, 2019). Hence the UN Global Compact, an alternative framework, was established in 1999. It urged companies to align their work ethics with universal principles on human

rights, labour rights, anticorruption, and collective goals (Gonzalez-Perez & Leonard, 2017).

Rana Plaza's collapse exposed the lack of staff and expertise within government organisations responsible for inspecting factories and enforcing regulations. The UN's International Search and Rescue Advisory Group offered the Bangladesh Government assistance that was declined on the grounds that the local emergency rescue services were substantially efficient. This was despite an earlier assessment by the UN of the nation's ability to tackle such a situation that had concluded that this was not the case (IRIN News, 2013). The Government perhaps intended to "save face" to protect national sensibilities that had been aroused by the Rana Plaza incident (North, 2013).

The collapse and its aftermath featured four key elements that were increasingly prevalent globally, as supply chains extended to the developing parts of the world. These were comprised of the following (Vieira, 2017):

- the incident contained significant, negative social impact with massive media coverage
- buyers were predominantly based in developed countries
- the supply base was divided and not transparent, largely situated in developing regions
- consumer counterattack was limited.

The nexus between the Bangladeshi Government and the RMG industry is said to be the main cause of the fragile enforcement of the labour law. As Bick et al. (2018) claim, the main factor appears to be the enormous political clout exerted by the garment factory owners in the country. The Corruption Perception's Index 2013 placed Bangladesh in 136th position out of 175 states examined. Corruption is seen to penetrate all stages of the garment sector and a combination of government and private unethical practices is blamed to create an obstacle in ensuring rights of workers (Labowitz & Baumann-Pauly, 2014). The Transparency International Bangladesh (TIB) report 2013 also highlighted that business models provided or practised by buyers undermine regulations because both suppliers and buyers benefit

from avoiding compliance set by legal regulations (TIB, 2013). A Bangladeshi Government official stated after the Rana Plaza incident that nearly every Member of Parliament in the country maintains close ties with factory owners who comprise the elite and control significant media attention. Most of them are factory owners themselves (Staff Report, 2020). The garment manufacturers in turn, enjoy their immense influence in the parliament where most parliamentarians have made investments in the RMG sector. The transparency report further provided a profound analysis of the influence of the garment factory owners in the legislative process, which identified a favourable tax system, hindrances to regulations that would impose additional directives and the strong link the parliamentarians maintain with BGMEA (TIB, 2013). According to the report prepared by the Committee of Foreign Relations (2013), the Government itself is so dependent on the RMG sector for the nation's economic growth that it remains satisfied with the status quo. The report observed that second and third generation of factory owners were more compliant than the previous ones, but they only made up 10% to 15% of the total number of owners at that time.

In the case of the Triangle Shirtwaist Factory fire mentioned earlier, two primary outcomes were achieved. The first was that the Government promptly acted upon the disaster which occurred in 1911, with far-reaching determination to strengthen labour laws to protect workers. The second outcome was that the garment industry union secured binding agreements with the leading companies that established the prerequisites for the employed workers in New York's industries. As Maffucci (2015) notes, no such measures were taken after the two factory disasters in Dhaka.

6.2.2 Workers and Owners

Culpability of Actors. As opposed to the ties between the Government and BGMEA, discontent and mistrust between owners and the workforce in the RMG sector have been increasing significantly since the Tazreen Fire and Rana Plaza collapses. On both occasions, workers had been trapped in the lethal situations. As described earlier, the workers at the Tazreen Factory were confined within the factories by management bodies, ignoring the fire alarm and thus preventing their escape from death (Pramanik et al., 2015).

Owners at Rana Plaza neglected the concerns raised previously by workers over the crevices on the walls of the factory. Furthermore, the warning by an inspecting engineer had also been disregarded and the workers were instead compelled by threats to attend work the following day (Dey & Basak, 2016). Both instances not only blatantly reflect the outcome of weak building designs or maintenance but also the negligence of employers who simply did not care for the lives of their workers. This “criminal negligence” is conceivably the most severe blame with which the owners have been burdened with through these two incidents, among other failures.

Another accusation made against the owners after the disasters was related to providing assistance for the victims and their families, which has been termed the “compensation drama” by Dey and Basak (2016). Similar to the renowned brands like Walmart and Sears, the factory owners of Tazreen Factory and Rana Plaza were also reluctant to compensate the workers (Afros, 2014). A committee was formed, receiving court directives to decide upon the amount that was to be compensated. When questioned on the package suggested by the court, one prominent member of the committee revealed that initially U.S.\$25,000 had been fixed to be provided to families of deceased workers (Human Rights Watch, 2015). Although the committee initially advised an additional U.S.\$6,400, it was later increased to U.S.\$19,100 in response to an objection raised by the ILO contesting the specifications made by the court (Dey & Basak, 2016). Victims of the incidents received financial support from companies, social workers, NGOs, BGMEA, a few buyers and philanthropists but there was no transparency regarding the exact amount paid as compensation, or the manner in which it was delivered (Prentice, 2019).

The Tazreen Fashion factory fire started around 6:45 p.m. (Heugten, 2016). This has left most people wondering why the workers were still inside the factory when working hours officially end at 5:00 p.m. Similarly, just five months later when the Rana Plaza building collapsed, it was revealed that in spite of being pre-warned, the factory management ignored evacuation and compelled the workers to return to work, being under pressure from looming shipping deadlines. (CCC, 2013). This brought the issue of “forced overtime”

into the limelight. Both incidents and a string of other garment factory disasters, particularly in Dhaka, exposed the insensitive employment conditions in the city's RMG industry and the deadly price workers were to pay for "fast fashion" under stringent deadlines and low wages (Neve & Prentice, 2017). Fast fashion—a design, manufacturing and marketing strategy that focuses on rapidly manufacturing high volumes of trendy clothing using low-quality material with the target of bringing cheap styles to the market—resulted from an industry-wide movement towards overwhelming volumes of consumption (Bhardwaj & Fairhurst, 2010). Bangladesh's journey through its economic development is not unusual for poor but labour-rich nations that have been exploited by developed countries as ladders for further economic progress through the contemporary supply model of fast fashion (Whitley, 1999). Top western brands like H&M, Zara, Adidas, and others, embraced a prompt response model of manufacturing to meet the rising demand which was devised to diminish inventory and dramatically reduce the time invested between designing the garments and their eventual delivery to the retail outlets (Jones, 1998). This exerted pressure on suppliers to meet rigorous deadlines while meeting stern cost mandates. This frequently resulted in intensification of workload in factories and safety shortcuts of the kind observed at Tazreen and Rana Plaza (Taplin, 2014).

Governance Gaps and Failures. The practice of putting "profits before people" while disregarding duty of care is probably the primary cause of the safety failures in this industry. The procedure of manufacturing and exporting garments leaves certain actors in this field with almost no or very little power. In the context of the global garment industry, exemplary actors with no or negligible power are the workers. They are typically the centre of discussions among politicians, manufacturers, and exporters for only a brief period before attention moves on to the more dominating actors (Yunus & Yamagata, 2012). In Bangladesh, garment employees generally do not have steady income and are mostly the least privileged migrants from the rural sector with almost no education, hence they are more easily lured into employment and are unaware of their rights. Employers are said to avoid employing them

through contracts, making it easy to dismiss workers without prior notice and to deny them any advantage to which they may be legally entitled (Islam, 2013). This informal procedure of recruitment always leaves the workers feeling vulnerable about losing their jobs. Moreover, workers remain in a vulnerable position owing to the availability of cheap labour in other developing garment manufacturing countries along with labour unions being fragile or not existing at all (Bird et al., 2018). Failure to remove such fear, insecurity, exploitation of authority and disregard for wellbeing of the subordinates obstructs the proper implementation of labour/human rights in the RMG workplaces.

The employers' proven failure to protect workers from risky and hazardous situations through implementation of safety measures at their workplaces, further widens the gap between owners and employees. Ubaidullah (2015) shortlisted some basic components/facilities that led to the severity of the worst two disasters in Dhaka:

Escape routes blocked by storage of materials

- Machine layout often staggered making movement difficult
- Inadequate or no signage to direct to escape routes
- No provision for emergency lighting
- Doors opening to fire escape routes were not fire resistant and often did not open along the direction of escape
- Inadequate doors and staircases in comparison to number of occupants
- Fire extinguishers, exits and emergency staircases not accurately maintained
- Fire exit doors mostly kept locked
- Parked vehicles, stored goods and rubbish often obstruct easy exit to open air

Remediation of these issues could have possibly saved thousands of lives. It would be neither too expensive nor too difficult to remediate, underscoring the point that most of the tragedies that occurred were “preventable”.

Another prevalent issue that distances workers from their factory owners is the interference of their employers and other authorities such as the BGMEA with unions. In a report by Human Rights and Business (Tripathi, 2013), numerous instances of employer intrusion into workers' unions including physical assault, intimidation, and threats of sexual violence against female workers motivated to form unions, dismissal from jobs, and false criminal complaints against workers were revealed. Over a hundred cases of workers being beaten or threatened by accomplices hired by factory officials are recorded every year. Families terrorised, employees are expelled for union activities or even murdered. An example of the latter is the murder of Aminul Islam, a member of the Bangladesh Centre for Workers Solidarity, a non-governmental organisation for protection of labour rights in 2012 (Connel, 2013).

The Technical Status Report (April, 2015) by the European Commission on the Bangladesh Sustainability Compact addresses legal impediments to effective unionising and collective bargaining. It addresses the high minimum membership prerequisite of 30% of workers for a factory-level union, controlled right of trade unions to elect representatives liberally, ambiguous administrative authority to cancel union registrations, and uncompromising limitations on their right to strike. The Solidarity Centre also discovered that in 2015, labour authorities approved 61 union registration applications but rejected 148. The Dhaka Joint Directorate of Labour alone discarded 73% of the union applications (Human Rights Watch, 2021). Activists had raised their voices for formation of unions and according to Brad Adams, the Asia Director for the Human Rights Watch, if even one of the factories housed within the Rana Plaza building had been unionised, the workers could have perhaps refused to enter the building on the day of the collapse (Motlagh, 2014).

It is evident that garment workers in Bangladesh, individually and collectively, strive for improved and safe workplaces through various forms of public protests within a transnational sector of globalised labour rights (Ashraf & Prentice, 2017). However, they are projected into a privatised domain of corporate self-regulation and governance.

6.2.3 Supply Chain, Global Organisations and NGOs

The building tragedies on the outskirts of Dhaka led to widespread dialogues and discussions regarding corporate social responsibility (CSR) across the global supply chains. In the whirlpool of the blame game, several retailers claimed lack of knowledge of their supply chains and held their suppliers accountable for placing the retailers' orders with mediocre and risky sub-contractor manufacturers (Motlagh, 2014). A survey by Retail Week, an industry publication uncovered that before Rana Plaza, around 44% of consumers were unlikely to question retailers about where their clothes had been manufactured and it was observed that consumers' preference towards affordable prices was greater than their desire for production within safe working environment (Shahnaz, 2014). A McKinsey and Company study revealed that people collectively purchase tens of billions of new clothing items worldwide, increasing fashion consumption by 60% between 2000 and 2014 alone. By 2030 it is estimated that the fashion industry will consume resources equivalent to twice the size of the Earth raising the consumption rate by 63% (McFall-Johnsen, 2020). To cater to the rising demand, fast-fashion has become extensively reliant on low-cost labour and strategically chosen the low-income Asian countries like India, Vietnam, China, Philippines and Bangladesh (Remy et al., 2016).

This reliance on developing countries for low-cost production has generated a system of "indirect sourcing", also referred to as the "hub and spoke" model in the RMG industry where orders received from buyers are subcontracted to different factories (Labowitz & Baumann-Pauly, 2014). This allows using workplaces that already lack safety and production planning. Indirect sourcing is routinely subcontracted but apparently has two implications. First, the chain of subcontracting leaves an incrementally small margin of profit for manufacturers which in turn imposes more pressure to decrease the cost of production, thus undermining labour wages and compromising working conditions (Rahman & Rahman, 2020). Another aspect is that with a series of subcontractors participating in the supply chain, monitoring becomes arduous for both buyers and government. The popularity of the "hub and spoke" model remained unaffected by the chaotic incidents of Tazreen Factory and

Rana Plaza (Siddiqui & Uddin, 2016). A compliance manager for a renowned European brand once criticised the system of subcontracting by calling it one of the “scariest aspects” of production in developing countries (Padmanabhan et al., 2015). The fire incident at Tazreen Factory uncovered these disputes. Responding to the blame Walmart was receiving, it released a statement that the factory had been previously on its list of suppliers but was not accredited to manufacture merchandise for the brand at the time of the tragic incident. The brand in turn blamed Success Apparel, a supplier which had subcontracted the order from Walmart to Tazreen, violating Walmart’s policies (Greenhouse, 2012). Large factories are referred to as “showcase factories” with appreciable safety standards and compliance that represent the face of the RMG sector to the foreign buyers (Gomes, 2017). Actors across the industry are aware of the reality that a wide-ranging network of struggling, less compliant manufacturing factories undergirds the manufacturing competence of the prominent factory groups that conserve direct association with global buyers.

The extremely disastrous consequence of the Rana Plaza collapse opened opportunities for NGOs to pressurise RMG manufacturers and actors to upgrade fire and building safety within workplaces, with the collaboration of global union federations like IndustriALL and UNIGlobal Union (CCC, 2017). Labelling the disaster as a “game-changer” or a “wake-up call”, the unions initiated negotiations with garment manufacturers and launched an immediate stringent advocacy campaign utilising their experience on global garment supply chains and their capability to mobilise consumers worldwide (Taplin, 2014). This campaign was a way for NGOs to frame the disasters in question as corollaries of deliberate actions by people, to identify responsible actors and propose convincing solutions along with exposing the targets in front of influential audience (Hossain & Luthfa, 2014). The Rana Plaza collapse was immediately identified as the consequence of companies’ greed for cheap manufactured products and swift delivery which was being accompanied by deplorable misinformation about the rising death toll and the structural issues concerning building safety that instigated it (Chowdhury, 2017). On the 24th of April, day of the Rana Plaza disaster, the Worker Rights

Consortium (WRC), an agency that investigates working conditions of factories globally, discovered labels of the brands Mango and Primark on the site. This news was communicated to social media and the NGO's coalition (WRC, 2021). Taking advantage of their concern for repairing their image, the NGOs condemned these brands and presented a legal agreement to the stakeholders with the purpose of preventing building accidents in the future (Anner, 2018).

Culpability of Actors. The root of both the building incidents and perhaps many others, was arguably the practice known as “over sourcing”. Some buyers have been blamed for turning a blind eye towards the actual capacity of a factory because they are informed that the volumes and prices demanded cannot be delivered without a large production capacity which often can only be attained through subcontracting (Rahman & Qi, 2016). Research by Kabeer, Huq and Solaiman (2020), has revealed that most subcontracts may not be authorised by buyers but the BGMEA issues an “interbond license” for all subcontracts. This is basically a permitting process executed upon a single page form where BGMEA and the two parties agreeing to “hub and spoke” record relevant information about the terms and conditions of the agreement. While most subcontracts may not be notified to the buyers, trade associations are always made aware, in an attempt to manage the risks of the process, because an “authorised” subcontract is always a critical consideration for factory owners, buyers and regulators (Saxena, 2021). Moreover, there exists a third tier of manufacturing units comprised of “undeclared manufacturers” that are not registered through government or trade associations and are considered to be the riskiest in the country. There are possibly over 2,000 countrywide, operating on extremely limited margins of just U.S.\$1.00 to embroider or embellish already finished garments (Mahmud & Huq, 2013). In such cases, monitoring, compliance, codes, or standards make no sense. These unethical and irresponsible practices will only lead to disasters like Tazreen and Rana Plaza and call for global action to implement and improve safety and working conditions in the RMG factories that provide for consumers worldwide (ILO, 2018b). Lack of

transparency in the supply chain within the RMG sector of Bangladesh is an ongoing concern for brands, consumers and investors.

In comparison to other developing countries, Bangladesh holds the relative advantage of cheap labour and an abundance of workers supported by its overpopulation. Given this circumstance, upgrading factories is perhaps not financially viable (Bair et al., 2020). If the demand of clients is driven by rock-bottom costs with flexibility of purchasing or replicating approval for construction, the incentives for brands to comply with and maintain ethical standards are minimal (Ashwin et al., 2020). Brands possibly profit from the gap in governance and implementation. However, some believe that to focus solely on the failure of middle management, owners and government authorities is to dissociate brands from their accountability and shift attention away from the role of brands in propagating and fostering poor practices in supply chains (Siddiqui et al., 2020).

According to the NGOs, the connection between suppliers and brands in Bangladesh may often be short-term and continuously shifting. This instability denies suppliers the financial security required for maintaining safety standards within their factory buildings (Farhad, 2019). Brands do not play a conducive role towards improving working conditions, training workers or creating safety plans. So, the scarcity of both time and capital to invest in improving compliance standards, suppliers and factory owners follow the low-road to affordability by squeezing labour wages within poor working environments (Starmanns, 2017).

6.2.4 Regulators

Culpability of Actors. One of the core issues consequential to the building disasters has always been the underlying building/structure related flaws. While architects or engineers have perhaps escaped more blame by claiming that they were unaware of the conversion of purpose for a building like Rana Plaza, regulators refused to accept blame on the pretext of their non-involvement with the buildings (Yardley, 2013). Although RAJUK accused the Savar City Corporation of having dealt with the construction of Rana Plaza, it cannot escape its own accountability for not inspecting the building

throughout the six years it functioned as a factory until the disaster. However, historically, agencies have denied their own responsibility for regulating unethically constructed structures, particularly after they have been affected by a disaster (Begum & Solaiman, 2016). The root of this blame game lies in the obscurity within the allocation of responsibility for DCC and RAJUK that has been discussed previously in Chapter 3. Here, the enduring gaps between the agencies that perhaps catalyses the challenges of the city of Dhaka and even at times expedites tragedies, will be discussed.

Governance Gaps and Failures. Dhaka City Corporation (DCC) is the principal authority responsible for Dhaka's management and welfare but is known to fail in coordinating the city's Water Supply and Sewerage Authority (WASA), which operates and maintains sewerage lines and the storm-water drainage system (Mahmud et al., 2014). Complaints about drainage blockages and such other matters are often lodged with DCC, although it is not their responsibility to resolve such issues. DCC is also in conflict with RAJUK. A development project named "Uttara Model Town" established during the late 80s under the DCC has numerous commercial and residential plots were been allotted to different individuals by RAJUK without sewerage and drainage provisions (Mahmud, 2007). Surface development with infrastructure is conducted by RAJUK who are also authorised to sell land. In most cases as in Uttara, RAJUK developed road networks without providing utility connections. After completion of these works, these developed areas are usually placed under the authority of DCC for maintenance (Talukder & Newman, 2003). In the case of Uttara, RAJUK provided no completion report of their work when handing over the responsibility to DCC. Because of some incompetent work done on providing the required facilities, DCC was confronted with numerous challenges, such as losing income through provision of additional facilities and being blamed for the shortcomings of the area (Islam, 1996). These kinds of conflicts have only hindered Dhaka's development as a smoothly functioning city and unfortunately, the extent of it cost human lives.

ArchSociety.com is a non-profit community resource for architects and designers in developing nations, which supported and volunteered to assist

in the rescue procedure at Rana Plaza. Architect Mohammad Tauheed who had supervised the rescue efforts expressed his opinion based on what he witnessed on the site of the disaster. He stated that the two key components for instigating such a disaster were greed and corruption (Frances, 2013). The architect further explained that in the area of incident, Savar, permission from RAJUK is a prerequisite along with 13 other permission and approvals from municipality, fire service department, and other agencies, to be overseen by RAJUK (Mahmud, 2007). For factories, licensing, and authorisation from BGMEA are also needed. It is estimated that nearly 90% of the buildings situated on the outskirts of the capital including Savar had been developed illegally without RAJUK's authorisation (Akhter & Rahman, 2015). For the Rana Plaza incident, Odhikar (2013), a human rights organisation based in Bangladesh blamed both RAJUK and Savar Municipality along with the owner Sohel Rana. Savar Municipality and its engineers had authorised the illegal construction of Rana Plaza and the organisation demanded that they be brought to justice; RAJUK who also criticised the Savar Municipality and even filed a case against them, attempted to justify their ineffectiveness by objecting to the inadequate number of inspectors and staff they had in the agency (Hanlon, 2015). Nevertheless, Odhikar (2013) and others responded by stating that if RAJUK lacked expertise and a sense of responsibility then it should not be authorised to observe building constructions and demanded resignation of RAJUK's chairman for its failure.

Within a commercial environment comprised of political entities and vested interests in the unregulated status quo, violations of building codes and regulations are neither identified nor acknowledged. In July 2013, the director of the capital's development authority informed the Bangladesh Parliament that approximately 8,000 existing structures in the city had either been built without permission or violated construction codes (U.S. Correspondent, 2014). Although organisations are obligated to submit detailed drawings of their proposed buildings to the local authorities, it has been alleged that approval of such plans can be bought through bribery (IRIN, 2013). Similar to the building regulators, ministries and others appear to be equally involved in

unethical practices. Gopinath and Choudhury (2015) found in their study that the Ministry of Labour was incompetent at implementing laws and regulations themselves owing to insufficient number of labour inspectors. This cycle of undisciplined behaviour from the regulators contributed to the development of a risky RMG built environment in Dhaka. The impact could be reflected on the garment industry's sustainability as well.

6.3 Chapter Conclusion

The aftermath of the Tazreen Fire followed by the Rana Plaza collapse five months later, unmasked the costs of doing business in Bangladesh lured by cheap labour, as facilitated by globalisation. A plethora of issues and safety culture concerns unfolded—fragile infrastructure, limited labour rights, unstable industrial relations, a lenient regulatory environment, compromised and/or neglected safety standards, permissive supply chain network and overbearing pressure from buyers (global brands). The RMG industry necessitated the production of fast fashion at low costs, paired with poorly constructed factories comprising risky workplaces for more than four million people (Haque & Bari, 2021). The Rana Plaza incident has been described as a “perfect storm” of inferior conditions and practices where the trajectory of the RMG industry's progress was hindered by methods of exploitation that primarily impacted the most vulnerable and least equipped (Sobhan, 2013).

The chapter identified the commonalities between the two garment manufacturing tragedies of Dhaka. On both occasions, the red flags had been ignored by the management or employers who had perhaps initiated their businesses without proper production planning and after the incidents, reacted because of the compulsion to meet deadlines set by buyers. In the case of Tazreen Factory, workers were aware of the fire and had attempted to escape, however they were deceived with information that it was a false alarm. Similarly, in the case of Rana Plaza, forewarnings by the building inspectors on the previous day were ignored. During both incidents, the workers had been threatened and compelled to continue or start work. The outcome of greed is evident in both these disasters—the greed of suppliers and buyers equally, whose priority remains maximisation of profit. The

massive global attention received after the two tragedies was capitalised upon to bring in reformations within the workplaces of this globalised garment manufacturing sector. However, the analysis in this chapter focuses more on the *human* errors that neglected duty of care and resulted in these historic industrial tragedies.

The chapter sheds light upon the culpability and blameworthiness of the main actors responsible for the two factory disasters that could, so easily, have been prevented. The detailed investigation of the two cases helped to identify a number of gaps and failures in the safety governance of the RMG sector. Transnational agencies were brought in as technical experts to find ways to reform the issues underlying the safety regulatory system in Dhaka's RMG factories. This is discussed in the following chapter.

Chapter 7: A Case for External Intervention in Regulatory Regimes- Aftermath of RMG Building Tragedies

To comprehend the after-effects of the factory building disasters and the role external factors played in ensuring the survival of the RMG sector of Bangladesh, it is necessary to realise the extent of influence that external actors can bear on developing nations through “globalisation”. Much of what followed happened in response to the global scrutiny to which the country, especially its RMG sector, was suddenly exposed after the factory disasters that were seen as safety failures. The aftermath was possibly the most drastic and unanticipated situation the Bangladesh Government and its agencies had found themselves in, due to actions of global actors.

This chapter will briefly discuss globalisation through the case of the globalised RMG sector, highlighting the potential of global stakeholders to transfer regulatory responsibility to influence policy reformations within a developing country without rectifying its existing safety procedures. It will investigate the effectiveness of transplanting international regulatory system into a country like Bangladesh known to have weak governance so that global brands and retailers could be ensured the stability and continuity of the global supply chain network. The chapter will explore how such global intervention plays out within the local context of a developing country, with specific reference to safety and sustainability in RMG factory buildings of Bangladesh.

7.1 Impact of Globalisation on the Aftermath of Tragedies

The extensive global criticism and intervention of external actors and stakeholders that followed the RMG building tragedies were arguably consequences of the country’s economic globalisation that had been induced by the garment manufacturing and exporting sector. The term “globalisation” came into popular use during the 1980s, with reference to technological advancements and rapid international transactions through trade and economic growth extending beyond national borders. This occurred at all economic levels—including rural markets, urban industries, and financial

epicentres (IMF, 2007). The expansion of global markets has promoted productivity through competition and distribution of labour that permits people and economies to concentrate on what they do best (Wolf, 2005).

Many politicians, economists and scholars point out the benefits of globalisation, and it is widely agreed that global markets create greater scope for more diversified and larger businesses around the world. Even Joseph Stiglitz, a Nobel laureate and critic of globalisation, has observed that globalisation has decreased the sense of isolation experienced in much of the developing world and provided its people with access to knowledge previously well above the reach of even the most prosperous people in any developing country (Stiglitz, 2002). The globalised economy has created new opportunities for countries in developing regions to promote exports as they cater to richer countries. These exports—commonly a source of economic progress for developing regions—have created job opportunities and enabled workers to capitalise on those occupations where they and their country have an advantage (IMF, 2007).

Globalisation has been described as a method of world financial integration of goods and services, capital, technology, and labour, preceding economic changes influenced by global conditions (Jenkins, 2005). The IGI Global dictionary similarly describes economic globalisation as a phenomenon that brings about profound transformations revolving around businesses, investments, financial capital, the division of labour, and specialisation (Keengwe, 2022). In a similar vein, the Committee for Development Policy defines economic globalisation as the escalating interdependence between world economies and the increasing scale of transcontinental flow of exports and imports, commodities, and services that minimise the distance between borders and motivate international trade with modifications to controls. As Shangquan (2000) notes, globalisation of the financial sector was the most rapidly developed and impactful aspect of economic globalisation. It is believed, however, that globalisation also exposes developing countries to the risks of being burdened by critical external factors to the extent that their policies may be constrained, and their capacity to control and regulate production weakened (ILO, 2018c).

It is against the background of globalisation and the global forces it creates, that the factors leading to the tragic building disasters in Bangladesh's highly globalised RMG sector and the impact of their fall out need to be analysed. Liability for the RMG factory building tragedies should be collectively shared among a range of various actors, both local and international. However, no one has ever been held accountable for any major industrial accident in Bangladesh. Often the main responsibility for such incidents, as perceived by common people and consumers, is allocated to the local authorities who failed to protect the workers (FIDH, 2014).

Recognised as Bangladesh's deadliest manufacturing factory accident, the Rana Plaza collapse was a confronting manifestation of the ineffectiveness and shortfall of stringent audits that the factories should have undergone during the period before the disaster, and of the role of the regulators, Savar Municipality in Dhaka. Some have argued that the owner of Rana Plaza may have constructed the building without permission from authorities but RAJUK and government officials also failed to inspect it throughout the six years of its operation (Begum & Solaiman, 2016). In this case, the owners of the building and the factories that operated within the building were considered the most blameworthy (Narula, 2019). From the elaborate discussion in the previous chapter, it may be summarised that the RMG factory disasters revealed the ongoing, dubious organisational practices that were prevalent, many of which appear to have been motivated by globalisation. The decision by management in both cases—Tazreen and Rana Plaza—to compel workers to remain confined within the buildings was also justified by many who claimed that the burden of meeting deadlines for foreign clients was equally responsible for the outcome (Maisashvili, 2020). Fast fashion that led numerous western buyers to require large production volumes to be completed within a limited time using cheap labour was also an attribute considered to be responsible for making shortcuts upon building safety (Koenig & Poncet, 2019).

An outcome of dealing with developing countries by the first world nations as a method for sustaining the trend towards establishment of globalised approaches of supply has been the generation of extensive interest regarding

working conditions in the manufacturing countries (Jones et al., 2019). Hossain (2019) has described the Rana Plaza incident as “a parable of globalisation” where low pay was the key factor fuelling disregard of safety to meet the relentless demand for reasonably priced clothing. The control of the politically and financially powerful over labour rights and restricting trade unions is also an issue that endangers the garments industry of Bangladesh (FIDH, 2015b). A crucial strand of this discussion centres on the role of international labour standards in safeguarding and improving prevailing conditions in an existing scenario has been scrutinised, giving a mixed picture of the effectiveness of the national government systems so far (Locke, 2013). The outsourcing of manufactured products to countries where labour standards and working conditions are poor and enforcement even poorer, creates challenges in regard to labour governance and regulation (Hassel, 2008). Trade and political interests are intimately entwined in the global supply chain where interdependencies between countries are escalating owing to expansive trade and globalisation (Rahim et al., 2021). Recent observations show large-scale transitions of global manufacturing to weak economies which can provide cheap labour. Consequently, popular brands exploit their power in defining the industrial practice of developing countries that are often reliant on them for income generation, foreign exchange, development of infrastructure and sustaining domestic employment (Rahim et al., 2021). However, these brands are compelled to retain legitimacy in countries that manufacture their products and also in the states where they are sold. The implications of this fact were manifested in the aftermath of the Tazreen Factory Fire and Rana Plaza collapse in the RMG industry of Bangladesh (Rahman, 2019).

This chapter describes the changes prompted by both local and global pressures following the major factory tragedies in Dhaka’s RMG sector. Many of these transformations were initiated by the actors as discussed in Chapters 4, 5 and 6. Many of them had been blamed and held responsible for the unfortunate building disasters that had largely been caused by lack of safety culture within workplaces.

7.2 Outcome of the Blame Game

Both the Tazreen Factory and Rana Plaza disasters caused outrage throughout Bangladesh and across the world. There were protests against appalling working standards at both RMG factories. Flawed procurement processes were addressed, and advocates of consumer awareness started a campaign of discrediting renowned brands that sourced readymade garments from Bangladesh (Rahim et al., 2021). Demands for greater responsibility for safeguarding labour rights, workplace safety and working conditions increased, pressurising global brands to support compensation schemes and promote improvement of workplace standards in the global supply industry (Rahim et al., 2021). Global scrutiny and political mandates manifested by trade unions, social organisations, buyers, and international authorities after the Rana Plaza disaster, obligated the Bangladesh Government to initiate a visibly constructive and reliable approach to ensuring the safety of RMG factory buildings in Dhaka. When the nation's citizens, workers and international business allies developed mistrust the country's RMG workplace safety system, the negligent actions of the actors and stakeholders had negative repercussions and the country's reputation and its government was jeopardised as the sustainability of the state's strongest industry appeared vulnerable (Rumi et al., 2021). In the aftermath of such global attention, the Bangladesh Government responded with prompt action to rebuild the global image of the country's RMG industry. According to the NHRC Report (2015), these included the following major initiatives:

- amending the Labour Law to ensure workers' welfare, rights and safety and promote trade unionisation and collective bargaining
 - upgrading DIFE from directorate to department and recruiting additional building safety inspectors
 - creating a database of RMG factories under DIFE accessible to public, with support from ILO within the context of the NTPA
 - adjusting the minimum wage of workers from U.S.\$13 to U.S.\$43.
- However, activists and the Clean Clothes Campaign still thought that the increase was far below any realistic living wage given the county's

inflation over the past five years and needed to be increased much earlier (CCC, 2018).

7.1.1 Advent of Transnational Regulatory Regimes

The Bangladesh Government was expected to undertake genuine actions that would improve both the overall workplace conditions and the industry's tarnished reputation. Under such circumstances, NGOs and other organisations expect corporate social responsibility (CSR) to be embraced (Saha et al., 2021). In the aftermath of the two building tragedies particularly Rana Plaza, a few companies importing Bangladeshi garments went to the extent of withdrawing all production activities from the country, recognising the Government's failure to enforce safety regulations (Hearle, 2016). Fortunately, some retailers and global stakeholders across the world, adopted a more constructive approach to improve workplace conditions within Bangladesh. This resulted in the transfer of responsibility through transnational regulatory regimes in the months following the Rana Plaza collapse. In this case, the transfer amounted to transplanting foreign regulatory regimes authorised by global buyers into a developing country like Bangladesh rather than modifying or strengthening the prevalent local system or safety culture. A rapid transfer of regulatory responsibility thus occurred via the foreign regimes the 'Accord' led by European clothing retailers and the 'Alliance' led by United States and Canadian fashion companies. These agencies were launched to motivate garment manufacturing factories to conduct safety assessments and remediation (Salminen, 2018). The Alliance and Accord can be seen as global actors representing global stakeholders.

All new workplace safety standards set by the two transnational regulatory authorities called for enhanced training of factory inspectors. According to Hira and Benson-Rea (2017), inspections needed to be carried out by experienced inspectors with at least 20 years of practice in this field. The founders of the Accord anticipated that broad participation would relieve local manufacturers of the concern that the movement to improve workplace safety and workers' health would increase costs and eventually shift orders away from Bangladesh (Caleca, 2014). Both the Accord and Alliance were

individually launched as legally independent and neutral, binding regulators for five years, supported by global brands, trade unions and foreign labour authorities (Huda et al., 2018). Twenty-four American companies initiated by Walmart and Gap Inc. signed the pact for the Accord which stated that the companies would be accountable to make investments for factory inspections and remediations and committed to oversee 600 Bangladeshi garment manufacturing factories (Rahman & Rahman, 2020). More than 100 European brands made an agreement to maintain contracts with RMG factories in Bangladesh's garment manufacturing industry and share the cost for upgrades and maintenance for a period of two years, while monitoring the inspection procedure of approximately 1,600 garment factories (Mahmood et al., 2021). The national government of Bangladesh pledged to supervise 1,200 more factories—together they accounted for over half of the country's garment manufacturing factories that would be regulated under these new regimes (Rahman & Rahman, 2020). The following section describes the external interventions intended to reform existing local safety regulatory regimes introduced by the two externally based global actors, and the role they played during their period of operation in Bangladesh.

7.2 Role of the Transnational Regulatory Regimes

Although the success of these initiatives in benefitting the garments workers of Bangladesh is debatable, the approaches taken by the Accord and Alliance offer an intriguing comparison between these structurally diverse models of supply chain controls. In 2018, Accord's website described itself as an "independent, legally binding agreement" connecting the two ends of a global supply chain, with its scope limited to matters relating to fire and building safety in Bangladesh's RMG sector, complementing the strings of contracts between buyers from developed countries to the suppliers based in the developing Bangladesh (Hensler & Blasi, 2013). While the Accord did not directly impact the coordination between suppliers and their employees where the suppliers were not signatories, it created a direct contractual connection between buyers and the representatives of the workers of their suppliers. This raised the question of what the buyers would gain, from a legal point of view, by participating in the agreement (Accord, 2018). Some

questioned if the contractual relationship was implemented not only to coordinate specific benefits and rights to the workers but also to control the buyers' liability. This issue has been a deal breaker for numerous US companies that objected to joining the Accord owing to its binding character and the issue contributed to making the case for the implementation of not one but two initiatives: the Accord and the Alliance (Salminen, 2018).

Table 7.1 provides a brief comparison of the Accord and Alliance. These two regulatory regimes are described in detail in the following sections.

Table 7.1

Differences between the Accord and Alliance

Aspects	Accord	Alliance
Signatory bodies	Started on May 13, 2013, with signatories from all over the world. Operated until November 2018.	Started in July 2013 with North American brands only. Operated until October, 2019.
Actors in decision making	Global and local union federations participated in decision-making activities.	A corporate scheme without involvement of workers.
Reporting mechanism	Published all inspection and remediation progress reports on website.	Only stated if remediation or retrofitting processes were "on track".
Training and support	Provided training for safety committees at factories and managed complaints.	Administered a third-party helpline for workers to report issues or receive advice.
Regulatory aspects	Legally binding, wherein worker representatives could arbitrate against non-compliant employers.	Workers unable to enforce agreements and affiliated organisations were at liberty to leave any time if desired.

Note. Source: CCC, 2018 (adapted).

7.2.1 The Accord on Fire and Building Safety in Bangladesh

The Tazreen Fashions fire incident and the Rana Plaza building collapse

generated immense anger and triggered an outcry for workers' safety, workplace environment and labour standards within the globalised RMG sector of Bangladesh. Moreover, the anger was largely directed towards the transnational clothing manufacturing supply chains, as well as EU institutions and European and American governments (ILO, 2016). National and international media, global trade unions and campaigners for labour rights condemned the ongoing sourcing methods of popular apparel brands and their irresponsible behaviour in regard to safety within factories. This condemnation threatened corporate reputations, brand image, and the overall global image of the country's RMG industry (Ashwin et al., 2019). Consequently, actors within the nation's civil society urged international buyers to accept liability for safe workplaces and the entire manufacturing-export chain, including subcontracting. Global union federations like IndustriALL and UNI Global Union supported by international framework agreements, consumers and workers' rights campaigns established a mission to defame the industry which paved the way for consultations with organisations as strategic allies, instead of damaging the RMG sector (Reinecke & Donaghey, 2015). One of the most distinguished outcomes of these efforts by civil society both local and international, was the Bangladesh Accord on Fire and Building Safety agreed upon on May 13, 2013, with 180 apparel companies from 20 countries in Asia, North America, Australia, and Europe, two international trade unions (UNI Global Union and IndustriALL), and seven local trade unions to improve workplace safety and working conditions within the RMG industry (Khan & Wichterich, 2015). Global NGOs and civil society campaigns based on workforce solidarity such as the Clean Clothes Campaign (CCC), International Labour Rights Forum (ILRF), Maquila Solidarity Network (MSN) and Worker Rights Consortium (WRC) were witnesses to the contract, while the ILO was the independent chair (CCC & Maquila, 2013). This meant the Accord was the first initiative in the country's history of industrial collaborations where the stakeholders of a specific global value chain undertook responsibility for workers' rights and safety through a legally binding agreement. Researchers and labour rights activists acknowledged this as a major "breakthrough" or "game-changer" (Zajak,

2017).

All signatories were obliged to establish fire and occupational health safety in factory buildings through safety inspections and monitoring, remediation, and extensive fire safety training (Khan & Wichterich, 2015). The RMG industry of Bangladesh avoided economic penalty following the Rana Plaza incident as only one buyer, Walt Disney, pulled out of the country. Ironically, orders increased, possibly resulting from the introduction of the Accord (Newhall, 2017). Over 200 brands supported the initiative and with the Accord functioning, brands estimated that the risks of sourcing from this country had been minimised to an 'acceptable' level (Accord, 2018).

The Accord was a binding instrument that would hold signatories to be legally accountable for breaches of its conditions (Knudsen, 2019). It was adopted for a period of five years to prevent business-as-usual in the RMG sector of Bangladesh and covered more than two million garment factory workers. The Accord included binding commitments that any dispute arising from the Accord could be brought before arbitral courts (Duval et al., 2015). This feature stipulated independent inspections, transparency of inspection outcomes, and corrective actions plans (CAPs) (Evans, 2018). The Accord agreement comprises the following eight key elements (Khan & Wichterich, 2015, Salminen, 2018):

- legitimate agreement for five years between garment organisations and trade unions for ensuring safe workplaces within the RMG factories of Bangladesh;
- disclosure of the names of local suppliers to buyers and conduct safety inspections led by neutral and established experts
- public disclosure of inspection outcomes;
- suppliers' obligation to repair and remediate weaknesses within their factories identified during inspections;
- payments to suppliers required for repairs and remediation works to maintain safe operation within factories, and relationships with suppliers to continue throughout the of five years of the agreement;
- democratically elected worker agents permitted into manufacturing factories to create awareness among workers about workplace safety

and their rights;

- certain rights of factory workers ensured such as their right to object to unsafe working conditions;
- business with non-compliant suppliers to be ceased.

The Accord was expected to settle upon prices in accordance with suppliers' financial capacity to make fire and safety-related remediations where required and to operate safely in general. However, the precise funding arrangements for retrofitting and remediation were not clearly addressed when the Accord was founded (Bhadily, 2015).

As of 2018, the year Accord was meant to expire, over 2,000 RMG factory buildings had been inspected for structural, electrical and fire related issues. More than 130,000 issues were identified, 83% of which had been corrected (Duval et al., 2015). Under a transition agreement the same year, a new regulating regime—the Ready-Made Garments Sustainability Council (RSC)—was established. It collaborated with brands, unions and owners of manufacturing factories taking charge of factory inspections (Munni, 2020). However, RSC left out one segment of the Accord: the provision for retailers to be tried in the courts of the country of their origin if they were unsuccessful in fulfilling their obligations. This included expelling factories that did not meet their commitments for sustaining safety standards. This section of the Accord has become effective since September 1, 2021, and named the International Accord for Health and Safety in the Textile and Garment Industry to represent its broader reach (Waldersee & Paul, 2021). The Accord's effectiveness is discussed below.

7.2.1.1 The Accord's Performance in Bangladesh—Successes and Failures

The introduction of the Accord in Bangladesh was undoubtedly a historical step towards improving workplace safety within the RMG factories, specifically through a binding agreement intended to prevent disasters in the garment manufacturing factories (Zimmer, 2016). Nevertheless, there were concerns and doubts regarding its effectiveness. Venkatesan (2013) argued that it should be scrutinised based on two factors: prevention and

remediation. Keeping that in perspective, the extent of Accord's effectiveness during its time of service is discussed as below (Bhadily, 2016).

The implementation period and duration of the Accord had been agreed to be just five years, which raised concerns, particularly about the scale of the RMG sector which at the time had over 5,000 manufacturing factories in the country. Although not all had been brought under the Accord (only the significant exporters), there was a fair number and this made the task challenging within the five years allotted, along with the substantial resources and expertise required to achieve its purpose. While a significant number of factories remained under Alliance and NTPA, the Accord could not be expected to bring about an overall change or improvement in the RMG sector within the time given.

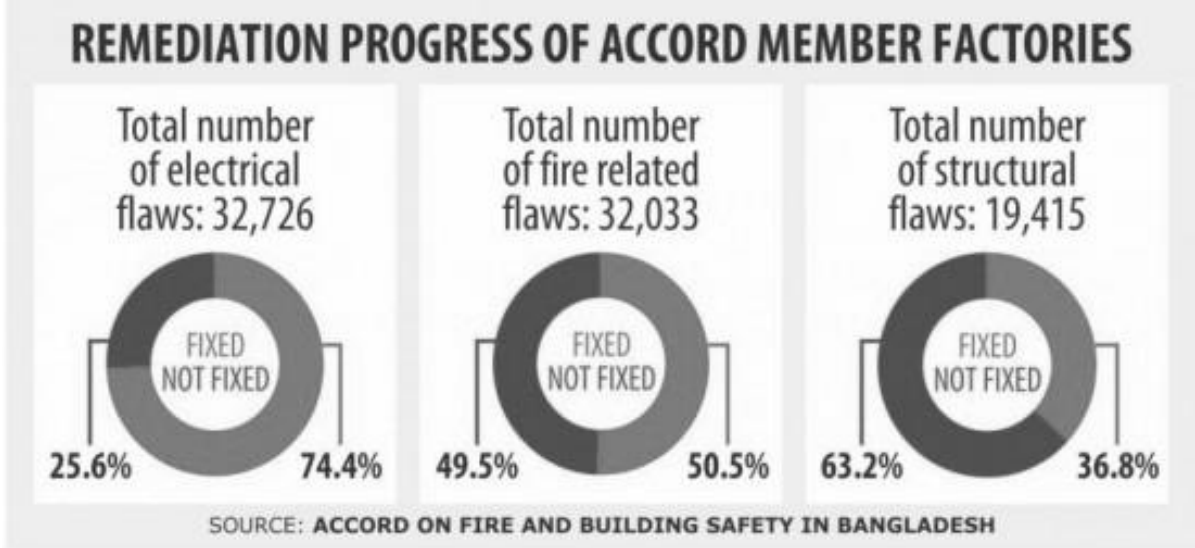
A feature that differentiated the Accord from other such initiatives was its binding agreement. This came with the provision of prosecuting companies or retailers in question under the jurisdictions of their location. However, this measure possibly proved challenging for low-income workers who may have found the cost of legal procedures to be beyond their ability to pay (Ashwin et al., 2019). The financial viability of following the recommendations set by Accord was not convenient for all factories, the smaller ones in particular. An article in the Financial Express (2018) claimed that factory owners would need to spend at least U.S.\$1.2 billion to remediate their factories and become compliant with safety standards suggested by various initiatives, both local and foreign. Although tax-free import of safety equipment had been announced by the Government, the cost would still be unviable for many (Alamgir & Banerjee, 2018).

After the Accord's adoption in May 2013, over 2,000 RMG factories were inspected for fire, electrical and structural compliance and CAPs released to inform each factory of the corrective actions to be taken to address the issues identified. The Accord website made the progress status of CAPs visible to public and hence enabled every stakeholder to stay aware of the changes being made (Accord, 2018). As of January 1, 2018, the Accord had uncovered more than 130,000 underlying issues in the garment manufacturing factories that they had inspected. Their engineers also

followed-up on the corrective actions taken and reported that about 83% of the issues been verified and amended (Miedema, 2019). Some of the Accord’s achievements are illustrated in Figure 7.1.

Figure 7.1

The Accord's Achievement



Note. Source: RMG Bangladesh (2016).

They ensured that every signatory brand would provide financial support for remediation where necessary to all factories inspected by the Accord. However, the Accord did not instruct companies to disclose their financial arrangements, or the payment made to assist the process of remediation. According to the Clean Clothes Campaign (2018), while many factories were provided with financial remediation assistance, a significant number of manufacturers avoided demanding such assistance in fear of displeasing their buyers.

If remediation had not been effectively completed in a factory, the Accord advocated that the brands and retailers cease trade with all factories owned by the same manufacturer, labelling the factory as “terminated” and rendering it ineligible to export to signatory brands and retailers. James et al. (2019) report that the Accord had dismissed 96 such factories. This liability burdened western brands and organisations with the obligation to improve the workplace safety environment. This was perhaps an unpopular strategy

undertaken in response to the Rana Plaza incident, that according to Lund et al. (2020) could have impacted the country's low-cost advantage, with some companies that were outsourcing from Bangladesh dragging their feet on their commitments.

As of January 1, 2018, 497 complaints made by workers and trade unions had been filed under the Accord through the safety and health related complaints and concerns mechanism that it had introduced. This led to some factories being terminated from the Accord. 183 of the issues had been resolved, 96 were under investigation and 56 unresolved while 20 had been withdrawn (Dutia & Erol, 2018).

Researchers state that firms agreed to improvement of factory safety, but the market compulsion was to absorb these expenses without increasing costs (Lorkin, 2019). The Accord's five-year duration was to expire in May 2018 but was renewed in June 2017 and in October 2017. The Ministers of Commerce and Labour of Bangladesh, along with signatory brands and trade unions, consented to allow Accord to continue operation until national administrative bodies reached certain safety standards in three or four years. However, in May 2018 the court ordered the Accord to end its tasks by November 2018 (Vogue Business, 2021). Therefore, the Accord transferred its responsibilities to local authorities under the RMG Sustainability Council (RSC), which had 140 signatories (Accord, 2018).

7.2.2 The Alliance for Bangladesh Workers' Safety

Owing to liability concerns, several North American companies declined to sign the Accord and instead formed the Alliance in July 2013 to operate for a period of five years (Chowdhury, 2020). The Alliance for Bangladesh Workers' Safety was a legally binding five-year initiative to improve safety within the RMG factories of Bangladesh and provided an unprecedented opportunity for members to propose concrete solutions for safety issues that would be transparent, result-oriented, and verifiable. It was launched by a group of North American clothing companies, brands, and retailers in 2013 (Rose, 2021). The collaboration included apparel industry companies and stakeholders, including the U.S. and Bangladeshi Governments,

policymakers, NGOs, members of civil society, and organised labour groups representing the majority of North American imports of readymade garments manufactured in more than 580 factories in Bangladesh. The brands included names like Gap, Costco, Target, Macy's, and Walmart (Alliance, 2018). It was the first time that prominent North American retailers expressed their sincerity towards improving workplace health and safety conditions of the RMG workers. Thus, Bangladesh became a global case study to test how the North American buyers would react to enhancing OHS (Alamgir, 2020). The initiative was founded on five strategic pillars:

- factory safety standards and inspections
- remediation
- worker empowerment
- training, and
- sustainability.

Each of its members was held accountable to operate workplaces that were safe and proficient in ensuring fire and building safety (Rahman et al., 2021). The participants were not bound by legal commitments but were only obliged to make an annual payment in the form of a membership fee. The agency provided independent inspections and revealed inspection details, prepared CAPs and suspended the factories which failed to satisfy the safety standards of the Alliance. They inspected over 900 factories and 93% of all recommended CAPs were remediated (Oka et al., 2020).

7.2.2.1 The Alliance's Performance in Bangladesh—Successes and Failures

Although the Accord's provision to include unions and NGOs in its administrative structure was ahead of the Alliance, factory owners preferred the Alliance over the Accord in relation to compensating affected workers for lost jobs resulting from relocation or termination. While the Alliance paid 50% of the compensation leaving the rest to be remunerated by the suppliers, the Accord required suppliers to pay the full compensation to the workers (Sumon, 2020). Some of the key features including Alliance's achievements and limitations are discussed as follows.

On July 10, 2013, three months after the Rana Plaza collapse, the Alliance collaborated with 26 brands and had approximately 700 factories under supervision (Saxena, 2019).

This five-year binding agreement with no legal ties focused on inspections of fire and building safety, and worker training and empowerment (Alliance, 2013).

Walmart and fifteen other retailers in two countries had established the Alliance as their own safety monitoring regime. However, their monitoring procedure was criticised by Scott Nova, the executive director of the Workers' Rights Consortium, who argued that their factory inspectors had not been employed by independent bodies. He also criticised its lack of incentives or legal penalties to oblige suppliers to adopt and improve safety in workplaces within the RMG industry of Bangladesh (Wooley, 2013). In December 2018, the Alliance in its final report stated that 428 of their affiliated manufacturing factories had completed their CAPs which included structural retrofitting and sprinkler system installation (Galib et al., 2019). They reported having offered Fire Safety Training programmes in more than one thousand units that included over 1.5 million workers and provided a confidential labour hotline (Amader Kotha Helpline) receiving over 5,200 calls monthly in 2017 and 2018 (Alliance, 2018). Although they claimed to have formed 181 factory-standard working safety committees registering workers' concerns, the mechanism did not involve labour unions. Some observers recounted that several critical observations made during inspections of a significant number of factories had not all been addressed for remediation. Moreover, the gap between expenses proposed for repairs and the available funds to factory owners continually raised concerns (Anner, 2018). The Alliance reported having dismissed 178 factories for failing to make progress in their remediation process (Alliance, 2018). However, the Clean Clothes Campaign (2016) questioned the transparency of the agency's reporting, objecting to its monitoring technique. It was said that Alliance provided no information of the underlying risks within RMG workplaces and even worse, the workers under this regulatory authority did not have an independent system to ensure them of their safety at their place of service.

After their agreement expired in December 2018 and many attempts to extend the Alliance failed, a new self-regulating programme named “Nirapon”—which translates as “safe place”—emerged to monitor factories, conduct inspections, and remediate 600 apparel factories of the country in place of the Alliance (The Daily Star, 2019). In their final months, the Alliance had redirected a few of their activities to the Bangladesh Government, possibly in conjunction with the BGMEA (Uddin, 2019). While it had been stated that Nirapon would build on the achievements attained by the Alliance, Nirapon’s model was described as fundamentally different—the Alliance operated directly with factories regarding remediation, while Nirapon conducted autonomous oversight and certification of safety and training compliance without suspending factories (Nirapon, 2022). However, the extent to which brands and retailers would be involved and to which Nirapon would have adequate financial or regulatory resources remained unexplained. Obviously, factory owners would be reluctant to address safety issues with reduced pressure from global brands and the Bangladesh Government (James et al., 2018).

Nirapon also would not publicly share issues related to factory safety compliance and would be discreet about the information. This aspect of lack of transparency made it more challenging for local and foreign authorities to hold brands and suppliers accountable for unsafe working conditions within the manufacturing factories (The Daily Star, 2019). The BGMEA had supposedly attempted to incorporate Nirapon into the framework of the RMG Sustainability Council (RSC) but it refused to join the organisation (Nirapon, 2022). A factory owner petitioned against Nirapon on October 22, 2019, and the courts banned it from conducting any factory inspections for the next six months. They were also questioned about their refusal to join the RSC. Nirapon’s appeal was rejected by the court later that year and this entire episode was perceived as a possible pressure campaign created by BGMEA (Trebilcock, 2020).

7.3 Impact and Achievements of Foreign Regulators

The intervention of the transnational regulatory regimes reflects three interlinked but not essentially mutually consistent deliberations:

- an acknowledgement that influential supply chain buyers can actively or inactively serve to impact workplace environment standards in manufacturing factories (Bair et al., 2020)
- a recognition that developing nations often do not possess a regulatory capacity or rather willingness to neutralise adverse effects of risky workplaces (Graham and Woods, 2006)
- the acceptance that the power of supply chain of multinationals may be utilised to improve workplace safety standards (Ahlquist & Mosley, 2021).

Presumably, firms provided support to improve factory safety in Bangladesh, but market pressure indicated that the factories had to bear the costs without increasing prices (Forbes, 2020). The launching of foreign regulatory bodies and transfer of technology exemplified a “retailers to the rescue” pattern where renowned brands and organisations seemingly participated for reputational benefits (Bartley, 2018). During the introduction of the international regimes, few firms manufacturing in Bangladesh affiliated with the Accord, others joined the Alliance, and several had avoided participation in either. While the signatories trumpeted their cooperation, little was revealed about those who had refused to collaborate (Anner, 2020). The Accord, with its legally binding character, could be perceived as a substitute for public authority where inspections and implementations were under the domain of the initiative instead of the state (Brookes, 2019). Bartley (2018) implied that while such initiatives may have proven to be more effective means for impelling labour-associated outcomes, they also detach local authorities from their accountability, and the government from amending domestic regulations and laws. Furthermore, while the Accord and the Alliance covered 1,984 factories which had business relations with foreign brands and retailers, the subcontracted RMG factories were not included, meaning that over 3,000 garment manufacturing factories were unprotected by these measures (McKinsey & Company, 2021).

The Accord and Alliance undoubtedly had reduced building safety-related issues, however problems like low wages, unpaid overtime, abusive supervision, corruption, unethical practices and rejection of unions and

collective bargaining had not been resolved and continue within the industry (Leitheiser, 2019). The regimes differed but were similar in many ways as summarised below (Anner et al., 2014, James et al., 2018):

- Both intended to achieve workplace safety within the RMG sector of Bangladesh.
- Both urged global firms to take responsibility for improving and monitoring working conditions.
- Both formed systems to inspect and at least partially fund remediation in supplying factories.
- Both aimed to incorporate garment workers but in different ways—while the Accord had envisioned a function for labour unions, the Alliance emphasised training workers and encouraged them to raise their voices regarding workplace concerns.
- Both gathered a group of stakeholders consisting of brands, retailers, NGOs, transnational authorities, civil society and global labour unions from the country's export-oriented sector.
- The Accord and Alliance concentrated on a specific set of issues instead of core labour rights concerns such as freedom of association and collective bargaining. Ironically, their regulations did not even include certain aspects of building safety, such as integrity of a workplace boiler room.
- Research, observations, reports, and findings indicate that despite resistance and challenges imposed by factory owners, authorities and government agencies, the two initiatives attained improvement in garment manufacturing factory conditions to some extent.

Figure 7.2

Building Accidents in Bangladesh after the Accord and Alliance

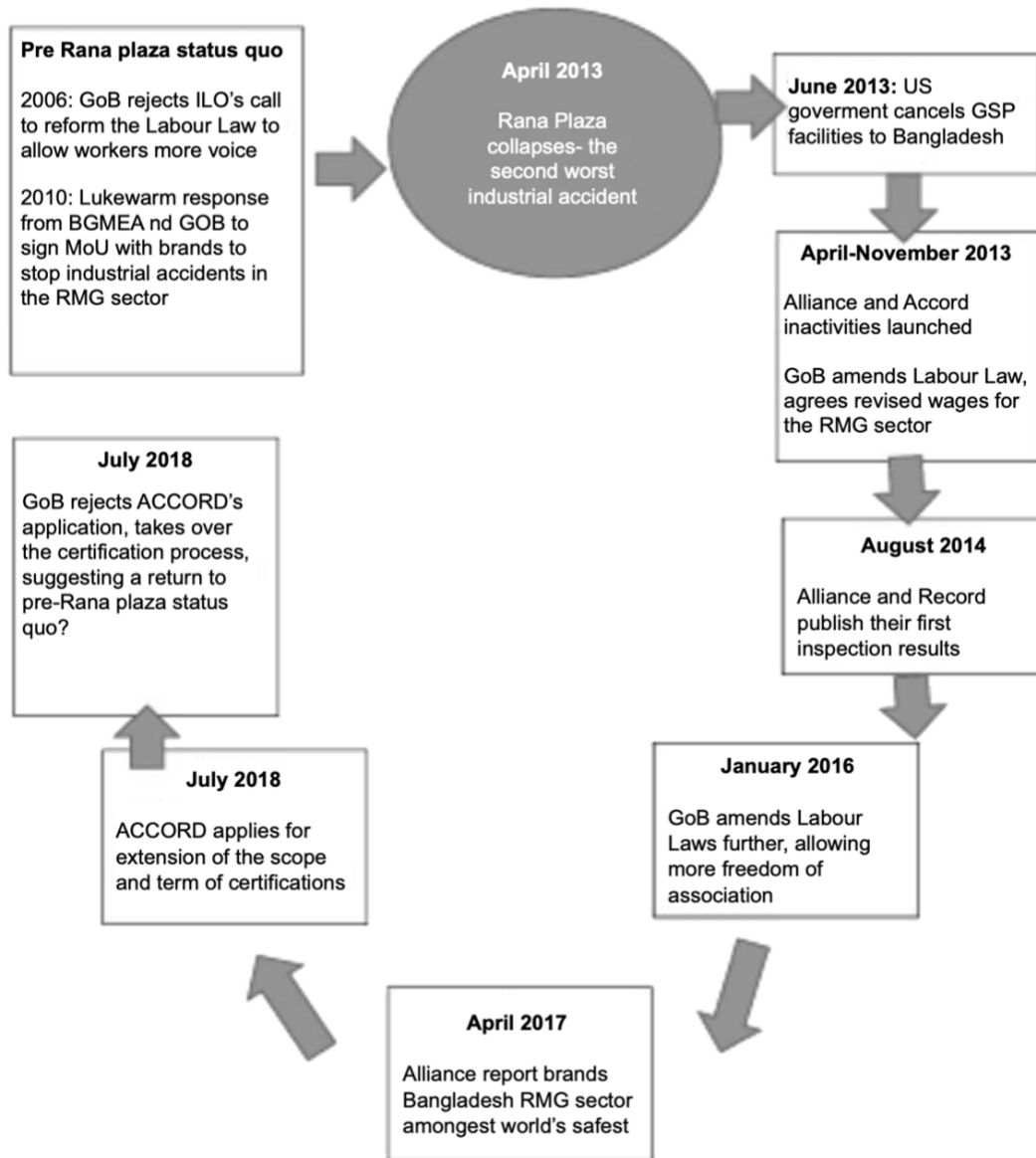


Note. Source: Dhaka Tribune (2021).

It has been revealed through several research studies that despite rigorous efforts made by the private compliance strategies, both the Accord and Alliance have been ineffective in sustaining modifications in labour safety standards. A range of explanations has been given to justify the unsatisfactory outcomes. It has been argued that the regulatory initiatives are significantly influenced by the magnitude of stakeholder pressure and the intensity of compulsion created on the manufacturers to improve working conditions (Miles et al., 2018). The effectiveness and sustainability introduced into inspection and remediation processes will depend on the allocation and articulation of responsibility between the concerned actors.

Figure 7.3

A Summary of Key Events post-Rana Plaza



Note. Source: Phail & Rahman, 2020.

7.4 The Present Regulator—the RMG Sustainability Council (RSC)

As directed by the High Court of Bangladesh in April 2018, the Accord's tenure could not be extended following a petition filed by a supplier alleging the agency of wrongdoing, as in the case of the Alliance mentioned earlier. Here too, labour activists were certain that the courts had been persuaded by

the BGMEA (CCC, 2019). The following month, the Accord was ordered to cease operations. They appealed to the Supreme Court and a hearing was scheduled for a year later. However, prior to the hearing, the Accord and the BGMEA agreed upon a transition plan that was submitted to the court. The court then decided that Accord was to continue its operation for another 281 days in order to convert to a fresh safety entity named the RMG Sustainability Council (RSC) (Accord, 2018). The Accord, the BGMEA, and the Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA) collaborated in January 2020 to initiate a time-constrained transition process of transferring the Accord's major functions in Bangladesh to the national RSC initiative (Accord-BGMEA, 2020). After the signing the "Memorandum of Understanding" with the Accord Steering Committee (comprising a neutral chair from the ILO, and equal representation of company and labour trade union signatories and NGO witness signatories) the BGMEA agreed to transition the Accord into the RSC, a permanent organisation comprising of equal numbers of representatives from RMG exporters, global garments companies and trade unions acting on workers' behalf (BGMEA, 2020e).

The RMG Sustainability Council is a separate, private initiative in accordance with the Bangladesh Government's regulations and authorities, governed by a board of directors, and formed to undertake health and safety inspections, remediation, training, and complaints about operational facilities administered by the Accord (Accord-BGMEA, 2020). According to the agreement, the RSC is required to continue the Accord's practice of complete disclosure of inspection reports and remediation progress to the public, and to preserve the independent complaints mechanism with its safety inspectors being sincere and independent with the capability to restrict non-compliant factories from manufacturing for foreign apparel brands (BGMEA/BKMEA, 2020). The RSC is intended to incorporate industrial relations, skills development and to enforce environmental standards to enhance workplace safety (RSC, 2020). The fulfilment of its purpose commenced with ensuring that all pending safety issues identified by the Accord through inspections were remediated and the labour management Safety Committees in RMG factories are equipped and invested to monitor and confirm workplace safety regularly (The

Financial Express, 2021). It agreed to assume all employers of Accord, their operations and protocols under its new entity (UNI Union, 2021).

Some of the RSC's significant features as claimed by the agency itself are as follows (RSC, 2020):

- Retailers/brands are in legal settlement with unions and have pledged to ensure safety through remediation of manufacturing units and ensure their feasibility and completion
- Transparency in the escalation protocol for non-compliant factories is maintained
- Complete public disclosure of inspection feedback and CAPs is maintained
- Safety Committee and Safety Training Programmes are delivered by certified trainers
- Neutral worker OHS Complaints Mechanisms are put in place
- Protection against reprisal for placing safety-related complaints and right to decline service within unsafe working conditions is provided
- Right to Freedom of Association (FoA) to make progress towards safety is promoted
- Boiler safety inspection programme is conducted.

The RSC (2020) undertakes to maintain and create a safe and reliable RMG sector as the chosen manufacturing source for global fashion business, and to promote further development and improvement in issues of safety. It aims to relentlessly work towards and sustain the development of a safe and sustainable RMG industry in Bangladesh within a tripartite approach inclusive of industry, unions and brands. These actors will mutually enforce a sectorial safety standard to control and prevent avoidable mishaps along with empowering factory management and workers' capacity building through training (Dhaka Tribune, 2022).

7.4.1 The RSC's Performance- Successes and Failures

The RSC, an unprecedented national initiative is yet to gain trust. The UNI Global Union (a global union federation for the skills and services sectors,

affiliations with 150 countries and representing 20 million workers) and IndustriaALL Global Union (representing 50 million workers in more than 140 nations serving across the supply chains in mining, energy and manufacturing sectors globally) have withdrawn from their collaboration with RSC, denying any credibility of the RSC as a reliable worker safety organisation (IndustriaALL, 2021a). These global unions refuse to accept the replacement of Accord, offering alternative suggestions developed by brands in response to the unsuccessful approaches of the Rana Plaza tragedy (UNI Global, 2021). Recently, global apparel brands have been insisting upon a revised framework for the future. The RSC initiative discarded the prime elements that had led to the acknowledged success of the Accord in establishing safety for workers in the factories of Dhaka and other cities. The UNI Global Union has expressed concern over the RSC's counter proposals, claiming that the country's garment factories have been led to a critical point, jeopardising the safety of millions of workers (UNI Union, 2021). The RSC recommended self-monitoring for factories, with factory owners taking full responsibility for any occurrence. The unions claim this is a dangerous step undermining the credibility of the organisation and fearing immediate consequences for workers' safety (UNI Union, 2021).

Presently, various details about the future of the Accord remain undecided. There are further apprehensions about the RSC's mechanism because of the involvement of certain brands and the BGMEA's potential control over the complaints practice and their authority to self-regulate (Miedema, 2020). The goal of the BGMEA eventually policing itself in an industry where it derives profits from is questionable. The RSC could prove its effectiveness if workers' representatives were to be given comparable voting power to the BGMEA and the concerned brands on its board of directors (Senate Committee on Foreign Relations, 2019). The Accord owes much of its success to its policy of penalising non-compliant factories by terminating their business interaction with foreign buyers. However, the BGMEA authorities have not clearly indicated their commitment to retaining this protocol and instead have suggested to withdrawing the utilisation declaration of non-compliant factories (IndustriaALL and UNI Global Union, 2018). The organisation has

reasoned that this escalation is more stringent since non-compliant factories that lose their utilisation declaration would be barred from exporting to any international destinations, as opposed to being exclusively barred from exporting to western nations where most of the Accord signatory brands were based (Honey, 2019). The uncertainty of the Accord's future during the period of its appeal to extend and transition resulted in both factory owners and brands delaying remediation. Hence some factories supervised by the agency remained risky, with unresolved hazardous issues (Sumon, 2020). Union leaders of the Bangladesh RMG industry asserted that the Accord's most phenomenal achievement was the decline in severe, deadly factory hazards and feared that its exit would have dire consequences for garment factories' workplace safety and labour rights. The Government was expected to commit to a comprehensive and dependable transition to ensure that the progress made by the Accord in developing factory safety standards would not be lost (Akhter et al., 2019).

On the other hand, the function of the Department of Inspection of Factory and Establishment has been somewhat obscured with the emergence of the RSC. The department that is responsible for approving factory layouts, responding to labour complaints, scrutinising occupational accidents, and ensuring safe working environments within factories, appears to have become powerless (Dhaka Tribune, 2021). The RSC apparently has not clearly specified that monitoring and regulatory authority will exclusively be under the DIFE while the RSC will perform a facilitating role rather than functioning as the state monitoring regime (ILO, 2020). This could lead to perplexing complexities for safety related issues.

Despite some progress having been made during its short period of service, the RSC has been observed to have certain limitations (Sumon, 2020):

- i. As mentioned previously, the RSC follows an escalation protocol comprising three stages: i) a notification regarding non-compliance from the signatory retailers to the exporting factories; ii) a notice or warning from the signatory brand/brands to the suppliers; and iii) termination of business interactions with signatory organisations when necessary (Accord, 2018). This system, which in case of extreme non-

compliance may result in termination, has been criticized for being ineffective in ensuring safety within the factories, instead compelling a steady operational relation with the DIFE to manage such matters.

- ii. It has been alleged that the RSC has demonstrated inadequacy in managing factories with severe structural and physical limitations. They have not revealed any formal structure or protocols for the methods of dealing with these factories in accordance with DIFE's overall safety framework.
- iii. Transparency has been questioned as the majority of the RSC's management officials and Board of Directors belonging to the BGMEA are factory owners themselves. As a result, labour signatories of the Accord, IndustriALL, and UNI Global Union have withdrawn from the RSC (Russell, 2020). The global unions have stated that they refuse to accept the replacement of the obviously efficient model of the Accord with an alternative proposition derived from brands which had failed for decades prior to the industrial homicide at the Rana Plaza (IndustriALL, 2021b). The General Secretary of IndustriALL Global Union (2021) objected to the proposal of "self-monitoring" as a risky step backwards, undermining the programme's credibility and foresees immediate negative consequences for the maintenance of safety within the supply chains. Adding to this, the General Secretary of the UNI Global Union (2020) protested that the brands had pursued an "Accord Exit" strategy without negotiating with their collaborators in safety work in Bangladesh and rejected being identified as a mere rubber stamp amidst a brand-industry partnership void of accountability and robust supervision. The Clean Clothes Campaign (2020) has also raised concerns for workers in the garment manufacturing factories, fearing more hazards if another agreement is not decided upon. However, the BGMEA is adamant that the RSC and the Bangladesh Government are entirely capable of conducting the highest standards of monitoring and inspections.

7.5 Chapter Conclusion

The globalised RMG sector of Bangladesh has benefitted through corporate international responses after the tragic incidents of the Tazreen Factory fire and Rana Plaza collapse. This study revolves around these two building tragedies and is motivated by the need to explore the allocation of responsibility among the actors, safety compliance practices and such other critical issues. These two factory disasters put considerable pressure on authorities to improve the safety culture around clothing manufacturing factories. After the passage of more than eight years since the tragedies, extensive safety improvements have been achieved but continued commitment is required if these are to be sustained (ILO, 2020). Experts believe that an effort led by the country itself should not be limited to the BGMEA or government authorities but must have provisions for workers and labour unions to protect their rights and themselves from unsafe workplaces while building a stronger economy for the nation (ILO, 2021).

The chapter reveals that in a globalised industry, tragedies, particularly those resulting from human errors or those that are seemingly preventable, attract attention from all over the world. Depending on their scale and nature, such impactful events can mark “critical junctures” in the development of policy approaches of a nation towards safety and sustainability. This global scrutiny may be capitalised upon to create the critical junctures at which to push for major regulatory reforms. It may be summarised from the discussions in this chapter that post-disaster the technology transplantation which resulted from pressure of global attention, did open the door for improvements in regulatory and safety regimes in Bangladesh.

The local working conditions extensively improved and international buyers had been convinced of the industry’s commitment to ensuring safe workplaces. The most fruitful aspect has been the country’s steady economy achieved through the consistent export of readymade garments despite two of the world’s worst factory building incidents. After the entry and exit of the Accord and Alliance, the “blame game” continues in relation to fixing responsibility for these avoidable building disasters.

The exit of the foreign actors, i.e., the Accord and the Alliance in 2019 and the handing over of regulating authority to the RSC, may be perceived as a major setback by those associated with the RMG industry. They may see this development as returning to the pre-Rana Plaza stage of weak regulatory governance by RSC—a local self-regulating body. However, if the RSC could prove its efficiency in sustaining the building safety improvements made through the interventions of the Accord and Alliance, correcting their weaknesses, they could provide safe workplaces within the RMG factories of Bangladesh overall. This could possibly be a significant, positive change for the industry.

The following chapter sets out to determine whether or not the reforms introduced through global intervention, triggered by global attention generated by factory disasters, are sustainable in the face of the contextual reality and limitations of a developing country.

Chapter 8: Findings

This chapter reports on the findings of field work comprising a set of interviews with resource persons and three questionnaire surveys, as discussed in Chapter 5. It reports on findings revealed through responses of the key actors who were interviewed. The questions prepared for these interviews address the research questions formulated to meet the research goals. These findings were made based on the opinions expressed by the interviewees, including practitioners (architects, engineers, and similar professionals), regulators (professionals from regulatory agencies), factory owners or management bodies, global partners (international buyers, the ILO, and others), and educators from relevant disciplines (such as architecture and engineering). The interviews comprised multi-response queries as well as open-ended questions where the interviewees were free to express their perceptions of additional related matters and bring insights from their experience and expertise. Information was also collected through surveys conducted among factory workers, students from relevant academic disciplines such as architecture and engineering, and residents of Dhaka who are either involved in, or familiar with, the RMG industry. They were provided with multi-response and close-ended questions, some of which were the same as those asked of the interviewees.

The following sections recount the findings gathered through perceptions of the interview respondents, their choices, and preferences.

8.1 Findings from Interviews

In this section, the interview questions are discussed under the Research Questions which relate to the interview questions.

Main Research Question:

How does external input from global stakeholders, motivated by industrial accidents, inspire confidence among local actors in delivering sustainable building safety within Dhaka's RMG factories?

Research Sub-Questions:

- *What is the status of Dhaka within the global production network of RMG industry?*
- *Who are the primary players of Dhaka's RMG industry and how are their roles allocated in ensuring safety within the garment factories?*
- *To what extent did high profile industrial disasters attracting external intervention by global stakeholders, serve as critical junctures in effective policy development regarding safety regulations within Dhaka's RMG sector?*
- *To what extent did external intervention help improve safety regulatory regime in Dhaka's RMG industry and clarify the allocation of responsibility among the local actors involved?*
- *To what extent was external input from global players effective in improving the sustainable safety governance model for RMG factory building regulations within the contextual reality of Dhaka?*

This set of five questions was designed to collect evidence to assist in constructing a response to the main research question. The interviews commenced with an ice-breaking opening question which focused specifically on the interviewee's line of work. The interview then proceeded with some broad questions on each actor's opinion on Dhaka's built environment according to their classification as actors or key players in the shaping, regulating or maintaining of safety within the built environment. The line of questioning then gradually converged their focus onto the issues of safety regulations and allocating blame for safety failures in RMG buildings. These are key elements of this research. Although the same questions were asked of every group of actors, a few questions were asked selectively to particular groups of actors that were customised to draw on their specific backgrounds or expertise. While the open-ended questions were aimed to encourage each interviewee to draw on their knowledge or experience in general, the close-ended ones were targeted to reveal specific views along a precise line of thought. The former provided a range of diverse information derived from their service and practice in the RMG industry, contributing useful insights into the reality relating to the safety issues within the built environment. The

latter were used to collect more “black and white” evidence that assisted in comparing each actor’s outlook on the same topic and structure a conclusion for this thesis.

8.1.1 Findings from Close-ended Questions on Dhaka’s Status in Aspects of Safety

The initial part of questions asked in interviews related to the research sub-question:

a) What is the status of Dhaka within the global production network of RMG industry?

This question is not targeted at a specific element of Dhaka or its built environment but seeks to ascertain the particular actor’s impression of Dhaka’s status within the global supply chain network of the RMG industry.

Safety, a core concern of this research, was incorporated in most of the interview questions. The following question sought to ascertain the interviewee’s view on whether the Dhaka region has a safe built environment, keeping in mind safety considerations in industrial buildings.

Interview Question #2:

Please indicate your level of agreement/disagreement with the following statement: In the context of safety measures (structural/fire/etc.) being considered and implemented in constructing industrial buildings, “Dhaka region has a safe built environment”.

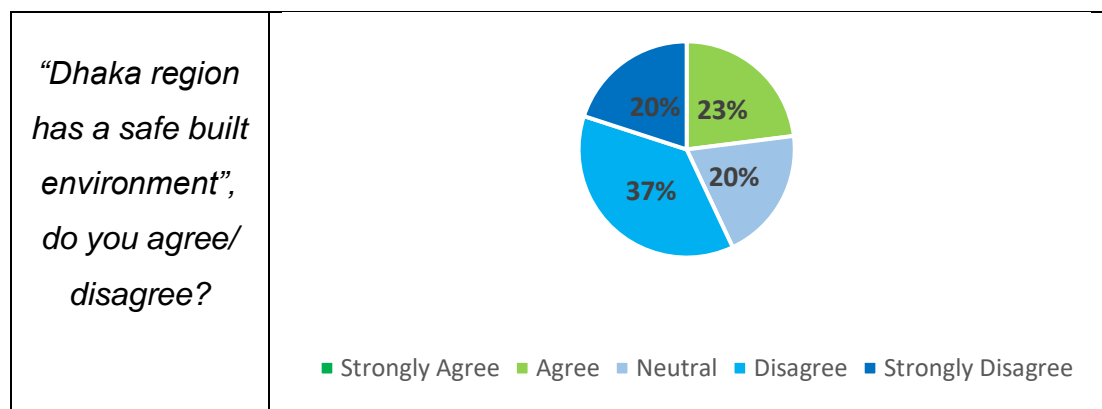
Although it is a close-ended question, the option for the respondent to elaborate about their selection provided additional information on various aspects of safety considered by the interviewee. The interviewees were encouraged to focus on their perception of building safety only and not on other aspects such as workplace harassment, or law and order issues. They were asked to express the degree to which they agreed or disagreed with the statement on the existing state of safety.

Figure 8.1 shows the integrated responses of all 30 interviewees across all actor groups. As detailed in Chapter 5, the interviewees included seven

practitioners, six regulators, six factory owners, six educators and five global partners. The pie chart exhibits result of their accumulated responses in percentage. It is clear that while none strongly agreed that Dhaka had a safe built environment, a little less than a quarter of the interviewees (23%) agreed. However, the majority either disagreed (37%) or strongly disagreed (20%) that Dhaka had a safe built environment. Another 20% remained neutral, neither agreeing nor disagreeing.

Figure 8.1

Views on Safety of Dhaka’s Built Environment



Note: 0% of respondents strongly disagree. Source: Author.

This question asked to all groups of actors assisted in establishing an overall impression about how the city’s built environment is perceived in terms of safety by those directly involved with shaping, regulating, or maintaining it.

The line of questioning was designed to extricate the issues related to Dhaka’s building safety in general and gradually shift in direction of the safety issues related to RMG factories. Hence, the next questions were as outlined below.

8.1.2 Findings from Open-ended Questions on Workplace Safety Practices

Interview Questions #3:

Do you feel “safety’ is often neglected while designing and constructing buildings in Dhaka region?

a) Do factors like aesthetics, deadlines, cost, visual impression, etc. take precedence over “safety”?

A significant part of this thesis is concentrated on investigating how safety tends to be overlooked or neglected, leading to potentially fatal consequences. The initial questions of the interviews were open-ended and gave scope to interviewees to express their opinion on the possible causes of negligence of safety when designing and constructing buildings which eventually conflagrates into building weaknesses and associated risk factors. All 30 participants had interesting points of view regarding safety considerations during the design and construct phases of building. While nearly all admitted that safety was not prioritised by architects and engineers during the design process, they also refused to blame them entirely for this negligence. A total of 21 participants believed that it is the clients/owners who compromise the implementation of safety measures in order to cut costs and keep the project within their budget. When in use, regular maintenance of the workplace is often neglected to minimise cost and/or make more profit. Among the participants, seven believed that cutting costs and meeting product delivery deadlines often take precedence over ensuring safety, but this tendency is motivated by practitioners and not always by owners. Interviewee O3, a factory owner, commented on practitioners’ reluctance to educate their clients who may be unaware of the consequences that may be faced owing to negligence of safety regulations. On the other hand, O5 believed that the situation is mostly driven by practitioners’ desire to maintain a good relationship with the client and not risk losing a building project. Based on the responses, the findings of these questions may be summed up as follows:

- Safety is often neglected while designing and constructing buildings.
- This negligence is perpetrated mainly by practitioners and owners/clients.
- Cutting cost and meeting deadlines take precedence over safety considerations.

The next question was more concentrated on the RMG buildings and the interviewees' perspectives on associated safety concerns. It uncovered the connection between Dhaka—the developing city—and its rapidly developing industry that could impact the region's overall living and working conditions and revealed interviewees' impression of the RMG workplaces.

Interview Questions #4:

Dhaka has been referred to as one of the “worst” or most “unliveable” cities of the world. Do you believe the state of workplace environment (significantly in RMG sector), has a role to play in building this reputation? How? Why?

a) What, according to you, are the primary concerning safety issues, if any, prevailing within Dhaka's garment manufacturing buildings?

b) Do you feel the RMG buildings can be called “sustainable” or have satisfactory workplace conditions? Why?

Out of the 30 interview participants, only one (P7) objected to Dhaka being called an unliveable city. The others, although convinced about the city's unliveable conditions, did not think that workplace environment contributed to that reputation. They held factors like air-quality, traffic, population and crime rate responsible for the deterioration of Dhaka's living conditions.

Responding to sub-question #4a, the interviewees considered the RMG workplaces to be satisfactory with regard to safety, while they identified cheap labour, excess production targets, and fire to be the most concerning aspects of the RMG industry. Moreover, while all 30 interviewees found the present condition of the RMG factories safe, they recognised the necessity of maintenance and strict regulatory procedures to sustain safety conditions

and make the industry sustainable. Interestingly, one participant, P4, a structural engineer by profession, expressed his concern regarding the newer RMG factories that had been constructed on the city's periphery, mostly over filled land. He pointed to the risk factors associated with these structures. Although these buildings may appear to be sustainable and safe, he feared that most of the structures may be standing on unstable ground.

The primary findings may be summed up as follows:

- Dhaka's RMG workplace environment is not perceived as contributing to the city's poor living conditions.
- Cheap labour, excessive production targets, and fire risks are the prevailing concerns within the RMG industry.
- Most of the recently-build RMG factories may be safe but proper maintenance and monitoring are required to sustain the safety conditions.

Following the opening questions about the city's overall built environment, the interview questions converged upon building safety and then further on RMG buildings and the workplaces within. This set of questions was common to all groups of actors/key players, seeking to investigate significant similarities and/or differences among the five actor groups' perspectives on building safety within Dhaka's RMG factories. Once it was established that safety was an issue within the city's built environment, particularly within the RMG factories, the questions that followed were more to-the-point and direct.

These were close-ended questions with the option to select multiple responses and included 'other' as a response option to allow the interviewee flexibility to bring to attention factors not covered in the listed options. The questions were also aligned to research sub-question 1(a) about Dhaka's status within the global production network and how/if the rapidly expanding global industry had created a negative impact of the city's built environment.

8.1.3 Findings from Open and Close-ended Questions on Responsibility and Blame

The next question asked to all 30 interviewees was:

Interview Questions #5:

Had the rapid development of garments industry led to frequent building tragedies/development of risky buildings within Dhaka?

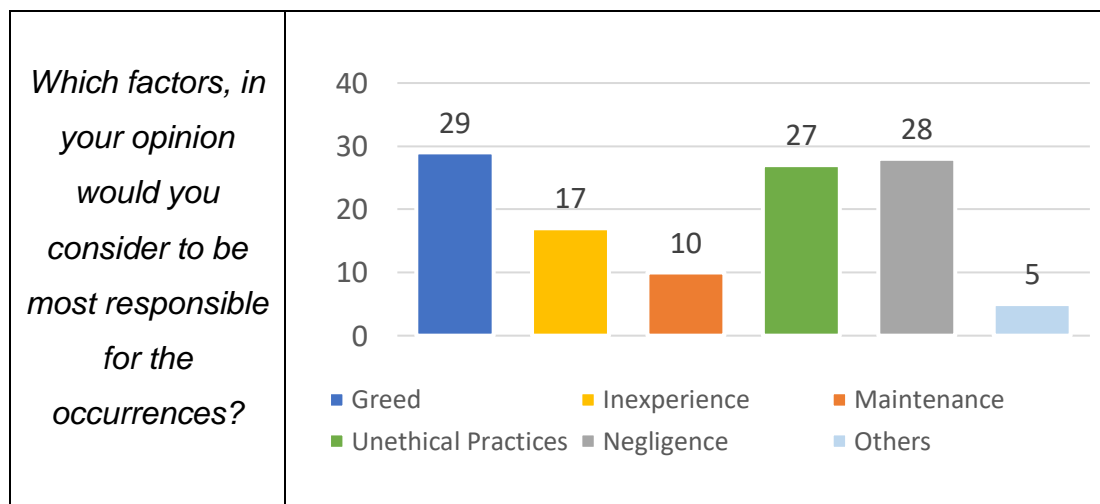
a) Which factors, in your opinion would you consider to be most responsible for the occurrences?

Sub-question 5(a), i.e., the second part of the question, was aimed at unveiling the aspects of behavioural complexities of the actors that may have led to human errors resulting in historic building disasters (Chapter 6).

Multiple responses were allowed for this question.

Figure 8.2

Factors Responsible for Negligence of Safety



Note. Source: Author.

As seen in Figure 8.2, the collective response of all interview participants pointed at 'greed' (29), 'negligence' (28) and 'unethical practices' (27) as the top causes of negligence of building safety. Following these three leading factors contributing to the disregard for safety, 'inexperience' was selected by

17 participants while 10 selected 'maintenance'. The selection of inexperience points to a perceived dearth of knowledge and skills among relevant professionals. The selection of maintenance points to a perceived reluctance on the factory owners' part to bear significant on-going expenditure. A few respondents selected the "Others" option to cite other causes of negligence, including 'unequal power relations', 'the ability of factory owners to conveniently escape penalty or accountability' and 'use of political influence'.

Roles and responsibilities of key actors within the RMG sector and the prevalence of the blame game is also a crucial topic for examination in this study. Having obtained substantial information on the actors' impression on Dhaka's building safety in terms of its RMG factories, the next step was to observe various aspects of responsibility and the tendency to blame others in order to address the second Research Sub-question simultaneously:

b) Who are the primary players of Dhaka's RMG industry and how are their roles allocated in ensuring safety within the garment factories?

The following close-ended question sought to take up this line of enquiry.

Interview Question #6:

How would you rate each of the following actors on the basis of accountability, on a scale of 1 (least) to 10 (most),) for the past RMG building disasters?

This question asked the 30 interviewees to allocate an amount of accountability on each actor with a request to elaborate their selection to help comprehend the logic or reason behind each participant's choice. It also helped in identification of the key players of Dhaka's RMG industry considered responsible for ensuring safety.

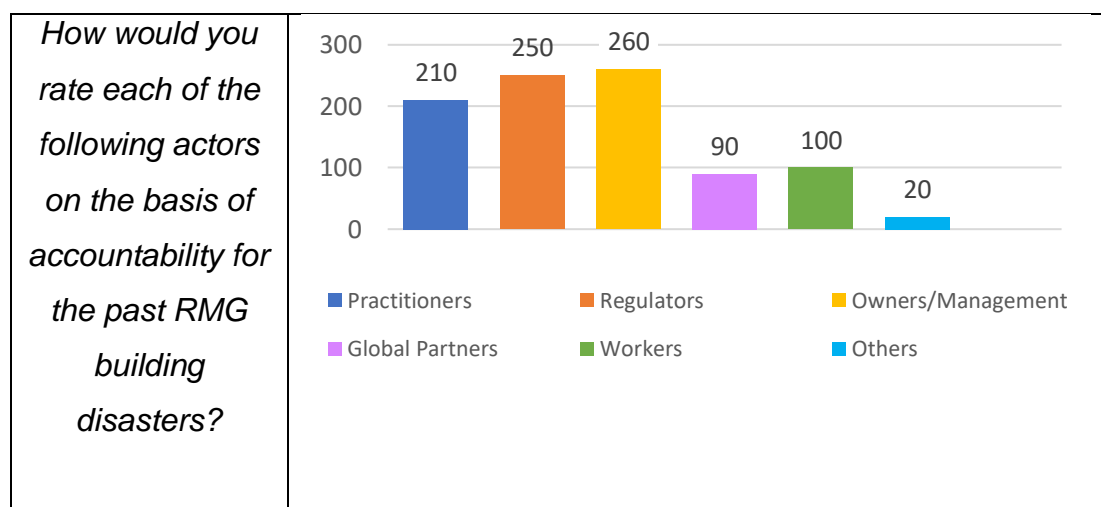
Furthermore, it assisted in forming an idea about the extent of blame or liability that each actor would direct at another, including himself/herself. This was intended to allow the mapping of the allocation of responsibility among the key actors responsible for sustaining safety within Dhaka's built environment as collectively perceived by those actors themselves. In addition

to the key actors listed, interviewees were provided with an option to name “others”, to ensure that the author’s bias does not rule out consideration of other actors who were important from the perspectives of the key actors being interviewed.

Figure 8.3 represents the responses delivered by the 30 interviewees where each actor group’s accountability score is displayed out of a total of 300 [total score (10) x total number of interviewees (30) = 300]. It is evident that the factory owners and regulators are mostly blamed for the past industrial building disasters closely followed by practitioners. Much of the blame for past factory occurrences have been placed on factory owners/management who scored 260 out of 300, closely followed by regulators at 250 and practitioners at 210. On the other hand, global partners comprising buyers received the lowest score (90) among all five actors. Meanwhile, the significant actors identified through the ‘Others’ option were contractors and media representatives. The scores assigned to each actor help conceptualise the response to the Research Sub-question “b” and verify the level of expectations among the actors for themselves and others.

Figure 8.3

Blame for Past RMG Building Tragedies



Note. Source: Author.

8.1.4 Findings from Open-ended Questions around Global Intervention

Aligned with the aim of promoting sustainable safety within the workplace, the core concern of this thesis was to investigate how external intervention through global players could improve building regulations to deliver improved safety that is sustainable. The second half of the interview thus extensively focused on prevalent regulatory practices in Dhaka's RMG factories and sought to understand the key actors' views on both local and global safety regulatory regimes. The questions sought to investigate the effectiveness of regulatory reforms, particularly those implemented through transnational regulatory regimes after the Rana Plaza tragedy. The last three research sub-questions were intended to explore the critical junctures in reformation of safety policies and working conditions within RMG factories and the effectiveness of external (global) intervention. The research sub-questions referred to are listed below.

Research Sub-Questions:

c) To what extent did high profile industrial disasters attracting external intervention by global stakeholders, serve as critical junctures in effective policy development regarding safety regulations within Dhaka's RMG sector?

d) To what extent did external intervention help improve safety regulatory regime in Dhaka's RMG industry and clarify the allocation of responsibility among the local actors involved?

e) To what extent was external input from global players effective in improving the sustainable safety governance model for RMG factory building regulations within the contextual reality of Dhaka?

The corresponding interview questions were designed to take account of the contribution of global input in effectively installing improved built environment safety in RMG factories that is sustainable. At the same time, these questions sought to investigate possible failures of local governance carried out through regulatory agencies. To do so, the following open-ended questions were put to all actors:

Interview Question #7:

How is the existing monitoring/auditing/regulating system?

a) Do you feel it is effective in enhancing the standard of garment factory buildings?

b) Do you feel that industrial buildings have had more frequent disasters in comparison to others? Why do you think that has been so?

c) What is your opinion regarding Alliance /ACCORD/others? Do you feel they are appropriate/effective for Dhaka?

A total of 24 interviewees disapproved of the existing monitoring system particularly that of RAJUK. The dominant concerns of respondents were corruption and unethical practices conducted by the national regulatory agencies. They objected to the design and construction approval procedure of RAJUK and other national agencies, pointing out that most buildings are not constructed as per the approved design. It should be noted that it is common practice in Dhaka to prepare two sets of architectural and structural drawings—one for submission to RAJUK for building approval and the other to be used for actual construction by the builders/contractors. Furthermore, it is extremely rare for violations committed by constructing buildings that deviate from the RAJUK approved building design to be challenged, as they are hardly ever inspected or reported unless a building disaster occurs.

A total of 24 participants doubted the agencies' effectiveness and sincerity in their conduct, referring to their customary lenience towards violators in exchange for bribes at various stages of design and construction, such as during granting permits for construction, allowing subsequent extensions (such as additional floors) to the buildings, or during routine site inspections. Interestingly, and contrary to this general view, two interviewees, R2 and R6, who are regulators themselves, insisted that it was not only the regulators to blame. Speaking from experience, they revealed that very frequently, the owners exploit their social status, their connection with the government or power to violate and/or escape regulations. While one interviewee depicted his demeaning experience of being forcefully confined within factory

premises while on an inspection visit, the other revealed how regulators are often lured with gifts or threatened so that they do not report any concerns identified during the monitoring process. The former interviewee also added that he was threatened by the owner and prevented from exiting the factory premises until he assured the owner that the building violations would not be reported. During this ordeal, he also received phone calls from higher authorities warning him not to go against the owner. The two regulators R2 and R6 saw such practices rendering the regulatory system ineffective in enhancing the building safety standards within RMG factory buildings.

Responding to question 7b, all interviewees unanimously agreed that industrial buildings have been subjected to more disasters than others and that RMG industry in Dhaka has experienced similar or more hazards compared to chemical, pharmaceutical, and other industries. A total of ten participants attributed this situation to governance and regulatory weaknesses. One respondent, E1, an educator, stated “because these industries are operated by multiple actors and are multi-dimensional, it becomes challenging to pinpoint one individual or group who may be held responsible for its vulnerabilities”. Another global partner interviewee GP2 stated, “the main users of these industries are uneducated workers who are unaware about their rights to safe working conditions and also their contribution in maintaining them. This aspect intensifies the risk factors within factories which is not the case for commercial/office buildings where the main occupants/users are educated people who are well aware of acceptable workplace conditions and also their rights”.

Many interviewees expressed their positivity towards the effectiveness of transnational regimes while responding to question 7c. All six of the interviewed owners and seven practitioners believed that because the foreign agencies’ involvement was fruitful the industry has learned enough from them to perform independently. They stated that the implementation of these external regulatory regimes need not be permanent. One architect, P5, additionally raised a question about the external intervention by global actors into the local regulatory regime after the Rana Plaza incident, asking “hasn’t any incident of such scale occurred in India or Pakistan? Had they

implemented foreign regulators then?” While 27 of the participants admitted that remediation progress and safety improvements were achieved through the external intervention and input, they also believe that local agencies like RAJUK or the DIFE could have been modified with more workforce and additional expertise to govern the RMG industry.

The majority of the responses may be used to summarise the findings as follows:

- The current regulatory system is ineffective.
- The national regulatory agencies are currently inadequate in enhancing standard of the RMG factories.
- Industrial disasters in Bangladesh are more common because industrial buildings are most vulnerable within the built environment.
- The Accord and Alliance had been effective in making safety improvements within the RMG industry, but the national agencies should be self-sufficient in proficiently conducting regulatory procedures.

The next open-ended question was intended to reveal the actors’ opinions regarding frequency of Dhaka’s building disasters over the past decade and their impressions about the Rana Plaza incident.

Interview Question #8:

What is your opinion on the rate of building failures that have occurred in Dhaka over the past decade or so in comparison to other such developing cities?

8a) Rana Plaza tragedy is undoubtedly the worst till date, who would you hold responsible for that incident?

8b) Was anyone held accountable or punished? Who/Why/How?

8c) Could that or other disasters be avoided?

More than two-thirds of the interviewees believed that the rate of building disasters in Dhaka was not higher than that of other developing countries. However, almost all agreed that the incidents that occurred within

Bangladesh were more highlighted by media, possibly owing to the country's enviable progress in this field and its global competitiveness as one of the top exporters. One participant said, "Dhaka's industrial built environment is highly risky and unsafe, but it appears to be resilient regardless and somehow manages not to have as many disasters as it may be assumed to experience in the given conditions!"

In response to question 8a, 16 participants blamed the owners for the Rana Plaza disaster while ten equally blamed both regulators and owners. The remaining four among the 30 respondents identified governance weaknesses and powerplay of factory owners as the primary factors responsible for the tragic outcome.

All participants were aware that owner of the Rana Plaza had been held accountable for the incident, but they also expressed their dissatisfaction about their manner of penalisation. One respondent, O4, who is a factory owner himself, stated "if the convicted owner of the Rana Plaza along with the regulators who had permitted the building's illegal extension and failed to shut down the factory in spite of identifying high risks just the day before the accident, had been served with exemplary punishment, such acts would not be repeated in the future". Unanimous responses to question 8c revealed that the Rana Plaza incident was indeed preventable.

The findings may be summed up as follows:

- The rate of building failures in Dhaka over the past decade is not striking in comparison to that in other developing nations, but it attracts more attention from global media.
- The owners and regulators were mostly responsible for the Rana Plaza incident.
- Although they had been held accountable, the penalty served did not match public expectations.
- The Rana Plaza incident was undoubtedly preventable.

The next question was predominantly based on regulatory system and reformations made in the aftermath of the Rana Plaza incident.

Interview Question #9:

Have there been any reformations in the regulating system post the incidents e.g., after Rana Plaza tragedy? What are they?

a) If so, are the revised regulations more effective, more powerful or more enforceable? Why? Why not?

b) What steps are taken by regulating bodies after a building tragedy? Do you feel they are adequate?

c) What are the more proactive measures you would suggest?

This study is primarily focused on learnings of Dhaka's RMG industry from the global response after the Rana Plaza incident. This question was intended to uncover the reformations that had been made within the regulating system at the critical juncture of the Rana Plaza disaster. All 30 interviewees agreed that significant restructuring of the country's regulating system had been implemented after the Rana Plaza tragedy, much of which was to revive the RMG industry's global reputation. However, 23 of the participants believed that many of these modifications were made only because of introduction of the external inputs- the Accord and the Alliance, while negligible contributions had been made by RAJUK, DIFE or other national agencies. Regular, transparent, and ethical regulatory procedures were practised by the transnational regimes and non-compliant factories had to face stern and inflexible consequences. The remaining seven participants out of the total stated that the reformations were the result of collective effort from the Government of Bangladesh, factory owners, the BGMEA and global partners like the ILO, international buyers and even consumers. However, all actors agreed in response to question 9a that the revised regulations were more effective in improving safety conditions within the RMG sector.

One respondent (R5), a regulator by profession, when replying to question 9b stated: "controlling a building tragedy involves several actors and initiatives— fire fighters, compensation, rehabilitation of the survivors, etc. So, it does not only depend on the regulating bodies alone, in fact, once an occurrence

already takes place, there is very little the regulatory agencies can do other than revising certain practices, rules or laws. But yes, prevention of disasters is highly dependent on regulators”. All participants invariably disagreed on the adequacy of regulatory authorities’ contribution after a building tragedy. They expressed their dissatisfaction with the steps that regulatory agencies undertake after tragedies. One participant, GP1, said, “local regulatory bodies mainly get entwined in blaming others after an accident rather than resolving issues among themselves.”

A total of 21 participants suggested enabling the local regulatory agencies through training, more workforce and knowledge. Three among the remaining nine participants believed that the transnational agencies should be retained, and others felt that regulators, practitioners, owners and others alike should be severely penalised for any violation and building mishap. All interviewee educators in response to question 9c suggested revising academic curricula that would concentrate more on building safety, industrial structures and even educate students on how to monitor or inspect buildings. One factory owner (O5) stated during his interview, “sometimes the building inspectors do not even know what they are searching for! They lack knowledge and expertise on the factors that can actually be identified as building weaknesses.”

The findings from this question may be summed up as follows:

- Adequate reformations had been implemented after the Rana Plaza however, they were contributed by foreign regulators rather than local regulators.
- The reformations were commendably effective.
- The national regulatory system has been negligibly reformed. Regulatory agencies need to be empowered with increased workforce, expertise, training, and education.
- Academic curricula also require revision to better prepare future practitioners.

One observation made through this research had been the “blame game” trend among key actors following any hazard-related incident. The next

question was aimed to understand if the actors, particularly the regulators, are fairly blamed for building incidents.

Interview Question #10:

It is customary to blame the regulatory system immediately after a building hazard- do you feel that is justified? Why?

a) Why do you think that happens?

b) Have you experienced any incident where the owner or builder has offered someone bribe to be lenient? How common is such a practice?

Although all participants believed that the regulatory system is customarily blamed after a building hazard event, only eight (six practitioners and two owners) admitted that it is justified. They explained that since regulators are involved from the very inception of a building to its construction and throughout its operation, their link with a building is therefore evident at every step and their contribution is hence more visible. They also added that prevention of accidents was principally the regulators' responsibility. Moreover, 23 of the participants elaborated that this blame is assigned mostly to regulators because they have earned a reputation of being corrupt and ineffective. One respondent responding to question 10a stated, "even the public views RAJUK as being corrupt, while no one will point a finger at a practitioner or a factory owner for their immorality or dishonesty" adding that "our local agencies have lost the public's trust".

No other actor group admitted to experiencing any such incident, but all confirmed that bribery was common. Only four regulators interviewed shared their experience about how they are pursued to agree to pre-warn the owners about supposedly random inspections, how even their families had received expensive gifts from factory owners and how they are often threatened or mistreated through misuse of power (also described in response to question #7). Additionally, two practitioners (P3 and P5) who are architects by profession, expressed their dissatisfaction with clients' attitude when less established architects are coerced into abiding by the owners' demands to violate regulations or risk losing the project. One architect said, "the nexus

between government, politicians and factory owners often results in misuse of power. Wealthy and powerful clients do not submit to a practitioner's knowledge or expertise and often threaten to appoint another practitioner if they are obliged to strictly follow regulations". Another practitioner revealed, "a client once asked me to design a 10 storeyed building on a plot where I was aware only five storeys were allowed. He assured me that he could manage to obtain permission (for the additional five storeys) from authorities. I was just starting my career then and could not afford to lose work.'

The findings may be summed up as follows:

- The regulatory system is customarily blamed after building disasters because the regulatory bodies are perceived negatively and have lost the trust of the common people.
- It is justifiable to blame the regulators more than other actors because they have the ultimate authority to enforce action to prevent building accidents.
- Corruption, misuse of power, bribery and threats are common practices and although not many admitted to having first-hand experience or direct involvement, they all confirmed these factors are a part of ground reality.

8.1.5 Findings from Group Specific Open-Ended Questions

Specific questions were asked of individual actor groups to focus more on each actor's role in ensuring building safety within Dhaka's RMG industry.

The following section reveals the findings from those sets of questions.

Specific Interview Questions to Educators (E):

- *Do you feel the curriculum gives equal emphasis on design and building safety?*
- *Do the students, in your opinion gain sufficient knowledge in building safety especially that of the industrial buildings to be able to prevent disasters during their practice as professionals?*
- *Have there been any relevant revisions in the curriculum post the incidents e.g. after Rana Plaza tragedy? What are they?*
- *Do you feel they had been adequate?*

The findings from these group specific questions may be summarised as follows:

- All six educators responded negatively to equal emphasis being given to design and building safety. All agreed that design, cost effectiveness, functionality and aesthetics take precedence over building safety in the current academic curricula of Bangladesh.
- Five out of the six educators interviewed believe students gain adequate knowledge on building safety during their coursework. However, all six agreed that while overall knowledge on building safety is delivered, industrial buildings are not specifically focused on.
- All educators interviewed reported the curricula were not revised in the aftermath of the Rana Plaza tragedy. Two interviewees (E4 and E6) explained that while curricula have been updated in response to advancements and requirements brought about by the era of globalization over the last few decades, the Rana Plaza incident did not initiate any modification within the system.
- None of the educators believe that building safety knowledge delivered is adequate for the future practitioners to prevent building disasters and moreover make the built environment sustainable. A number of educators also stated that students are not always able to perform with complete honesty when they become professionals as

the RMG is a multi-layered sector and they are manipulated by various aspects at every step.

Specific Interview Questions to Practitioners (P):

- *Do you feel you had been given adequate knowledge on building safety during your academic years? Why so?*
- *Are your clients made adequately aware about the building safety measures that require to be taken by the regulations?*
- *What role did the actors from your field of service play after the building tragedies in taking responsibility or accountability?*
- *Have there been changes since, in the way of practice?*

The findings from these group specific questions may be summarised as follows:

- A total of five practitioners among seven felt they had not gained adequate knowledge on building safety during their academic years. While the other two felt they were provided the knowledge, it did not particularly relate to any specific type of buildings. The practitioners revealed that the education was more focused on ensuring structural safety and even safeguarding buildings from break-ins or harsh weather conditions but rarely on fireproofing a structure or making it sustainable. Among them, six practitioners suggested that being a developing country, Bangladesh may not have yet acknowledged and embraced the concept of sustainability completely.
- All practitioners believe that most clients are unaware about building safety measures, and they remain convinced that they can conveniently escape from any consequence of regulatory violation.
- All seven practitioners, who were mainly architects and engineers, admitted that there has never been a case of holding any individual from their field, responsible for a building tragedy. Therefore, their role in the aftermath is limited. One architect (P1) made an honest

confession and said, “all we need to do is appear on TV and blame others”.

- None of the practitioners reported of any changes in their mode of practice following the Rana Plaza disaster. Two practitioners, however, suggested that steady progress of the globalised RMG industry and a safe built environment is interconnected with Bangladesh’s commitment to the Sustainable Development Goals.

Specific Interview Questions to Factory Owners (O):

- *Do you require the manufacturing/production units to be housed in properly designed building structures?*
- *Do you try to ensure that the buildings are adequately designed and structurally sound and operational safety protocol is in place? How?*

The findings from these group specific questions may be summarised as follows:

- All six factory owners or management bodies confirmed that manufacturing or production units were required to be housed in properly designed building structures and not in converted structures originally designed for other uses. One factory owner (O3) also added, “not only do they need to be appropriately designed for the purpose, but they should also be maintained accordingly. It is wrong to extend floors or overload floors with excess machinery and workforce than the permitted quantity.”
- All owners invariably ensured that their factories were adequately designed and structurally sound. Each one of them assured that all safety protocols are maintained, and the workers are provided with healthy and safe workplaces.

Specific Interview Questions to Regulators (R):

- *Do you feel regulators are rightfully known to be more corrupt than the other actors?*
- *Are the local regulators in your opinion, prepared to completely takeover monitoring responsibilities of the RMG industry?*
- *Are they equipped to sustain the reforms made by external regimes and prevent building disasters in the future?*

The findings from these group-specific questions may be summarised as follows:

- All six interviewees from different agencies including RAJUK, DIFE, Accord, Alliance, and RSC, expressed their discontent regarding their reputation of being corrupt. Two among them (R1 and R6) said it was easier to blame regulators as they represent the government, while all other professionals can shy away from accountability. Another regulator (R5) disclosed that corruption and bribery are present at all levels, but no one points the finger at those who are “wealthy and powerful”. A third participant raised the question that if the regulators are accused of bribery, shouldn’t those offering the bribe also be held accountable for corruption?
- In response to the second question of #R, four out of the six interviewees were confident that they were able to successfully conduct monitoring roles within the RMG industry. However, the other two pointed out that although they possess the required knowledge and expertise, the size of the workforce is grossly insufficient to oversee an industry with over 6,000 RMG factories just in the Dhaka region alone.
- All regulators interviewed were confident they had the capacity to sustain the reforms made by the external regimes. However, they expressed their concern about inadequacies relating to facilities, the workforce, and the supportive legislation that strengthened the Accord and the Alliance.

- The interviewees raised an important point, stating that as local regulators, they believed that factory owners are likely to use their status and power to dominate the national regulators which they could not manage to do with the transnational agencies who were directly connected with the international buyers.

Specific Interview Questions to Global Partners (GP):

- a) *Please discuss the monitoring process of ILO/your company in ensuring health and safety of garment factory workers within Dhaka region.*
- b) *When do you get involved with the safety environment of a garment manufacturing building?*
- c) *How does ILO/your company deal with RAJUK/RSC other concerning authorities regarding implementation of workplace safety?*
- d) *What steps can ILO/your company take if safety within workplace is not maintained or practised?*
- e) *What role did ILO/your company play after the building tragedies of the past?*
- f) *Did you take responsibility/accountability for the incidents?*

The findings from these group specific questions may be summarised as follows:

- The five interviewees representing global partners comprising international buyers and the ILO assured that they were committed to monitoring workers' health and safety within Dhaka's RMG factories. The three buyers informed about the interactions of their representatives residing in Dhaka with workers. The two ILO members indicated their involvement with workers' unions, owners, and global buyers.
- In response to the second question respondent GP1, the buyers informed that prior to finalising a work contract with a manufacturing unit, they collect all details regarding their factory conditions. The ILO

added that for any sector, they initiate involvement with concerned workers, starting from the very commencement of the workers' service at the workplaces.

- Both the international buyers and members of the ILO stated that they had no connection with RAJUK, but the ILO is linked with the autonomous government agency the Department of Inspection of Factories and Establishments (DIFE) and assigned labour inspection as their prime responsibility. However, it was revealed through further discussion that given the current situation, both the ILO and foreign buyers would require to deal with the RMG Sustainability Council for decision making purposes for implementation of workplace safety.
- All three buyers affirmed that they were at liberty to terminate business immediately in case of non-compliant behaviour by factory owners. The ILO members elaborated that they were authorised to take legal action, notify international buyers or the national government about any such concerns.
- In response to the fifth question of GP, none of the three international buyers disclosed any association with factories which had experienced disasters in the past. However, one made the assurance that if such a case arises, their company is committed to compensate victims and rehabilitate them. The ILO members disclosed that the Government of Bangladesh has not yet committed to all their conventions regarding workers' rights such as that concerning child labour. The ILO members also expressed their dissatisfaction at being unable to contribute effectively after the Rana Plaza incident as other external inputs had been implemented where the ILO had negligible responsibility. However, the ILO had formed NTPA, a regulatory organisation (discussed in chapters 4 and 6), to monitor the RMG factories that were not covered under the Accord or the Alliance.
- All respondents avoided an affirmative answer to the last question, with four of them claiming they were in no way responsible for the past building tragedies. One interviewee said, "a factory incident is not in our control as we are not building inspectors or owners, we are mostly not physically present within the manufacturing premises."

The open-ended questions offered scope for discussion on crucial subjects such as unethical practices, political influence on the industry and ground realities of acceptance for the global regulatory bodies. These questions exposed a plethora of views, actualities and facts which will be also further discussed in the final chapter (Chapter 9). The revelations made by interviewees in responding to the questions were vital to the conclusions drawn, and the recommendations made at the end of this study.

8.1.5 Findings from Close-ended Questions on Dhaka's future

The final part of the interviews was founded on closed questions delivered to all 30 interviewees to obtain precise information and strengthen the conclusive factors. They were designed with the purpose of addressing the main research question:

How does external input from global stakeholders, motivated by industrial accidents, inspire confidence among local actors in delivering sustainable building safety within Dhaka's RMG factories?

The first of these close-ended questions asked to the 30 interviewees was:

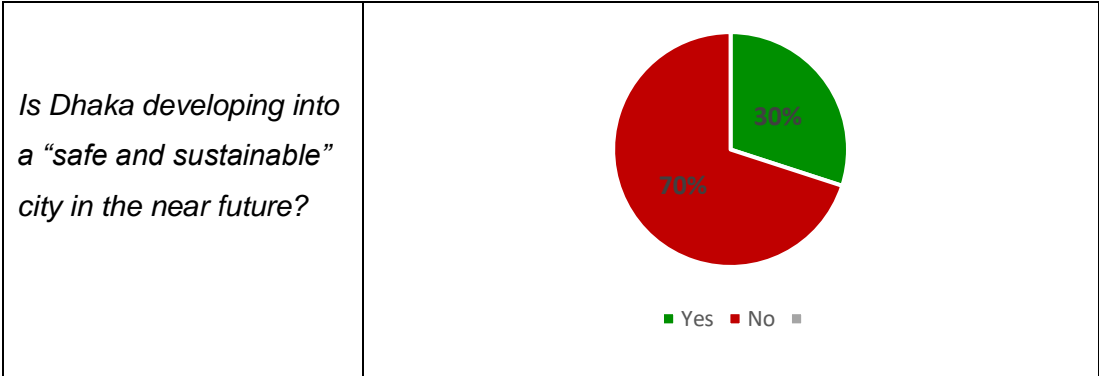
Interview Question #11:

Do you see Dhaka developing into a "safe and sustainable" city in the near future? Why?

Figure 8.4 demonstrates that while a vast majority of over two-thirds (21) of 30 interviewees responded negatively, the remaining nine were hopeful and none opted to be neutral. This reflected the actors' discontent not only with the city's present safety status but also its future.

Figure 8.4

Dhaka’s Progress towards a Safe and Sustainable Future



Note. Source: Author.

As shown in Figure 8.4, 21 (70%) of the respondents who reacted negatively identified a variety of other factors beside the city’s built environment that is hampering its living conditions and jeopardising its sustainability. Nearly 50% of them mentioned the city’s over-population, density, and traffic congestion as the city’s main problems. Others remarked on Dhaka’s crime rate, political situation, and corruption as factors impacting the city’s progress. The other nine participants who responded positively were hopeful about the city’s sustainable future. However, six out of those nine also expressed their concern that this would not occur in the near future—they believed it could take a few decades for Dhaka to be sustainable and safe.

The final aim of the research is to conclude if the actors within Dhaka’s RMG industry have learned significant lessons from the global agencies in promoting sustainable building safety that would contribute in preventing disasters in the future. The goal was to explore whether the current local regulatory authority the RMG Sustainability Council have earned the confidence of other actors in protecting the safety reformations made by the transnational regimes until their exit in 2019.

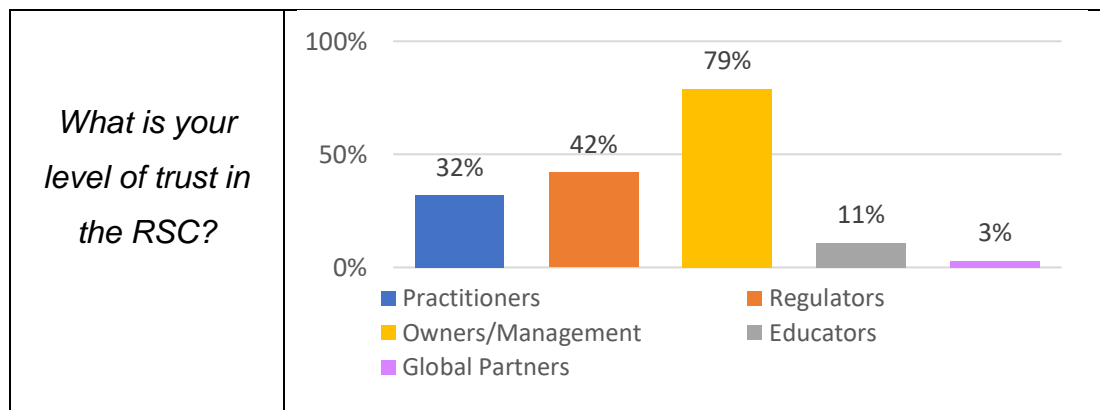
The interviewees were asked the following question.

Interview Question #12:

On a scale of 0-100% (0 being the least and 100 being the maximum), rate how much faith you have in the current local regulatory regime the RSC, to operate ethically and efficiently sustain the safety improvements that have been made by the external agencies after the Rana Plaza?

Figure 8.5

Level of Trust in RSC



Note: Method detailed in Chapter 5. Source: Author.

Figure 8.5 shows findings in percentages to express the level of faith/trust in the current regulating agency. The findings demonstrate that the factory owners/management had almost an 80% level of trust that the RSC was effective in sustaining the safety reformations made after the Rana Plaza incident. The regulators who were participants from RAJUK, DIFE, the Accord and Alliance expressed a 42% level of trust, while practitioners indicated a level of trust of approximately 30%. It is noteworthy that only a negligible level of 3% is expressed by global partners who are crucial stakeholders for this industry—including the foreign buyers and the ILO—and educators express just above a 10% level of confidence in RSC.

Moreover, to further elaborate on the level of responsibility allocated among the key actors, the interviewees were provided with a matrix as shown in Chapter 5.

8.2 Findings from the Matrix—Allocation of Responsibility

This matrix provided the option for interviewees to point out one or multiple options. The matrix focused on five significant elements of this study—safety, regulations, compliance, blame game and the future of the RMG industry. Individual responses of each of the five actor groups are shown here.

8.2.1 Individual Matrix Findings

The following table and figure display representation of individual responses of each actor group who participated in interviews. It is to be noted that the column for tendency to perpetuate the blame game has been separated as it does not involve responsibility for aspects of building safety but rather signifies a behavioural pattern of actors.

Table 8.1

Educators' Response to Allocation of Responsibility

Allocation of Responsibility - Educators' Response						
Key Actors	Creating Building Safety Awareness	Implementing Building Safety	Ensuring Compliant Behaviour	Preventing Future Building Disasters	Score	Who tends to perpetuate the Blame Game for past incidents?
Educators	*****				6	*
Practitioners	****	***	***	****	14	****
Regulators	*****	*****	*****	****	21	*****
Owners	**	***	***	*****	13	*****
Global Partners	***	*****	*****	*	14	*
Students	**				2	
Workers		**	**	*	5	*

Note. Source: Author.

Figure 8.6

Educators' Response to Allocation of Responsibility



Note. Source: Author.

Figure 8.6 and Table 8.1 represent the educators' responses regarding how responsibility for aspects of building safety is allocated among primary actors. On one hand they have allocated optimum responsibility to regulators and on the other, have named the factory owners as primarily perpetuating the blame game after tragedies.

Table 8.2

Practitioners' Response to Allocation of Responsibility

Allocation of Responsibility - Practitioners' Response						
Key Actors	Creating Building Safety Awareness	Implementing Building Safety	Ensuring Compliant Behaviour	Preventing Future Building Disasters	Score	Who tends to perpetuate the Blame Game for past incidents?
Educators	*****		***	**	10	***
Practitioners	*****	*****	*****	***	21	*****
Regulators	***	****	*****	*****	20	*****
Owners	*	***	*****	****	15	*****
Global Partners	***	*****	*****	*****	19	****
Students			***	*	4	
Workers		*	***		4	

Note. Source: Author.

Figure 8.7

Practitioners' Response to Allocation of Responsibility

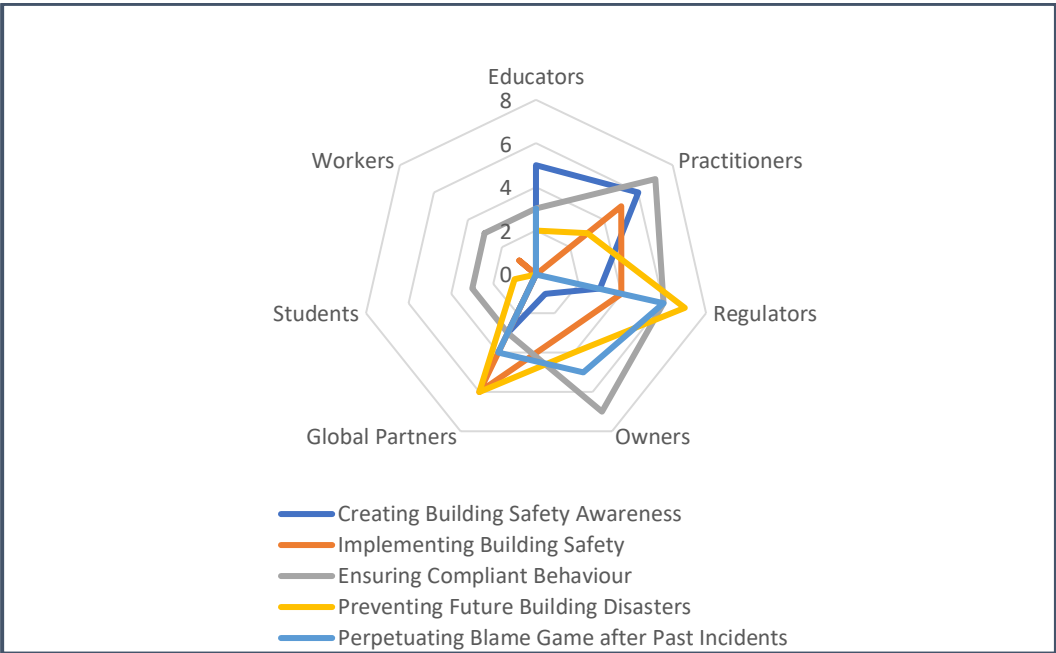


Table 8.2 and Figure 8.7 represent the practitioners' response regarding allocation of responsibility for building safety among primary actors. Noticeably, the practitioners have allocated optimum responsibility on themselves and have even named themselves and regulators in being equally liable for propagating blame after disasters.

Table 8.3

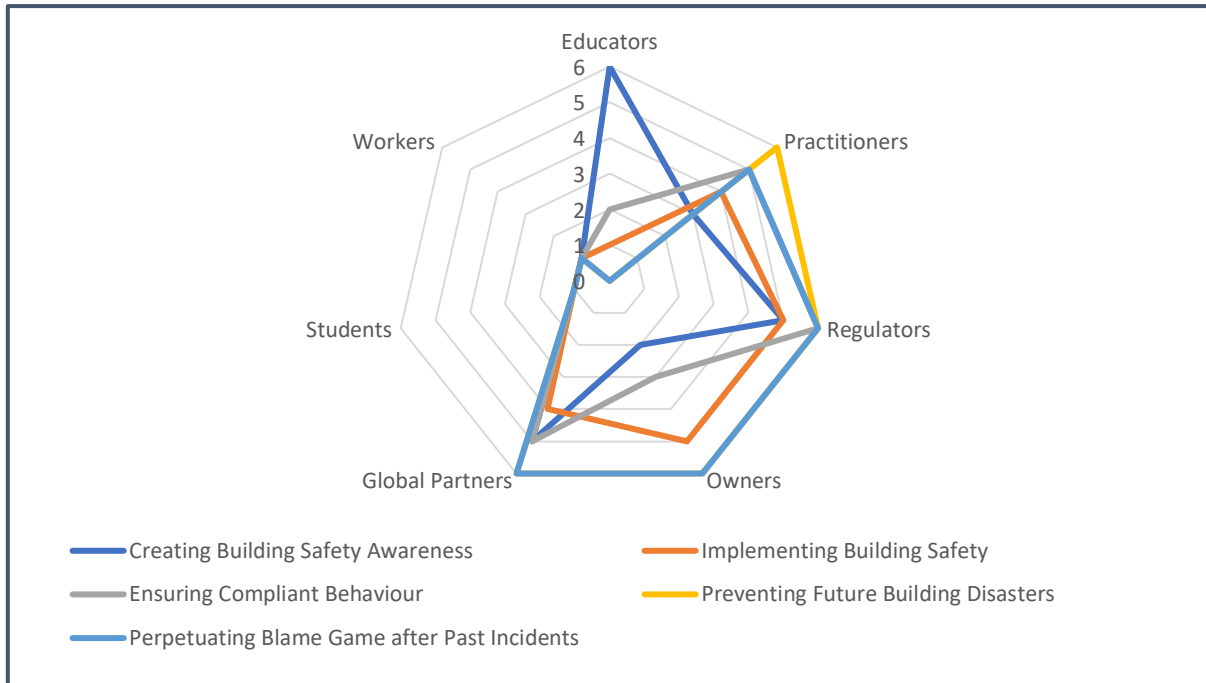
Regulators Response to Allocation of Responsibility

Allocation of Responsibility - Regulators' Response						
Key Actors	Creating Building Safety Awareness	Implementing Building Safety	Ensuring Compliant Behaviour	Preventing Future Building Disasters	Score	Who tends to perpetuate the Blame Game for past incidents?
Educators	*****	*	**		10	
Practitioners	***	****	*****	*****	18	*****
Regulators	*****	*****	*****	*****	22	*****
Owners	**	*****	***	*****	16	*****
Global Partners	*****	****	*****	*****	20	*****
Students			***	*	4	*
Workers		*	***		4	*

Note. Source: Author.

Figure 8.8

Regulators' Response to Allocation of Responsibility



Note. Source: Author.

Table 8.3 and Figure 8.8 represent the regulators' response regarding allocation of responsibility for building safety among primary actors. It may be noted that the regulators acknowledge their responsibility for ensuring building safety aspects and also hold themselves as much responsible as factory owners for their active participation in the blame game following any building tragedy.

Table 8.4

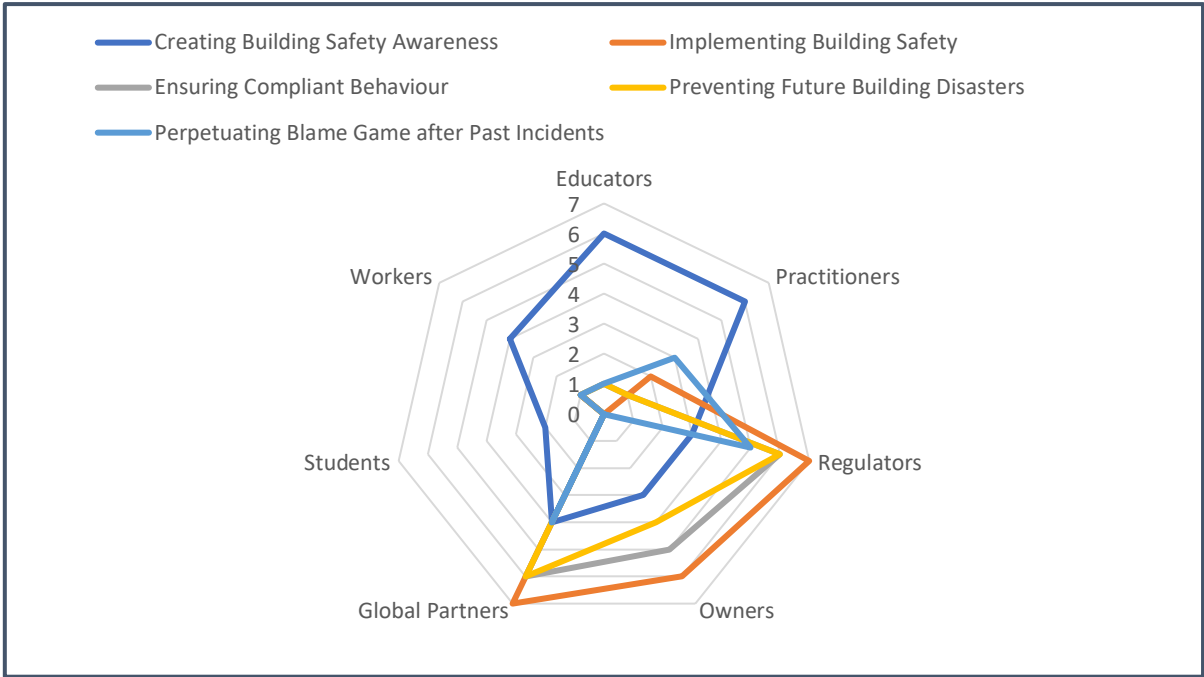
Owners' Response to Allocation of Responsibility

Allocation of Responsibility - Owners' Response						
Key Actors	Creating Building Safety Awareness	Implementing Building Safety	Ensuring Compliant Behaviour	Preventing Future Building Disasters	Score	Who tends to perpetuate the Blame Game for past incidents?
Educators	*****			*	7	**
Practitioners	*****	*	*	**	10	****
Regulators	***	*****	*****	*****	21	*****
Owners	***	*****	*****	*****	16	****
Global Partners	*****	****	*****	*****	20	*****
Students			***	*	4	
Workers		*	***		4	

Note. Source: Author.

Figure 8.9

Owner's Response to Allocation of Responsibility



Note. Source: Author.

Table 8.4 and Figure 8.9 represent the factory owners' response regarding allocation of responsibility for standpoints of building safety. It is evident that factory owners consider regulators to be most responsible for aspects of building safety and believe that they perpetuate the blame game after building incidents.

Table 8.5

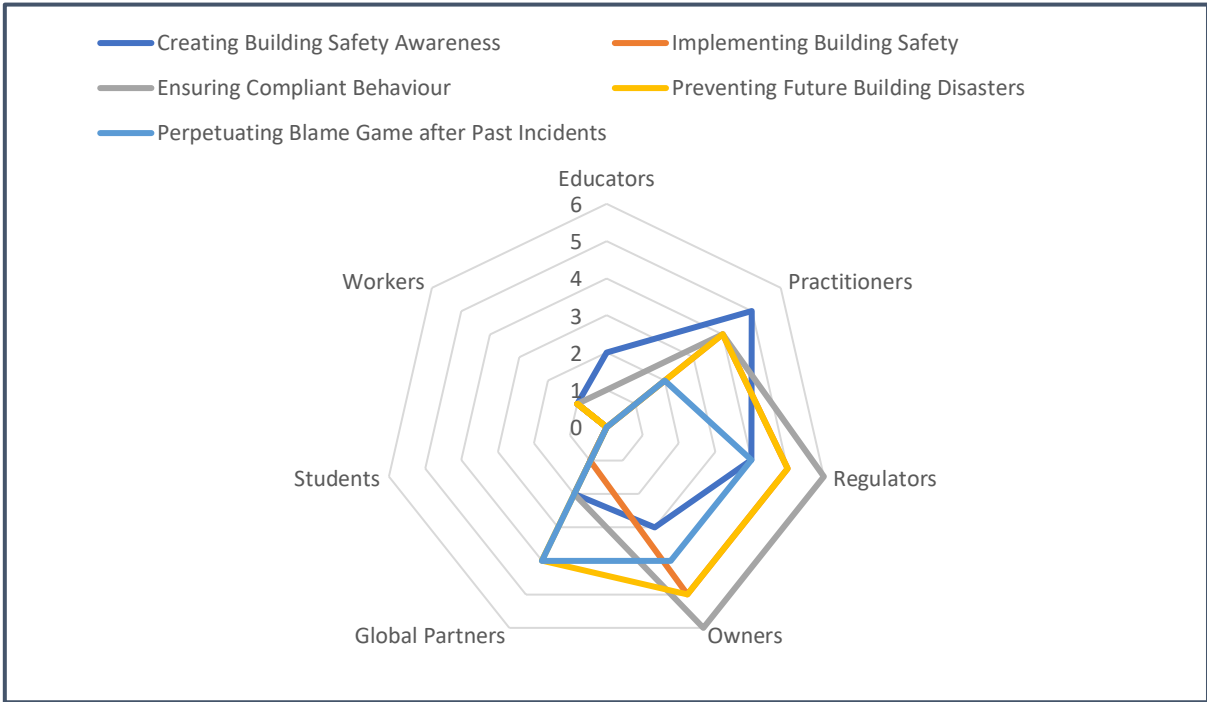
Global Partners' Response to Allocation of Responsibility

Allocation of Responsibility – Global Partners' Response						
Key Actors	Creating Building Safety Awareness	Implementing Building Safety	Ensuring Compliant Behaviour	Preventing Future Building Disasters	Score	Who tends to perpetuate the Blame Game for past incidents?
Educators	**			*	3	
Practitioners	*****	****	****	***	16	***
Regulators	****	*****	*****	*****	19	*****
Owners	***	*****	*****	*****	18	*****
Global Partners	**	*	*	****	8	*****
Students					0	
Workers	*	*	*	*	4	

Note. Source: Author.

Figure 8.10

Global Partners' Response to Allocation of Responsibility



Note. Source: Author.

Table 8.5 and Figure 8.10 represent the global partners' response regarding allocation of responsibility for different aspects of safety concerns. Among this actor group, the regulators can also be seen to be considered most responsible for ensuring building safety while they have blamed themselves along with regulators and factory owners for motivating the blame game after building tragedies.

8.2.2 Accumulated Matrix Findings

The findings from the matrix responses of all actors are presented in Table 8.6 and graphically presented in Figure 8.11.

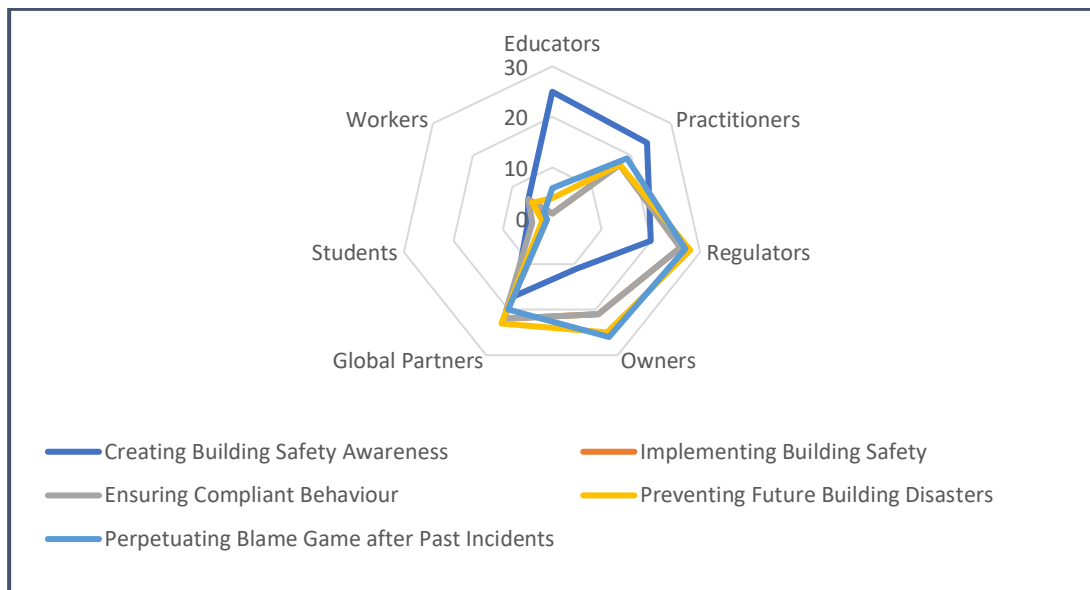
Table 8.6*Accumulated Findings on Allocation of Responsibility*

Allocation of Responsibility					
Key Actors	Creating Building Safety Awareness	Implementing Building Safety	Ensuring Compliant Behaviour	Preventing Future Building Disasters	Who tends to perpetuate the Blame Game for past incidents?
Educators	25	1	1	4	6
Practitioners	24	17	17	17	19
Regulators	20	26	26	28	27
Owners	11	21	21	25	26
Global Partners	17	22	22	23	20
Students	5	1	4	2	1
Workers	6	6	6	5	2

Note. Source: Author.

Figure 8.11

Accumulated Findings of Allocation of Responsibility



Note. Source: Author.

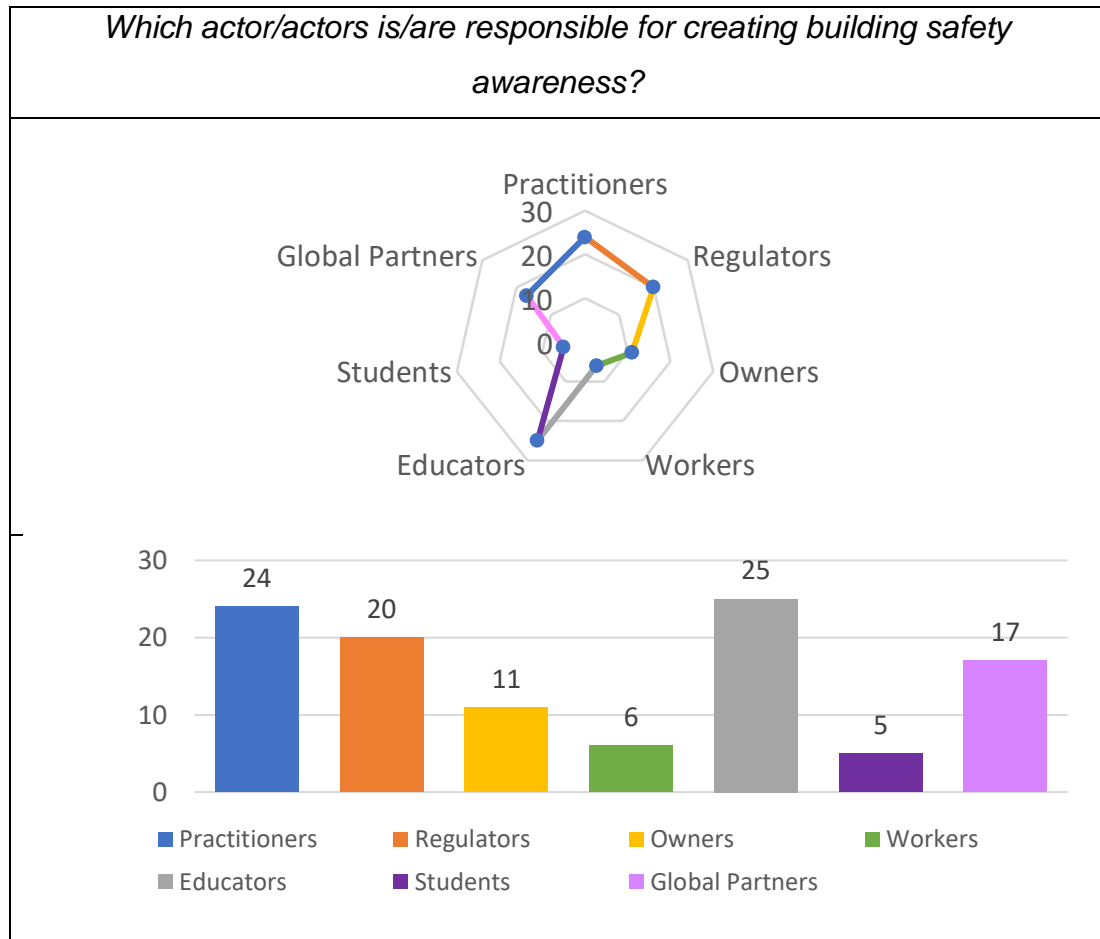
The educators (score 25) have acquired optimum responsibility for creating building safety awareness, closely followed by practitioners (score 24) and regulators (score 20). In the next category of implementing building safety, the regulators have scored highest with 26 points, while the global partners have scored 22, more than practitioners or owners. Compliant behaviour is similarly expected most from the regulators (score 26) and then from global partners and owners respectively. Responsibility for preventing future building disasters has been allocated mostly to regulators (score 28), owners (score 25) and global partners (score 23) respectively.

The last column in Figure 8.11a shows that the regulators with a score of 27 have been held most liable for perpetuating the blame game after building incidents. They are closely followed by owners with a score of 26 and global partners with a score of 20 respectively.

The following section diagrammatically represents accumulated findings of how definite responsibilities are allocated among the key actors.

Figure 8.12

Responsibility for Creating Awareness about Building Safety



Note. Source: Author.

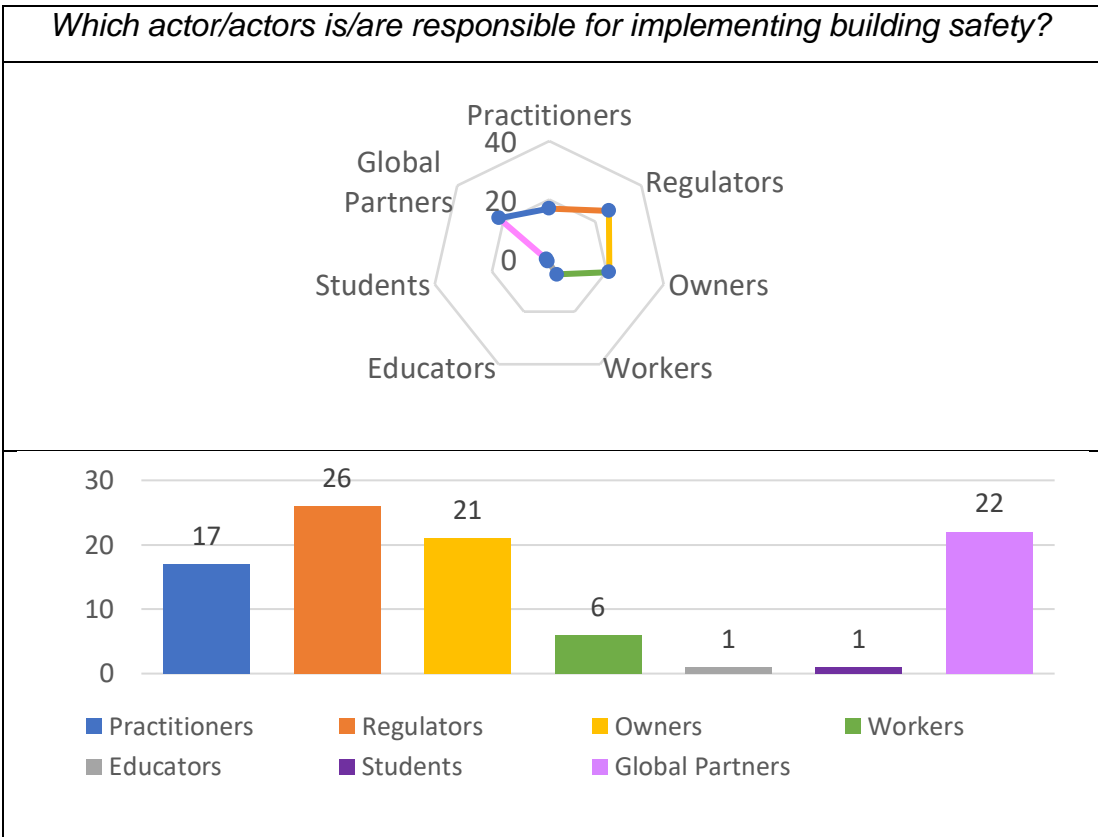
Figure 8.12 is a graphical representation of the frequency of responses received from each group of interviewees. It shows that educators have been held most responsible for creating awareness about building safety. All five actor groups comprising of 30 interviewees have primarily allocated the maximum level of responsibility for creating safety awareness to educators (25), practitioners (24) and regulators (20). Global partners have been allocated a higher level of responsibility for creating awareness regarding building safety than factory owners. A considerable level of responsibility is also expected from students and workers.

8.2.3 Responsibility for Implementing Building Safety

This was included in the matrix to determine if each actor perceived their individual duty to implement appropriate measures for safety within factories. Figure 8.13 represents the frequency outcome derived from the response of each of the interviewees about their perception of the level of responsibility each actor was assigned with for implementation of safety measures.

Figure 8.13

Responsibility for Implementing Building Safety



Note. Source: Author.

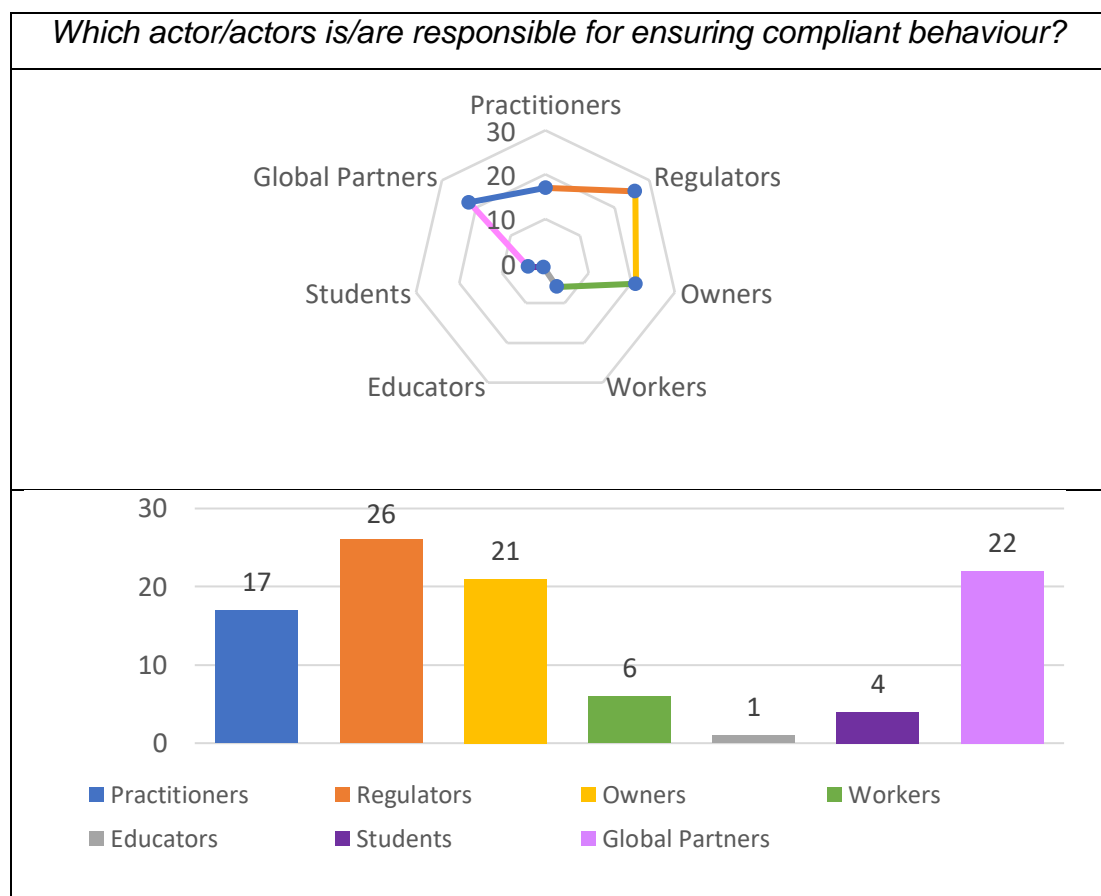
It can be seen that while regulators (26), global partners (22) and owners/management (21) are mostly expected to apply safety precautions, a considerable amount of responsibility has also been allocated upon practitioners (17) and even workers (6) while educators and students have attained a negligible level of responsibility for implementing building safety.

8.2.4 Responsibility for Ensuring Compliant Behaviour

This aspect was presented in the matrix to get an overview of the level of responsibility regarding ethical practices of abiding by building laws and regulations. As evident in Figure 8.14, the regulators at a frequency of 26 are placed on the top position for observing rules and regulations. However, it can be observed that global partners and owners are at 22 and 21 respectively while practitioners are at a frequency of 17. The level of expectation for compliance is the lowest for educators while workers (6) and even students (4) have been allocated some level of responsibility for compliant behaviour or practice.

Figure 8.14

Responsibility for Ensuring Compliant Behaviour



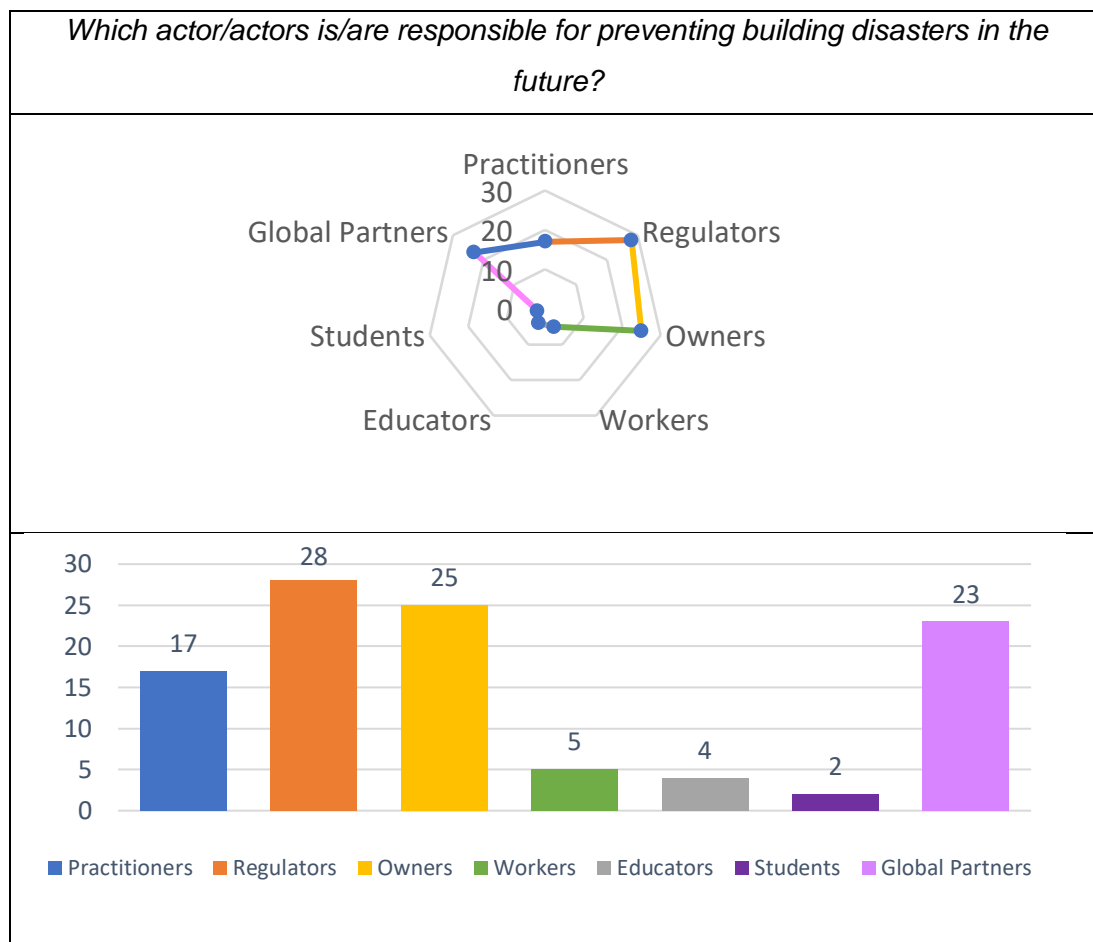
Note. Source: Author.

8.2.5 Responsibility for Preventing Future Incidents. This intended to identify which group of actors according to the participants were yet to act

responsibly even after the reformations made by external regulators and thus would be deemed as encouraging factory building hazards. It was aimed at achieving an impression about which actor is expected to be most responsible for preventing building disasters in the future. Figure 8.15 clearly shows, the regulators have been given the utmost level of responsibility for safeguarding the future.

Figure 8.15

Level of Responsibility taken for Preventing Future Building Incidents



Note. Source: Author.

Owners/management (25) and global partners (23) are equally responsible and have been positioned as second and third to regulators (28) respectively. Practitioners bear a frequency of 17 while a mere five has been allocated to factory workers, four to educators and two to students.

This finding assisted in revealing that although the level of blame for past building disasters was put the owners for the most part (as shown in Figure

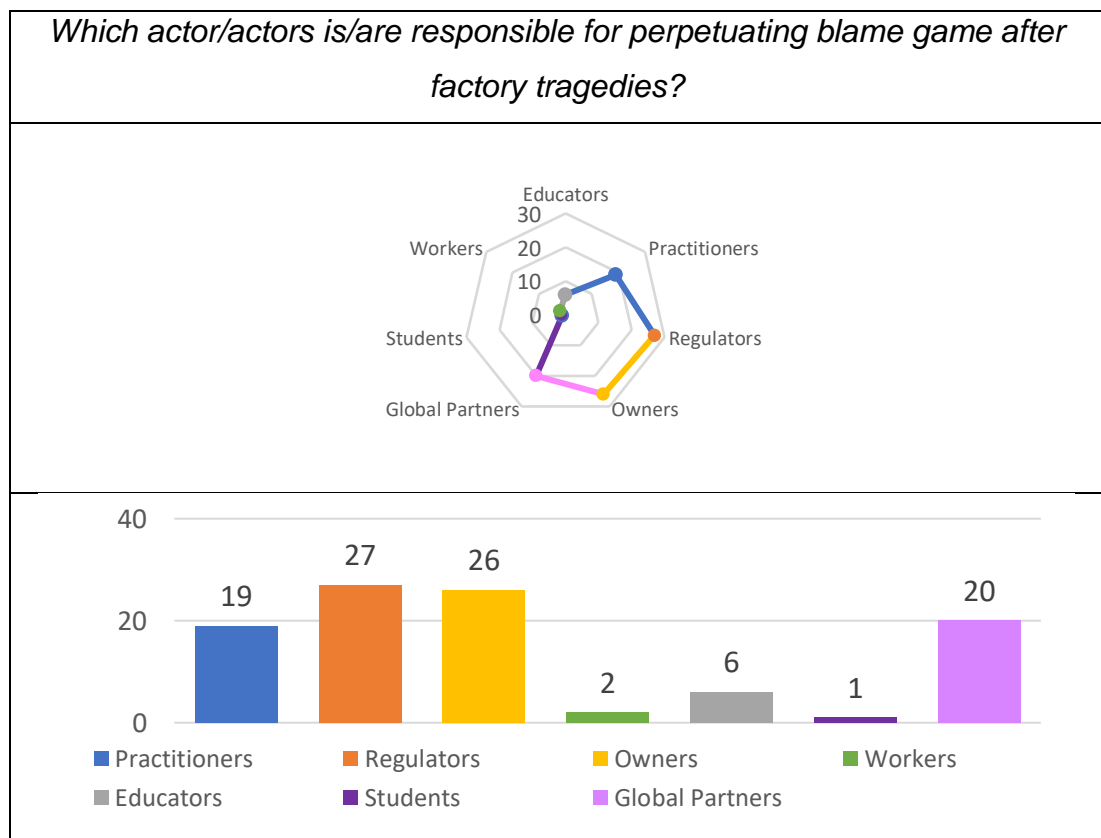
8.3), compliance is, after all, expected mostly from regulators and global partners.

8.2.6 Perpetuating the Blame Game after Past Factory Building Tragedies

Tragedies. This was conducted to attain an overview of the conventional blame-game that trends after almost all building incidents.

Figure 8.16

Tendency to perpetuate Blame Game after Past Factory Building Tragedies



Note. Source: Author.

Figure 8.16 demonstrates the interviewees' inclination towards the regulators (27) and owners (26). This reveals that the interviewees believe that regulators and owners showed the highest tendency to become involved in the blame-game after past building tragedies. Similarly, while global partners are at a frequency of 20, practitioners are at 19, showing that they too have a considerable amount of involvement in the blame-game. Educators (6), workers (2) and students (1) have been allocated negligible level of involvement.

There were a few open-ended questions within the interviews that were specifically targeted towards particular actor groups. Such questions were based on each actor's expertise, experience or contribution and were therefore, group specific. For instance, global partners were asked to discuss their role after building tragedies or regulators were probed about corruption. The findings were valuable and highly useful in making recommendations and drawing conclusion. They have been utilised for discussion and making recommendations in the final chapter.

The interviews were concluded with three more close-ended questions that were also provided for surveys and will be discussed later in this chapter under Survey Findings.

8.3 Findings from the Surveys

8.3.1 Response of Workers

The purpose for conducting surveys has been elaborated in Chapter 5. The intent behind surveying RMG factory workers was to assess their level of satisfaction regarding the safety conditions within their workplaces and to cross-examine the information acquired from the actors that were interviewed, especially employers, i.e., factory owners and managers. Workers are the most affected and vulnerable to safety failures and risks in factory buildings. The impact of occupational accidents can be life-long for the workers and so their understanding of the aspects of building safety is vital.

A set of survey questions was aimed at assessing the workers' trust in the system and their expectations regarding the future. The survey was conducted among 50 RMG factory workers from nine different manufacturing factories within the region of Dhaka.

In order to investigate the level of satisfaction among factory workers, close ended questions were provided to get responses to-the-point. It was attempted to keep the questions direct and simple as well so that they could be easily communicated to workers with limited knowledge or education.

Similarly, to the interview questions, the queries for the surveys were aimed at addressing the research questions and the primary themes of this study: building safety, regulatory reformations after the factory disasters and the prospects of the RMG industry under the local regulatory controls.

The most crucial findings revealed from the surveys are presented below.

The question below sought to assess the extent to which workers found the buildings constituting their workplace to be safe.

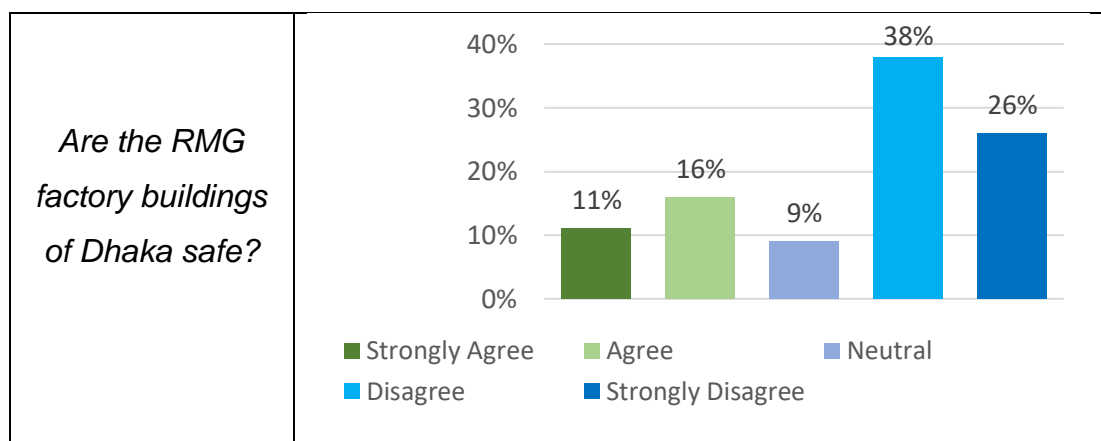
Survey Question #1:

Garment factory buildings, functioning/operating presently, are not risky and the overall built environment of Dhaka is safe.

Figure 8.17 displays the findings derived from responses of 50 workers from nine RMG factories. While just above a quarter (27%) of respondents have a positive impression of garment factories and Dhaka’s overall built environment, over two-thirds (64%) either disagreed (38%) or strongly disagreed (26%). Around 10% of respondents remained uncertain. It is evident that most garment workers felt threatened within their workplaces.

Figure 8.17

Views on Risk Factors of RMG Factories and Safety of Dhaka’s Built Environment



Note. Source: Author.

The next queries focused upon the workers' impressions about their individual workplaces and the safety situation of the factories they worked in:

Survey Question #2:

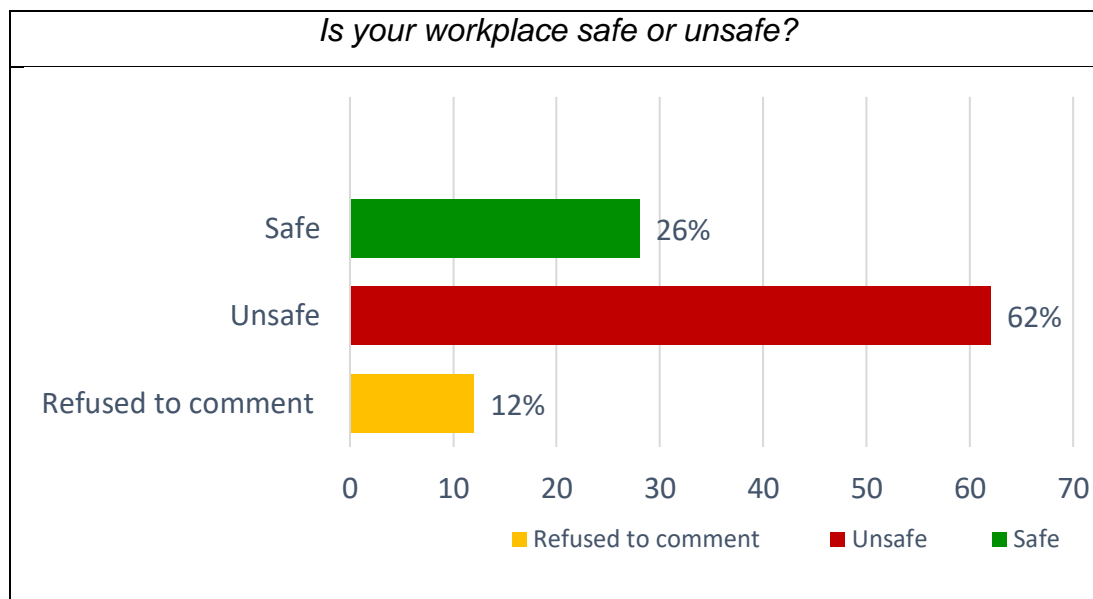
Workers' opinion on their working environment:

a) Safe b) Unsafe

Figure 8.18 is a graphical representation of accumulated responses of the 50 factory workers. Almost two-thirds (62%) of the workers indicated that the buildings they worked in were not safe while 26% had a positive opinion. It is noteworthy that 12% refused to comment on this question.

Figure 8.18

Level of Safety at Workplace



Note. Source: Author.

Literature and desktop reviews suggest fire is a prevailing threat within the RMG factories. The following question sought to verify if, after experiencing the Tazreen factory fire, the industry has learned to alter operational behaviour within workplaces. The workers were therefore, probed about their management practices regarding fire safety.

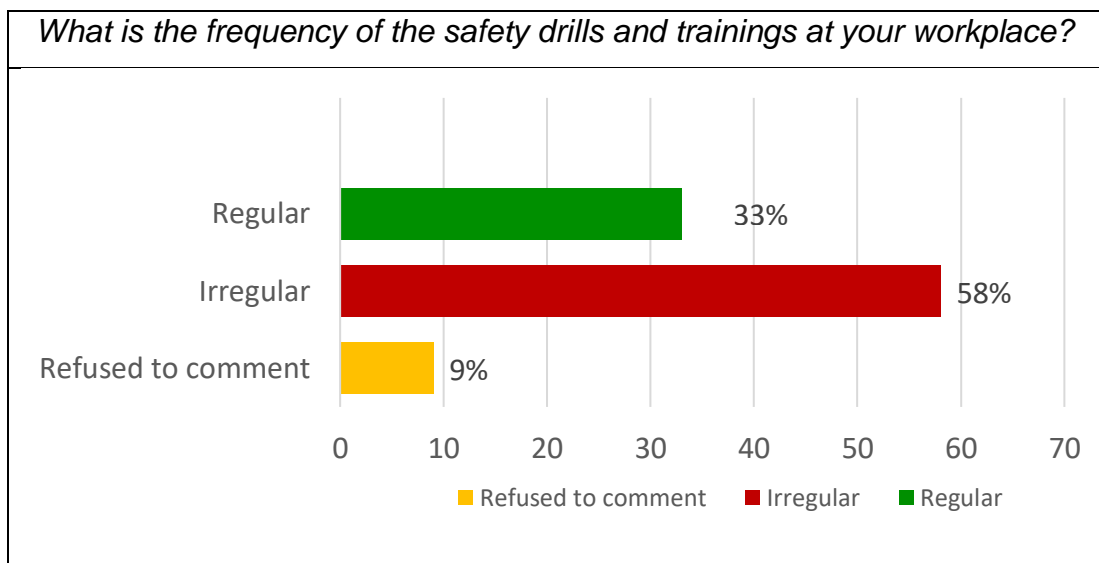
Survey Question #3:

What is the frequency of fire drills and other fire related precautionary trainings within your workplace?

a) Regular b) Irregular

Figure 8.19

Frequency of Safety Drills



Note. Source: Author.

Figure 8.19 shows the response of the 50 workers where 58% revealed that safety routines such as evacuation methods, drills, etc. are irregular practices at their factories. However, a third (33%) of the respondents claimed regular safety drills and training, while 9% refused to comment.

The next set of survey questions sought to determine whether the 50 factory workers trusted the government/BGMEA/RSC or other regulatory regimes to take appropriate action if an incident were to occur and they were deserving of compensation. The workers were asked to express their degree of agreement/disagreement to a statement regarding the possibility of their being compensated and those responsible being held accountable and penalised appropriately in case of a workplace accident.

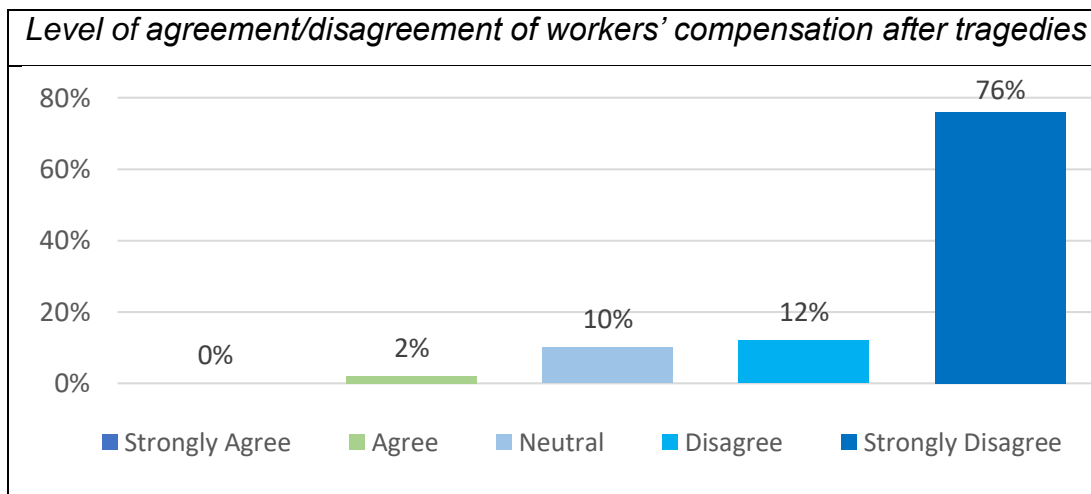
Survey Question #4:

Level of agreement/disagreement on: the victims of any possible workplace accident will be compensated and those accountable will be penalised accordingly by authorities like the government/BGMEA/RSC.

As seen in Figure 8.2 over three-quarters of the workers surveyed strongly disagreed (76%) while another 12% disagreed with the statement that that they would receive compensation and those held responsible would be punished after a workplace accident. Only one respondent representing a tiny percentage (2%) of workers believed that there was such a possibility, while 10% chose to remain neutral.

Figure 8.20

Possibility for Compensation and Penalisation after Workplace Hazards



Note. Source: Author.

Finally, question 5 was about blame and accountability of actors for past building tragedies where workers could make multiple choices.

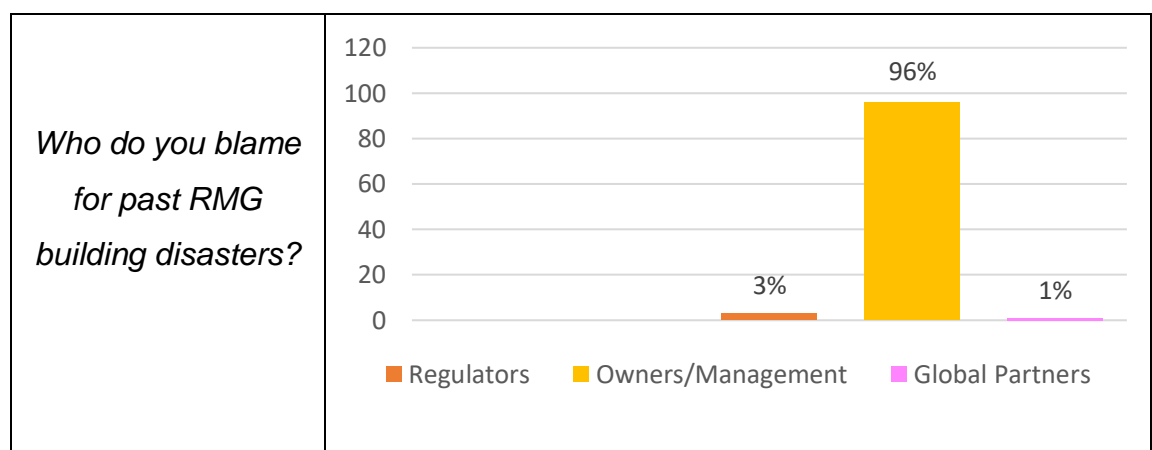
Survey Question #5:

Who would you consider most responsible for the previous building tragedies over the past decade that took place within the region of Dhaka?

The findings from responses of actors to a similar question have been described earlier in this chapter (Figure 8.3) for the purpose of drawing comparisons and observing the differences or similarities among each actor group's response. Figure 8.21 presents workers' collective response to this question. It is worth noting that almost all (96%) workers blamed factory owners and management for the previous building disasters while a few respondents also blamed regulators (3%) and only 1% blamed global partners. The rest of the actors were not blamed at all by any worker.

Figure 8.21

Blame for Past RMG Building Tragedies



Note. Source: Author.

8.3.2 Response of Students

The other group of actors surveyed were the students belonging to disciplines such as architecture or engineering, so they have no practical experience and limited knowledge regarding building and regulatory issues. Sixty students from seven different universities were surveyed.

Students who are the future practitioners were surveyed for understanding their level of education or knowledge on building safety. The survey questions sought to comprehend the level of preparation and understanding of future practitioners/professionals towards contributing to the safety of Dhaka's built environment. The survey questionnaire was designed to gather evidence on the curricula of relevant disciplines and observe the adequacy of knowledge on building safety being provided to students.

The questions were mostly close-ended with option to choose more than one where applicable. Some of the most important findings are mentioned here.

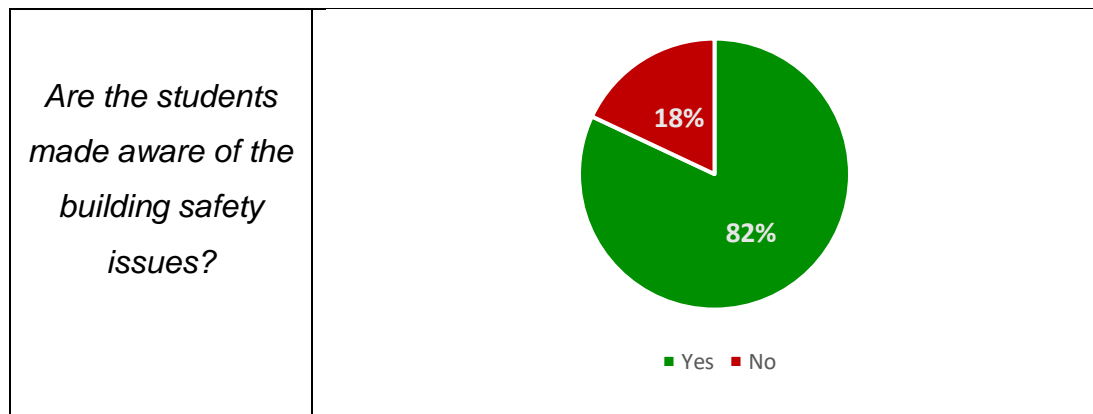
Survey Question #1:

Are the current students made aware of the “safety” issues to consider during the design process?

The encouraging revelation made by the students can be seen in Figure 8.22 where 82% of the students confirmed that they were provided with substantial awareness of building safety. The other 18% however, disagreed.

Figure 8.22

Delivery of Education on Building Safety



Note. Source: Author.

As negligence of safety is of high importance for this research the next question asked was similar to that asked to practitioners. Students were asked to express their agreement or otherwise with the statement regarding the attitude of architects towards prioritising safety.

Survey Question #2:

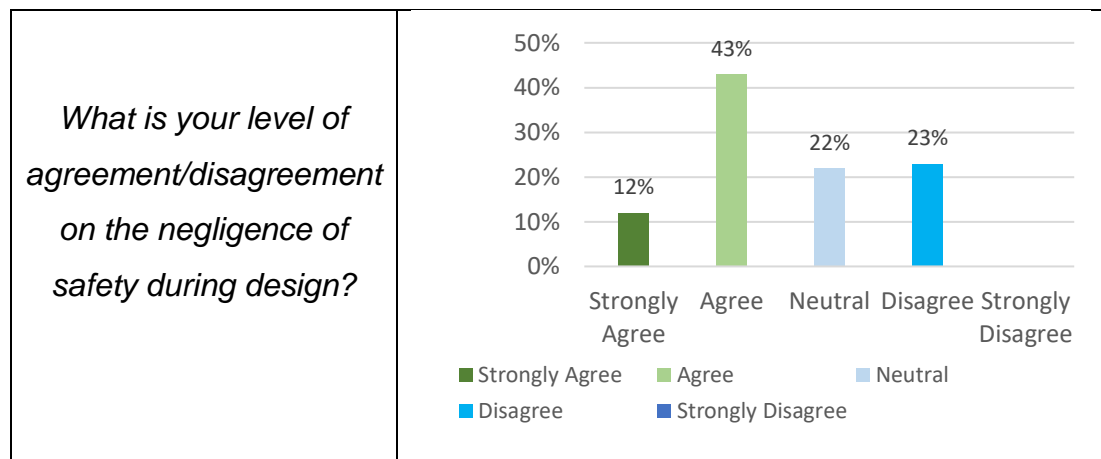
Please indicate your level of agreement/disagreement with the following statement: “Safety is presumed to be inherent in buildings, architects tend to overlook its significance in designing buildings/spaces while cost/aesthetics or deadline takes precedence.”

The response of the students has been presented in Figure 8.23 which reveals students’ belief that safety tends to be overlooked while designing

buildings. More than half of the surveyed students either agreed (43%) or strongly agreed (12%) with the given statement. On the other hand, less than a quarter (23%) disagreed.

Figure 8.23

Level of Agreement/Disagreement on Negligence of Safety during Design



Note. Source: Author.

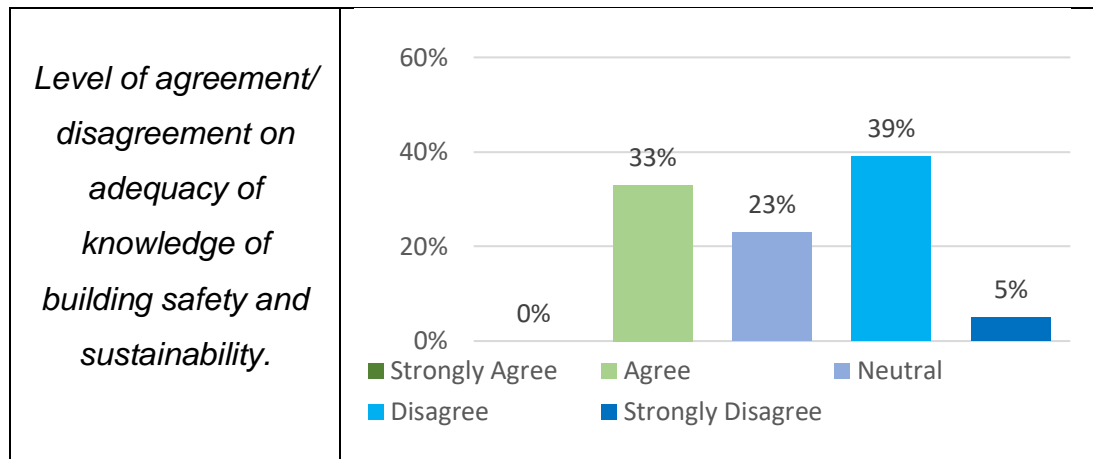
The survey further probed whether students believed the coverage of issues relating to sustainability and safety was sufficient in the education system, with survey question 3.

Survey Question #3:

Please indicate your level of agreement/disagreement with the following statement: “In this era, where sustainability and overall safety are concerning issues within the built environment, the education system in Bangladesh provides sufficient knowledge to the students on these matters”.

Figure 8.24

Adequacy of delivering knowledge of Building Safety and Sustainability



Note. Source: Author.

Previously in Figure 8.22 it was revealed that an overwhelming majority of the 60 students (82%) were content with the level of safety awareness created through their curriculum. However, their opinions are divided about the adequacy of education in covering building safety and sustainability. As Figure 8.24 shows, while 39% of the participants disagreed and another 5% strongly disagreed with the statement provided in the question, a third (33%) agreed. A significant number of students surveyed (23%) remained neutral.

The students were then directly asked about their confidence in their potential to contribute to industrial building safety in future.

Survey Question #4:

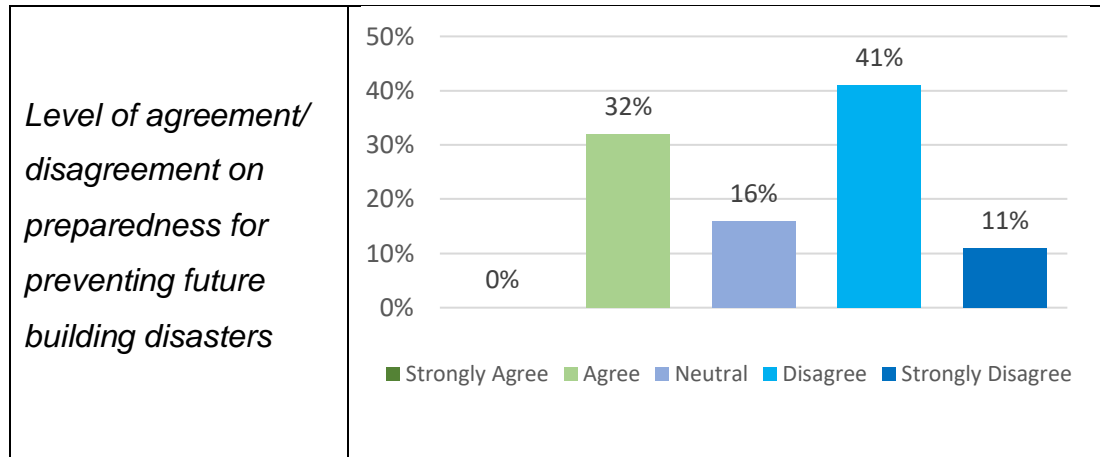
Your opinion on the statement: the students (future practitioners) are sufficiently prepared with knowledge and education on industrial building safety to design safe factories and contribute in preventing disasters.

This question sought to verify whether students felt confident that, as future practitioners, they would have the ability to prevent future building disasters. As seen in Figure 8.25, while over half of the survey respondents either disagreed (41%) or strongly disagreed (11%) that they were sufficiently prepared, almost a third of the respondents (32%) agreed with the

suggestion that they felt prepared. Meanwhile, 16% of respondents chose to remain neutral.

Figure 8.25

Readiness for Preventing Future Building Disasters



Note. Source: Author.

As discussed earlier, the following questions sought to determine the opinion of future practitioners engaged with the built environment about the regulation system within Dhaka. The questions probed their opinions regarding both the old and the reformed regulatory system. The questions asked respondents to choose from a range of options provided, with the freedom to select more than one response.

The first of these questions asked was survey question 5.

Survey Question #5:

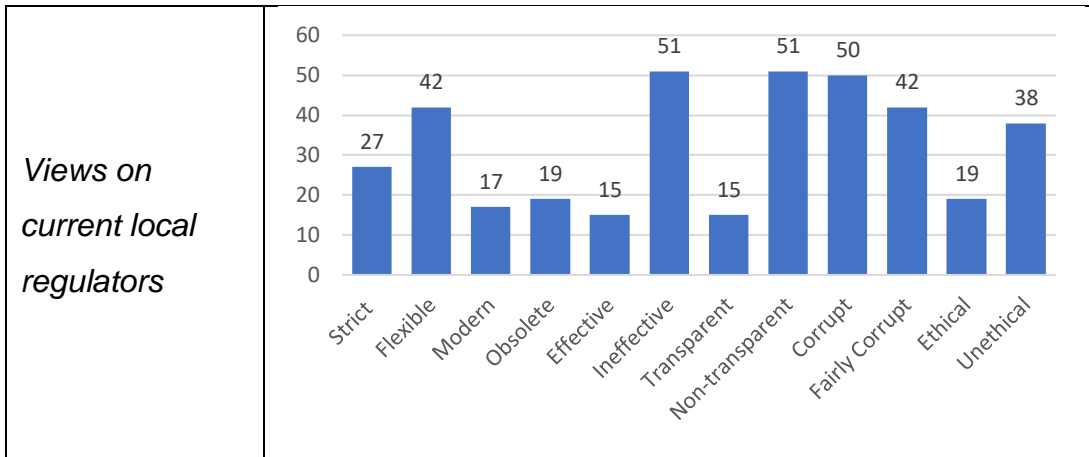
What are your views on the current building regulatory system (RAJUK and others) in Dhaka? Please tick 5 appropriate descriptors from the following factors.

As evident in Figure 8.26, the students surveyed expressed extensive negativity towards RAJUK and other local regulating authorities by mostly describing them to be ineffective, corrupt, non-transparent and unethical. The findings show that 51% of the 60 students believe the national regulatory bodies to be ineffective and non-transparent while 50% describe the system

as corrupt and 42% as fairly corrupt. The students also perceive the regulatory bodies as flexible (42%) and unethical (38%).

Figure 8.26

Views on RAJUK and other Local Regulators



Note. Source: Author.

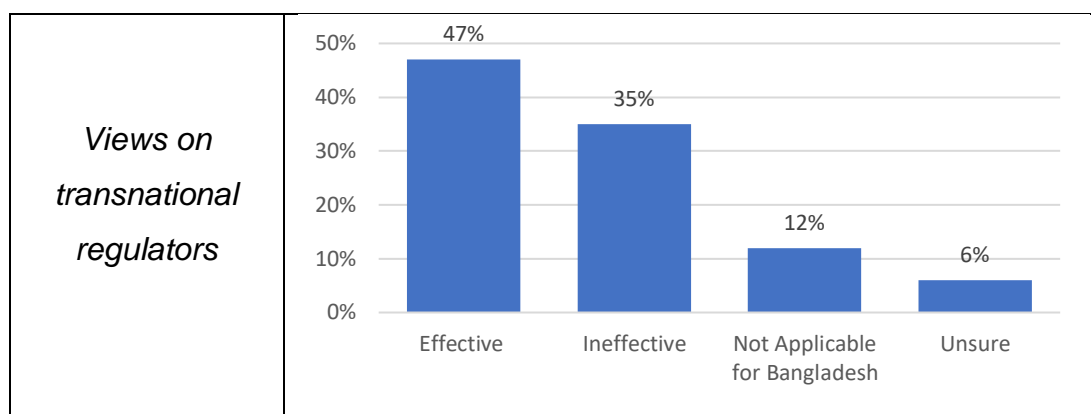
The following question sought to evaluate the effectiveness of the transnational regulators from the students' perspective. It was kept in mind that many students may not be aware of the global intervention and the tenure of transnational regulators and hence the option of "unsure" was provided.

Survey Question #6:

What is/are your views on the Accord/Alliance and their performance within the RMG industry?

Figure 8.27

Views on the Accord/Alliance



Note. Source: Author.

Students' opinion on the performance of the external regulators seems to be quite divided, as seen in Figure 8.27. While 47% of respondents saw them positively as being effective, 35% expressed a negative view, finding them ineffective and 12% said they were not applicable to the country. Meanwhile, 6% of the respondents indicated that they were unsure about the effectiveness of the performance.

The next section reports on the findings from the common questions presented to all interview and survey participants. These questions focused on some crucial queries that would assist in responding to the research questions and drawing conclusions from this study.

8.3.3 Findings from Common Questions of Interviews and Surveys

Combined responses of Interviewees, Survey Participants and Civil Society

As mentioned in Chapter 5, a survey among 70 residents of Dhaka or members from the civil society who are involved within the RMG sector had been conducted to make broad conclusions regarding safety awareness and people's perceptions regarding building safety in general. Although these participants had been randomly selected, it was ensured that they all had minimum understanding on the questions that were asked. They were

provided with just three close-ended questions. These three questions were also common to the interviewees and survey respondents.

These questions were common to a total of 210 respondents (30 actors, 50 workers, 60 students and 70 residents) which helped in acquiring a broader perspective. These questions and responses to them are summarised below.

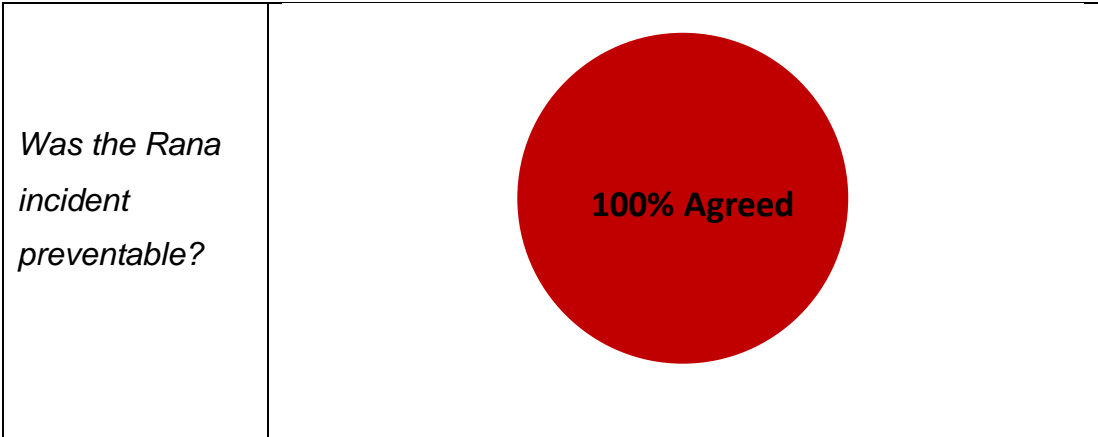
Combined Survey *Question #1:*

Do you believe the Rana Plaza tragedy and others were outcome of human errors and preventable?

Figure 8.28 reveals the unanimous response from all participants that once again corroborates with the information gathered from literature review, desktop review and interview discussions that the tragedy of the Rana Plaza was indeed the result of human errors and undoubtedly preventable. This finding helps to ascertain that implementation of lessons learned from past incidents is inevitable if the industry is to be sustained.

Figure 8.28

Preventability of the Rana Plaza Disaster and others



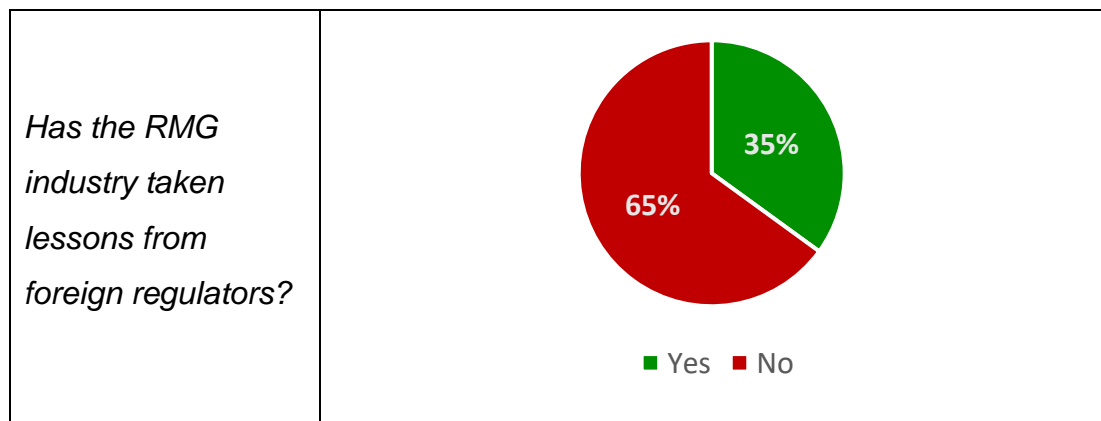
Note. Source: Author.

Combined Survey *Question #2:*

Do you feel that the local actors have taken sufficient lesson from the foreign regulators to confidently apply and promote sustainable building safety within the RMG factories to avoid disasters in the future?

Figure 8.29

Learning from Foreign Regulators to promote Sustainable Building Safety in RMG Factories: Lessons Learnt?



Note. Source: Author.

This query directly addresses the primary research question and also the title of the research itself. A total of 137 of the respondents, as seen in Figure 8.29, expressed their distrust regarding the lessons taken from the Rana Plaza incident during the reformatory phase controlled by the external regimes. However, 73 of the participants believed that the actors were prepared to protect the RMG factories from disasters at the time of the interviews.

The final query commonly placed for all 210 participants was:

Combined Survey Question #3:

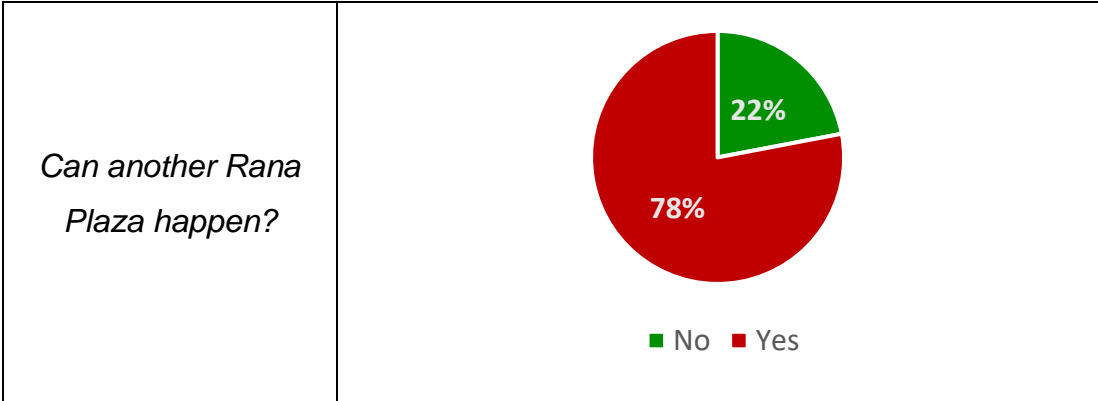
Does the RMG industry still appear vulnerable to building tragedies and do you think another factory incident like the Rana Plaza could happen in the future?

The option “neutral” was avoided as a conclusive and precise response was sought.

Figure 8.30 shows that more than three-quarters of the respondents (164) including key actors, students, workers, and members of Dhaka’s civil society were not convinced that the RMG industry is free from risks of hazards and that its building safety issues have been sufficiently diminished for the sector to be sustainable in the future. Although 46 have faith, the generality of scepticism cannot be ignored.

Figure 8.30

Possibility of another Rana Plaza Incident



Note. Source: Author.

8.4 Chapter Conclusion

The findings of interviews and surveys have been objectively summarised in this chapter. They have guided this research towards reaching subjective and practical conclusions and making logical recommendations in the final chapter of this dissertation. The findings derived from varied actors not only created scope for identifying discrepancies between the information revealed by actors and the literature reviewed but also assisted in comprehending ground realities. They also exposed differences in each actor's opinion according to their role and experience within the global RMG supply chain network of Dhaka. Comparisons between each actor group's attitude, perceptions and reactions could be evaluated through these findings which directed towards reasonable points for discussion and conclusion.

The next chapter will discuss the findings paired with interpretations and recommendations made from literature reviews, field observations, discussions, desktop reviews and actors' responses to the interviews and surveys. It will conclude the thesis making logical recommendations as comprehended through this study.

Chapter 9: Discussion of Findings

This dissertation presents an empirical study of aspects related to implementation and sustainability of building safety with reference to reformed regulations within the RMG factories of Dhaka. A remarkable amount of literature is available globally focusing on this area, covering theories and rationales formulated on the normative concepts of building and workplace safety. However, literature on exemplary instances of compliance or the penalties that may await each actor for failing to comply with safety regulations or preventing human-made errors is scarce. Moreover, the reviewed literature does not contain distinctly identified responsibilities and roles for key actors in designing, constructing, regulating, and maintaining safety within the workplaces in production nodes within global production networks, as exemplified in the RMG sector of Dhaka.

The term “sustainable building safety” has been used in the title and throughout this thesis to link two crucial elements—safety and sustainability in the context of ensuring safety within the built environment. The thesis makes the case that sustainable building safety requires to be ensured in order for the country’s RMG industry to sustain.

The research was undertaken to investigate the three following main areas aligned to the research goals:

- First, it sought to explore the concepts of building safety (Chapters 2,3 and 4) involved in the creation of desirable working conditions for RMG factories through effective regulation. It investigated the aspects of governance dealing with ethical practices and operations, shifts in the paradigm of building safety and how all these relate to sustaining the industry.
- Secondly, the research focused on two historic cases of RMG building tragedies with the primary purpose of identifying the factors that may have influenced key actors’ behaviour towards compromising building safety and even putting human lives at risk. The intent was to reveal the causes of RMG factory disasters relating to roles, responsibility and accountability of various actors to the outcomes to comprehend

the possible gaps in the safety regulatory regimes that led to such unfortunate building incidents (Chapter 6) and to review the critical junctures in safety policy development following the incidents (Chapters 6 and 7).

- The final part of the research examined the impact of subsequent intervention by transnational regulatory regimes on modification of safety practices within Dhaka's RMG industry triggered by the two factory disasters. It looked at the level of effectiveness and prospects of the current regulatory regimes in sustaining the building safety reformations within Dhaka's RMG industry (Chapters 7 and 8).

The following section is a discussion supported by relevant literature and also findings of the empirical research undertaken while investigating the core factors contributing to negligence of safety practices, the custom of blame-game and expectations from the current regulatory agencies.

9.1 Global Production Network

Findings of this study based on literature review, desktop reviews, interviews and surveys revealed that a range of factors burden the RMG sector. Many of these factors relate to the RMG sector being a part of a global production network. The impact of globalisation on developing countries has been beneficial, particularly in terms of its contribution to economic development, employment, and improving certain social aspects like poverty reduction and increasing the financial independence of women. The importation of readymade clothing from developing countries to meet the growing demand for fast fashion in developed nations proved to be highly profitable for exporters in the globalised world. The global production network functions on the premise that wealthier, developed nations could be supplied with marketable goods produced in locations with cheaper production costs, largely due to the cheap labour generally found in poorer or underdeveloped countries. For decades governments in developing countries such as Bangladesh have worked to facilitate the RMG industry's progress, displaying little interest in enhancing working conditions and labours' right to safe workplaces—considerations that could impact labour costs.

The RMG industry's unparalleled contribution to the nation's economy also motivates government's sensitivity towards this sector. Hence, despite frequent accidents, the Government of Bangladesh arguably deals with factory owners and regulators leniently rather than imposing stringent enforcement measures and penalties for workplace safety violations. Although building safety regulations have existed in documents for some time, the Government has lacked the competence and political desire to enforce them and has remained visibly reluctant to enhance implementation of safety practices unless coerced by international buyers or other global partners. Meanwhile, excessive demands from global buyers for the supply of large volumes of products with strict deadlines and the ultimate expectation of cheap labour further challenge workplace safety. The following section discusses two of the crucial revelations that this research produced.

9.1.1 Production Targets beyond Factory Capacity

The RMG industry of Bangladesh is a product of globalisation which created a very profitable mode for boosting the economy within a brief period. It offers an ideal amalgamation of low-cost production and swift turnaround for fast-fashion manufacturers producing budget clothing responding to changes in contemporary fashion trends. The literature review revealed how international markets access low-income nations, thus helping firms increase profits by catering to wealthier consumers in high-income nations. Findings from interviews and surveys undertaken in this study shed light on how temptation for greater profit leads to unethical practices and negligence of responsibilities in RMG factories. In addition, studying the two deadliest cases of factory disasters—the Tazreen Fire and the Rana Plaza collapse in Chapter 6—assisted in uncovering the role of excessive demand with unbending production targets in motivating safety negligence.

The phenomenon of fast fashion that revolutionised the global attire industry over the past few decades is dominated by demand. As fast fashion became an innovation for retailers to increase production of clothing and open scopes for mainstream consumers in developed nations to purchase clothes at an affordable price, it simultaneously threatened human rights within the industry compromising safety measures and workplace conditions. Most fast fashion

is manufactured in developing countries at least production cost, under unsatisfactory working conditions and human rights protection. Company commitments to transparency regarding sourcing of their goods are inconsistent and standards for disclosure are erratic. This is possibly due to weak monitoring practices and slack implementation of safety regulations as also revealed in the research findings where much of the blame for past building tragedies has been assigned to the regulators, closely followed by factory owners.

The Tazreen Factory fire incident discussed in Chapter 6, disclosed the unacceptable reality of the risks to which underpaid garment workers were exposed. The investigation of the Rana Plaza collapse also demonstrated how accepting orders beyond a factory's production capacity could exert pressure on owners and workers to meet deadlines and encourage subcontracting some of the workload to smaller manufacturing units with little or no monitoring by regulatory agencies. This allows international buyers to shift blame and liability, knowingly or unknowingly, to manufacturers/factory owners or subcontractors while absolving themselves of any obligation to improve working conditions. To be fair however, there may be instances where the buyer may unwittingly, contribute to such customs. Even where buyers seek to ensure the local manufacturers'/exporters' production capacity to manage their order, they have no means of confirming the factories' prior work commitments. Eventually, such manufacturers would resort to outsourcing to non-compliant subcontractors. Hence, the tendency for actors to become involved in the blame-game remains unresolved.

9.1.2 Cheap Labour and Compromised Working Conditions

Low wages have historically been one of the main reasons for labour unrest when workers have protested, gone on strikes, or sought help from labour welfare organisations. This has always concerned international buyers, and the Government of Bangladesh had been persistently persuaded by workers' welfare organisations to review workers' pay rates. However, despite the links established between working conditions, productivity and workers' stability, factory owners focused on reinforcing their competitive advantage of providing the cheapest outsourcing of RMG in the world, even if doing so

exposed workers to vulnerable working conditions. Numerous stakeholders including international brands and their local suppliers exploited the availability of abundant labour making Bangladesh the cheapest production node for RMG to maximise their global revenues. The outcome was frequent factory disasters in the sector.

Simultaneous demand for improved workplaces has also been in place, ironically, regulations and practices intended to improve many of the workers' rights may, in fact, increase the cost of employing them. One of the findings of this study is that the heavy reliance of the Bangladesh Government on its RMG industry for the nation's economic development has created a biased approach that capitalises on factors like cost-effectiveness and meeting rigid deadlines do take precedence over safety considerations during the process of designing and operating factories. The key actors interviewed/surveyed suggested that, in practice, safety compromise occurs at the very inception of factory establishment and persists throughout operation of factories.

The low cost of labour is often made possible when working conditions are compromised, factory maintenance is avoided, compensation for workplace injury or loss is evaded and any additional measures for ensuring safety are sidestepped. The lack of effective monitoring from the Government for implementation of minimum wage rates and limited presence of labour unions in most industries in the country, creates scope for entrepreneurs to violate rules regarding minimum pay and other provisions.

9.2 Global Reaction to Disasters

Globalisation has proven to have had a multi-faceted influence on Bangladesh which became significantly evident after the black-swan incident (an occurrence that came as a surprise and had a major impact) of the Rana Plaza building failure, a disaster that intensified into a scandal of global proportions. As recorded in the literature and revealed in the findings of this research, not only professionals but trade unions and NGOs underlined the shared responsibility of the agencies that dealt with factories housed inside the Rana Plaza complex. As the alarming images of the tragedy swiftly circulated across the international media, the highlighted aspect was the

failure of the monitoring practices of the local government authorities. Workers and the country's civil society held government authorities and factory owners accountable. But a small section of the media also put a spotlight on multinational clothing retailers cited by trade unions and NGOs and urged top brands to operate more responsibly.

9.2.1 Media, NGOs and Civil Society

Renowned brands like Disney and Walmart along with local manufacturers and exporters were criticised by consumers overseas, the Clean Clothes Campaign and civil society, for abandoning responsibility towards the factory workers and described the situation as “modern-day slavery” (CCC, 2020). Compromised working conditions within the RMG factories of Bangladesh, was brought under global scrutiny. However, this research and several existing literatures reveal that media's emphasis on local building and fire safety perhaps diverted attention from the bigger, multidimensional issues within the entire global production and supply network. The accountability of all actors for ensuring safety, was diluted and obligations of multinational organisations for regulating safety standards was overshadowed.

Fortunately, initiatives by civil society as well as public authorities where NGOs, on some occasions, had openly denounced international brands for their unethical practices, created pressure on them through potential public exposure. Where media primarily investigated flaws within the local garment factories, NGOs and organisations like the Clean Clothes Campaign questioned the responsibility of both national and international actors within this global supply chain network. They exploited moral jolts to arouse empathy, guilt and even resentment so the consumers, i.e., the general public in developed countries, could find a connection between their daily lives and the risk of the workers who made their clothes. The research finds that this strategy was more effective than buyers' persuasion as it developed an emotional connection between global consumers and Bangladeshi workers and publicised the root cause of the problem that subsequently prompted collective action locally and globally.

9.2.2 Introduction of External Regulatory Regimes

The Rana Plaza collapse highlighted the ineffectiveness of the safety regulatory regimes of that time. This was necessary to save Bangladesh’s garments industry, the country’s image, and its economy. Foreign organisations aligned with global brands agreed to support the Government of Bangladesh to create safer working standards within the garment industry, as discussed in Chapter 7. The global outcry over the Rana Plaza incident evoked public interest globally and media focus leading to three remediation initiatives in the RMG sector of Bangladesh—the National Tripartite Plan of Action, the Accord, and the Alliance (as elaborated in Chapter 7). Although all three initiatives endeavoured to commit to improving workplace safety, their extent of achievements varied. The findings of this study prove that these regulatory authorities, although not flawless, had significant results in regard to remediation in Dhaka’s garment sector workplaces. With more stringent inspections and even penalisation where required, these initiatives reached significant milestones within only five years, in contrast to RAJUK, NTPA and DIFE which had not achieved such outcomes over decades.

Figure 9.1

Global Factors and Transformation of Regulatory Regimes within Bangladesh RMG industry (2013-present)

Factors	Up to 2013 (pre-Rana Plaza)	2013–2019 (post-Rana Plaza)	2019–present (post-foreign regulators)
Drivers	<i>Global market chasing least-cost production</i>	<i>Critical Juncture- global attention/scrutiny</i>	<i>Exit of the Accord/Alliance</i>
Phenomenon	MFA, Global shift from high-wage to low-wage nations	Global attention on RMG building safety concerns- CSR Approaches, Buyers’ code of conduct, low wages, etc.	Take-over of regulatory controls from global players by local stakeholders and Bangladesh Government
Regulatory Regimes	Bangladesh RMG industry under national regulators- RAJUK, DIFE, City Corporations, etc. supported by the ILO	Bangladesh RMG industry under the NTPA and transnational regulators- the Accord and the Alliance	Bangladesh RMG industry under the RMG Sustainability Council (RSC)

Note. Source: Author.

9.2.3 Role of the Transnational Agencies

The research established that the transformation and challenges taken on board by factory owners' associations to adopt and apply the compliance mechanisms occurred as a consequence of threats of buyers to withdraw their investments. The Government of Bangladesh was compelled to embrace modifications within its governance system where the transnational regulators the Accord and the Alliance were assigned to exercise supreme authority over the industry. Moreover, international brands who had received massive criticism from global consumers and the NGOs for being oblivious to safety conditions in Bangladesh, were obligated to take steps towards their image repair.

Interviews and previous research indicate that prior to the Rana Plaza collapse, local suppliers mostly monitored the structural and fire safety regulations by several methods of certification. As revealed through interviews, in the ritualised manner of governance the owners were simply expected to state that they were compliant with government safety standards. The Accord and the Alliance identified the weaknesses of outdated Corporate Social Responsibility (CSR) within the RMG industry of Bangladesh. This research highlighted the asymmetric power relationship between buyers and manufacturers/exporters during the takeover of the regulatory regime by transnational regulators, the Accord and the Alliance. The agencies had provided some financial support for remediation action to enhance safety conditions. However, most of the reformation costs were ultimately borne by factory owners under international buyer pressure.

The transnational agencies empowered foreign buyers further by persuading suppliers to comply with reformed safety regulations without requiring buyers to contribute beyond bearing the cost for inspections and monitoring. Manufacturers were obligated to redistribute and reinvest their profits to improve workplace safety and accident prevention. This appeared to be coercive compliance which resulted in some factories increasing workers' production targets to meet the additional compliance expenditures while others failed to cope and closed their businesses leaving thousands of workers unemployed.

The research findings show that actors including workers, were satisfied with the performance of the transnational agencies. However, it is also apparent that the imbalance of power relationship prevented factory owners/manufacturers from challenging the procedures of the transnational regulators fearing the risk of losing clients. Management bodies representing garment factory owners admitted in interviews conducted for this study that they took the inspections by external regulators very seriously as any negative report would lead to critical consequences for their buyer-driven business. They consider the inspections to be rigorous and admitted that after the Rana Plaza incident, maintaining business may not have been possible without the implementation of the international initiatives by the Bangladesh Government.

9.3 Ground Reality

This section of discussion sheds light upon the discrepancies that exist between building safety regulations or laws and their efficiency and application in practice. The key facts discussed below are founded on observations and findings revealed through this research.

9.3.1 Future Practitioners and their Level of Confidence in Preventing Disasters

Interviews and survey findings revealed that educators and students support the view that curricula/syllabi of local institutes that offer architecture and engineering courses do not sufficiently emphasise building safety aspects, particularly with reference to factories or industrial buildings.

University students enrolled in built environment related disciplines are the country's future practitioners who will serve as major actors in shaping workplace environments and ensuring their safety. While as Figure 8.22 shows (see Chapter 8), 82% of surveyed students believe building safety is covered in their coursework the vast majority lack confidence in preventing future building disasters (Fig. 8.25). Perhaps their lack of confidence results from the knowledge that factory owners represent the powerful political people with many being ministers. This reflects a massive power differential within the society, rendering practitioners as well as regulators quite

ineffective. A few students also acknowledged the reality of the powerplay within Dhaka's RMG industry that often tends to dominate practitioners' knowledge and instructions.

9.3.2 Fire—an unresolved issue

The Tazreen Factory fire incident was overshadowed by the Rana Plaza collapse diverting the focus from prevailing fire issues to structural integrity. The death toll of over a hundred people at the former incident appeared insignificant in comparison to more than ten times that at the latter. This seems to have lowered the priority of fire safety reformation and fire risk remains high to date. Recurring fire incidents in the industrial buildings have been repeatedly attributed to safety lapses that persist within the rapidly growing RMG sector. As mentioned in earlier chapters, fire occurrences are mostly the result of human behaviour and contextual aspects, like locking the fire exits. The illegal practice of locking fire exits could be due to fear of theft of property or as a means to coerce workers to work overtime by confining them within their workplaces. Similarly, fire stairs could sometimes remain blocked because they are used for storage owing to lack of space.

Despite the prevalence of adequate laws and fire safety regulations, proper implementation remains grossly lacking. Over half of the surveyed workers (58%) suggested inadequacy of fire safety drill routines. However, it is more notable that around 9% of those surveyed refused to respond to questions (Figure 8.19, Chapter 8), pointing to the possibility of fear among workers, discouraging free expression of their opinions. Meanwhile, factory owners and the management tend to avoid the fire safety drills perhaps because they are confident of their ability to escape punishment for non-compliance. It points to lack of commitment on the part of the BGMEA and local government to resolve fire risks and/or penalise irresponsible behaviour that may cause accidents. It could, therefore, be concluded that fire risks prevail within the RMG industry primarily because of reckless and unprincipled behaviour by the factory owners and management bodies.

Constructing world class top ranking 'green' factories in Bangladesh, certified by LEED has been widely publicised by factory owners and management

associations as evidence of improved safety standards in the country's RMG sector and the previous building disasters were catalysts in motivating this effort to satisfy global partners' requirements and provide confidence to remain in business with Bangladesh. However, LEED certification does not verify adequacy of fire protection measures, but rather the environmental performance of buildings. As statistics reveal, although the scale or severity of individual fire incidents may have decreased in the past decade, their frequency has not. If fire continues to threaten the RMG industry, then perhaps a magnified incident like the Tazreen disaster may occur in the future.

9.3.3 Corruption and Transparency Issues

This research sought to gauge the impact that the external initiatives have left on the current regulating pattern of the country's garment manufacturing industry after their cessation. It investigated whether a sense of responsibility towards ensuring safety within workplaces has been established since the major building tragedies and the aftermaths.

The key actors who were interviewed suggested that the transparency of RSC's management is questionable. The RSC was formed by the BGMEA after the two foreign regulators, the Accord, and the Alliance, were refused extension of their period of service. The BGMEA's involvement in regulating the RMG sector is controversial as most of its members are factory owners themselves. Their capacity to influence the governance of regulatory control, compliance methods, and to self-regulate have raised concern among the global brands for decades. Prominent labour rights groups like IndustriALL and UNI Global have withdrawn from the RSC, leaving the BGMEA policing an industry which it itself owns and from which it benefits (as discussed in Chapters 4 and 7). Key actors, other than factory owners expressed low level of trust in the RSC. Most strikingly, the actor group representing global partners that include foreign buyers who are the primary investors into the RMG industry, put only very little trust in the RSC.

Local regulators like the RAJUK had earlier lost people's trust with the two RMG factory disasters further serving to highlight their image as being

corrupt and ineffective organisations. As a replacement of RAJUK, the RSC would require exemplary performances in transparency and honesty to earn people's trust. Unfortunately, the potential conflict of interest is very high as most of the regulators have vested interests in the very industry they are regulating. The governance of the RMG sector by RSC allows private parties with vested interests to be responsible for monitoring their own compliance of safety measures and ensuring workers welfare. It is not surprising, therefore, to find the regulatory regime under the RSC undermining pro-labour reforms introduced by the two external transnational agencies.

9.3.4 Nexus between Government and Manufacturers/Exporters

Several agencies, including the ILO, had been critical of the Bangladesh government even before the Rana Plaza tragedy for denying workers' rights and succumbing to the BGMEA's resistance against reformations of Labour Law (USTR, 2013). It was only after the Rana Plaza collapse that a massive international scrutiny compelled the national government to amend the Labour Act to granting workers' fundamental rights regarding freedom of association and collective bargaining and ensuring CSR and OHS standards (Siddiqui & Uddin, 2016).

The RMG factory owners and the BGMEA have resisted raising the minimum wage, perhaps to ensure Bangladesh's continued appeal for global buyers as a low-cost production node. There appears to be a coalition between the RMG manufacturers and exporters and the government that allowed low wages and poor working conditions. This could explain their resistance to the extension of service of the international regulatory agencies, the Accord and the Alliance. The transnational regulatory regimes' exit created scope for the RMG manufacturers to play a more influential role into the monitoring and regulating procedures.

The findings of this thesis suggest that the regulatory interventions following the Rana Plaza perhaps had been an emergency "band-aid strategy" adopted by the Government of Bangladesh to safeguard the survival of the RMG industry and retain the stability of the country's economy. Clearly, it was an untenable strategy in the longer term and hence not sustainable.

The last chapter of this thesis will draw conclusion from the research findings and make recommendations on the basis of the research outcome.

Chapter 10: Conclusion and Recommendations

The final chapter of the dissertation presents the research outcome and concludes by addressing the research questions, which eventually guided towards recommendations. The inferences are based on findings revealed through the various modes described in earlier chapters and summarising them.

The core inspiration of the research had budded from Bangladesh's commitment to the UN's Sustainability Goals 2030 where sustainability is advocated in all sectors. In this regard, the Government of Bangladesh cannot neglect the sustainability of its prodigious RMG industry that functions as the backbone of the country's economy. The study aimed to comprehend the safety issues underlying within Dhaka's RMG factories and the significance of the reformations through promotion of sustainable building safety through the key actors. It investigated the aspects of sustainable building safety through perceptions of the key actors. The research additionally concentrated on analysing the urban governance framework around garment manufacturing involving safety and production planning, compliant behaviour and practice by all key actors aimed towards protecting workers' rights to an unthreatening workplace environment.

In the course of this study, the complexities of trials and challenges experienced by a developing country when required to adapt to rapidly transforming globalised safety standards and regulations were highlighted. The disconnect between theory, regulations and practice not only highlighted the governance deficit but also revealed the ambiguity of Bangladesh's pledge to be sustainable. These arguments were strengthened by identifying the intricacies between primary actors and by understanding their individual approach to promoting a sustainable built environment within Dhaka's RMG industry. Furthermore, the human errors that had resulted in two of the country's deadliest factory disasters were examined, roles of key actors and global response at the critical junctures were explored, and the RMG industry's overall safety status achieved through international intervention and its prospect to sustain were determined.

10.1 Research Outcome and Conclusion

A conclusive outcome of the research has been attained in retrospect with the objectives that had been set. The study primarily assessed and analysed the extent, effectiveness and sustainability of the safety improvements made through interventions of transnational external actors within Dhaka's RMG sector that characterises a low-cost node within the global supply chain network, with low work-safety awareness and weak local regulatory regimes.

- First, the research found that Dhaka, in its race to becoming a megacity and joining the globalised RMG industry the city's built environment has been impacted (Chapter 2). This observed the shifts in the capital's planning paradigms at different phases, coping with globalisation and governance weaknesses that resulted in a disaster-prone built environment.
- Second, the study's reflection upon the significance of safety for promoting a sustainable built environment revealed the essence of the term "sustainable building safety" and established its relevance with industrial workplaces (Chapter 3).
- Third, the allocation of responsibility and roles of each actor group who contribute within the RMG industry was outlined in accordance with the amended, reformed, and existing regulations. (Chapter 4).
- Fourth, analysing two of the country's deadliest RMG factory disasters were studied, national and global responses at these critical junctures assisted to assess the potential of current local regulatory regimes and identify the gaps to promote sustainable building safety and prevent future hazards (Chapters 6 and 7).

Through mixed methods, the thesis has explored, examined, and revealed findings from review of existing literature and primary data collection through interviews of resource persons and questionnaire surveys of factory workers, university students and members of civil society. This dissertation concludes with responses to the research questions.

The main research question that this study sought to investigate is:

How does external input from global stakeholders motivated by industrial accidents inspire confidence among local actors in delivering sustainable safety of industrial building

The above research question was broken down into the following set of sub-questions which this section will address individually:

a) What is the status of Dhaka within the global production network of RMG industry?

The status of Dhaka as an important node within the global production and supply chain network of the RMG industry is clearly established. The historical background and current socio-economic and political realities provided the right context for Dhaka to capitalise on its potential as a low-cost production node for the globalised RMG industry.

Dhaka is the capital of Bangladesh, a developing country where occupational ethics are often held to ransom as the national governing authorities are quite susceptible to corruption. This is further compounded by high priority assigned through the national government to the global RMG supply network operated mainly from Dhaka, prompting public agencies to readily turn a blind eye to compromised standards that work in favour of multinational stakeholders.

The research has highlighted the financial strain experienced by owners of medium or smaller factories who were instructed by external regulatory agencies to remediate but could not afford to do so without support from the brands and retail chains. This disadvantaged smaller factories that struggled to reduce costs in comparison to large export-oriented set-ups. While these factories have already contended with risks of fire, the burden of solely bearing remediation costs compelled some to terminate their business. Global buyers reevaluate their business models frequently, which exerts price, quantity, and time constraints on garment suppliers. In turn, this impacts heavily on workers who are already overworked at low wages.

Dhaka accommodates almost two-thirds of the total number of RMG factories in the country which combine to add to the level of risk within its built environment. Moreover, it is more densely populated than any other city in

Bangladesh. While it contributes to economic development, and the surplus workforce provides a competitive advantage in the global production network, it concurrently increases the possibility of the loss of more lives due to hazards. The capital's location, cheap labour and profitability may be beneficial factors but the state of law and order, infrastructure, political turmoil, and recurrent labour unrest are viewed unfavourably by international interests. Furthermore, the country cannot afford incidents that bring global criticism—the RMG industry's image must be retained.

Despite Dhaka's contemporary powerful status as an RMG manufacturer and exporter, the overall sustainability of the industry in the near future is questionable. This sentiment is based on the revelation by key players made through the research surveys that lessons learnt from previous mistakes within the country's RMG industry were inadequate (Chapter 8, Figure 8.29). Perhaps this failure to respond inefficiently could be seen as a crucial missed opportunity, especially because of Dhaka's status as the nucleus of the global supply chain, as well as the political and economic centre of Bangladesh. As a major node within the RMG, Dhaka can potentially lead to the implementation of sustainable safety practices within its garment industry and across all industrial sectors motivating other cities of Bangladesh and such other developing nations to follow.

b) Who are the primary players of Dhaka's RMG industry and how are their roles allocated in ensuring safety within the garment factories?

Although the research has identified the key actors within Dhaka's global RMG network, how their roles and responsibilities are allocated for ensuring safety within the workplaces remains inconclusive.

This research has recognised the key players who serve to establish, operate, and maintain Dhaka's RMG industry and expected to undertake significant roles and responsibilities in ensuring building safety.

From the process of planning to the establishment of a factory and then its operation, management and maintenance, this multi-faceted industry comprises actors in multiple layers from diverse academic and professional backgrounds, experience, nationality, and even ethical approaches. These

actors were classified under broad groups on the basis of their profession or type of involvement with the industry:

- The first primary actor group is factory owners whose decision to participate in the RMG industry leads to establishment of a workplace. This group includes people from varied backgrounds who may have limited or high levels of literacy, who are powerful, wealthy, or eager to financially establish themselves. Factory owners include investors as well as managers and administrators. In Bangladesh, the RMG sector is dominated by the powerful elite social circles and politicians. They are known to exploit their social position to manipulate practitioners and regulators to avoid regulations and escape punishment for non-compliance. Currently, many of them are also part of the regulatory agency, the RSC and in a position to self-monitor. The aspect of factory owners' greed leading to safety negligence has been reflected through several findings in this study. Moreover, studying the cases of the Tazreen Factory and Rana Plaza has also exposed the custom of owners accepting orders beyond factory production capacities and then violating contractual agreements through potential breaching of safety protocols and subcontracting substandard factories to distribute the workload.
- The practitioners involved are architects and engineers who design and construct factory buildings, some of whom also belong to professional institutes. They are all highly educated and qualified individuals, some new in the field and others experienced. Although their academic backgrounds are similar, their awareness regarding safety regulations, their ethical values or involvement in the establishment of RMG factories may vary. As evident in Figure 8.4 of Chapter 8, a majority of respondents disagreed that Dhaka is progressing towards a safe and sustainable future. As discussed earlier, practitioners' contribution to developing a sustainable city is undeniable but through interviews, they have also stated that ensuring building safety is a multifaceted undertaking, involving several significant, interdependent actors within the RMG sector. Their

knowledge, education and experience are often undermined by owners' social status, both monetary and political. Hence, practitioners possibly lack confidence in preventing building disasters both at present and in the future.

- Regulators of the built environment, including RMG factories, serve under various agencies including RAJUK, DIFE, City Corporations, NTPA, the Accord, the Alliance, or the RSC. Elaborate lack of clarity within the set of regulatory approval procedures and guidelines provided by various supervisory bodies has been found to be a barrier to proper implementation of safety measures. This often leads to disorder, corruption, and unethical practices, amplified further by governance weaknesses. As discussed in earlier chapters, because of several decision-making shortcomings and disreputable practices, the national agencies in particular have earned widespread notoriety for corrupt practices and for showing leniency towards violators of regulations. However, the regulators themselves have always claimed to be principled and explained their incompetence as being a result of inadequate workforce and facilities.
- Workers are an integral part of the RMG factories where safety and welfare are expected to be a priority. They are primary users or occupants of factories—the ones whose lives are threatened by risky workplaces and who are often deprived of their right to safe working conditions and offered low wages within compromised safety protocols. To the owners' advantage, most workers have limited literacy and are unaware of their own rights. In order to secure a stable income, they tend to refrain from asserting their right to safe working conditions or protesting against their employers. However, workers could play a vital and powerful role in underpinning safety within factories if they were more informed of their rights and had a deeper understanding of unfortunate outcomes that could result from safety violations.
- “Global partners” is a catch-all term used in the thesis to refer to a host of actors involved in activation of safety measures in the RMG sector. These actors include foreign buyers, NGOs, human rights

organisations, or other international agencies like the ILO. A factory is activated through the delivery of orders from foreign buyers that include foreign brands that are the main drivers of the global supply chain network within Bangladesh. They are usually located in developed countries and may employ either local or foreign representatives to communicate with manufacturers on site in Bangladesh. Global partners set safety standards for garment manufacturing factories which are generally located in underdeveloped or developing countries. They infrequently remain involved in follow-up procedures regarding implementation and maintenance of safety standards/protocols introduced on their behalf. Although extensive advancements had been made after the Rana Plaza tragedy, international buyers' detachment from issues of low wages, excessive work demands or victim compensation or rehabilitation following factory building disasters have been widely criticised. Moreover, issues arising from buyers' rigid production targets and deadlines have led to factory disasters in the past. However, this can potentially be managed to a large extent by the global partners' commitment to ensuring workers' safety.

- Educators in disciplines related to the built environment are responsible for making students aware of the importance, professional responsibility, and moral obligations of ensuring safety in workplaces. This research found that they are seen as being the most responsible for creating awareness regarding building safety which future practitioners may implement. The educators, thus play a crucial role within the RMG industry in preparing future practitioners who are responsible for designing safe buildings. They are also expected to instill confidence in the future practitioners to strive to prevent malpractices leading to disasters.
- Students belonging to relevant disciplines such as architecture and engineering are the future practitioners and potential key actors. Their confident voices and opinions are therefore important in ensuring a stable built environment. Their social backgrounds may vary, but they all pursue a similar standard of education and intend to practice in

relevant fields. Within a span of four to five years, they are expected to attain adequate knowledge of safety which they can apply in future when designing and constructing buildings and structures. Although students may not be presently involved in the RMG industry, their confidence as future practitioners in implementation of their knowledge to ensure safety within factory buildings and all others, is imperative.

- Dhaka's residents who are in NGOs, the ILO, professional institutes, previously in the Accord or the Alliance, members of the BGMEA, BKMEA or RAJUK and government officials directly or indirectly involved in the RMG industry represent the larger civil society whose opinion can serve to influence relevant policymakers. They may or may not directly contribute to industries, but in part can represent consumers or opinion makers. Their educational background, age or social status may vary, but they are all inhabitants of the capital and their perception of the city and its most valuable industry is noteworthy. Their role as common people, residents of a megacity in a developing country, and their perception of governance could potentially motivate concrete actions to improve human rights and sustainability issues within this multi-stakeholder garment industry. As evident after the Rana Plaza incident, such informed citizens constitute the civil society and can exert considerable influence in enhancing labour rights to decent work, OHS and formation and empowerment of trade unions.

Despite having identified the main actors or primary players in the RMG sector, it is still not possible to clearly ascertain each actor's role in ensuring safety within the garment factories. There are manifold shortcomings within the country's current governance and regulatory systems that oversee Dhaka's RMG set-up and operations. There are discrepancies between rules, regulations, and practice; there is stark divergence between what is taught in universities about maintaining professionalism and ground realities; and there are disputes among actor groups about their roles and responsibilities which perpetuates the custom of blame-game.

The plethora of regulations and laws lack clarity and do not distinctly outline roles for the primary players. Regulations specify penalisation for non-compliance but corruption and misuse of power allow primary actors to disregard regulations and ignore guidelines because violators are rarely punished. Where the roles cannot be defined, responsibilities are more difficult to assign. Even where an actor's contribution as a professional within the built environment in general has been outlined, their responsibility in ensuring safety within workplaces is not well-defined. This leads to avoiding accountability in situations where, for instance, fire exits have been designed but are kept locked to avoid possible theft or to prevent workers from leaving when they are forced to work overtime.

Similarly, there are cases when excessive orders from foreign buyers have been subcontracted to substandard factories without the buyer's knowledge. These issues are related to the national cultural context—aspects that are commonly taken for granted and are not recognised by safety protocols introduced by foreign agencies like the Accord and the Alliance. Unless the shortcomings of defined allocation of role and responsibilities of actors are resolved, the accountability of each player will not be ascertained after any building disaster in future.

c) To what extent did high profile industrial disasters attracting external intervention by global stakeholders, serve as critical junctures in effective policy development regarding safety regulations within Dhaka's RMG industry?

The Rana Plaza incident in 2013 proved to be a critical juncture in policy development regarding safety regulations in the industrial sector of Bangladesh, especially the RMG sector of Dhaka. Coming on the heels of the Tazreen disaster, it served as a call to action by demonstrating and exposing the prevailing deficient and ineffective safety regulatory paradigms within factories participating in the global supply chain network. Compliance regulation approaches and local governance had clearly failed to protect workers or the industry from a series of factory disasters. NGOs, media, majority of civil society and consumers had created the compulsion for global fashion brands and retailers to recognise accountability for their role in

compromising with safety. As discussed in Chapters 6 and 7, campaigners played an effective role in defaming or threatening to malign brand image through persistent negative publicity about their indifference towards unacceptable working conditions in developing countries. The RMG industry of Bangladesh, in collaboration with the Government, allowed international intervention through the implementation of transnational regulatory regimes. Buyers and manufacturers alike agreed to be compliant only when their responsibility for doing so came under global scrutiny at critical junctures, being pressured by civil society comprised of consumers and campaigners. A critical juncture, as discussed in Chapter 6, is a turning point that creates an evolution of an entity or causes a social change. Although the Tazreen Fire incident had raised questions about employers' ethics and workplace safety commitments, it had not extensively spurred change in governance or regulations. The Rana Plaza collapse was that critical juncture where government, manufacturers, and all other primary actors within Dhaka's garment industry were alleged to have been responsible for safety negligence. This tragedy alone motivated the Bangladesh Labour Act of 2006, mandates for trade unions, formation of safety committees in workplaces, and the amendment or implementation of related policies. It called for firmer regulations, principled practices and safety systems that would enhance working conditions. Although the courts of Bangladesh mandate fair trials to enforce labour rights, available literature, research, and articles point at the fragility of this directive. Therefore, having lost trust in the existing governance system of the country at that time, multinational agencies overtook the responsibility of adopting a more effective role as regulators.

The external regulatory regimes functioned as trailblazers for improving working conditions and meeting requirements for OHS. Unfortunately, the transfer of technology happened without the supporting contextual developments required to sustain the safety reformations. Although the study has identified both achievements and failures of these agencies, their accomplishments are more prominent than their inefficiency. As stated by one interview respondent (O4), a factory owner, the Accord and Alliance

introduced a new safety culture after the Rana Plaza incident. However, despite their substantial feats in improving and reforming workplace safety, findings show that the GoB and particular actors resisted their efforts to continue. In addition, the organisational safety culture is a continuous process embedded within the company's safety beliefs, values, and attitudes. Without owners' true commitments to improving safety, the industry is expected to experience similar disasters in future.

Therefore, it can be concluded that high-profile industrial building disasters particularly the Rana Plaza, that had drawn external intervention by global stakeholders, did serve as critical junctures in effective policy development regarding safety regulations within Dhaka's RMG industry. However, at present it is entrusted to local authorities and the government to take necessary measures to sustain the improvements and modifications for ensuring safety.

d) To what extent did external intervention help improve safety regulatory regime in Dhaka's RMG industry and clarify the allocation of responsibility among the local actors involved?

A fairly conclusive answer to this question has been reached through findings of the study.

Like the response to question b, while the extent of improvement of safety regulatory agencies to monitor Dhaka's RMG industry by external intervention has been understood, their effectiveness in clarifying the allocation of responsibility among the primary actors is still vague. This was realised from the various approaches implemented for conducting this research. A few revelations made from literature review, interviews and surveys were that the issues underlying within workplace safety standards common within the garment supply chain can be traced to unsatisfactory factory management and inefficient governance. Monitoring and factory inspections performed by regulators aim to identify deficiencies within workplaces while advocacy efforts are intended to motivate changes or stricter enforcement of policies. External intervention had helped to improve regulatory practices extensively. The effectiveness of positive contribution of

the Accord and the Alliance interventions can be substantiated by the development of green factories in Bangladesh, the closure of non-compliant factories and the fact that no significant incident of structural failure has been reported in Bangladesh during their tenure. However, without ensuring sustained effort and installing a streamlined monitoring system, the safety improvements will only prove to be “quick fixes” and not permanent solutions for preventing occurrence of more building disasters in future.

Multinational agencies had also been largely successful in reforming certain regulations and policies that has helped the country’s RMG industry boost its waning image. However, they had been unsuccessful in convincing global purchasers to assist suppliers in paying for safety remediations within factories or to raise the prices they offer manufacturers. Therefore, foreign buyers are yet to acknowledge their responsibility or liability towards upgrading working conditions in the global production network nodes located within developing countries.

One participant from the DIFE (R2) stated during the interview that corruption is multifaceted. Speaking from experience, he claimed that although it is the regulators who are always perceived to be corrupt, owners and government authorities too are equally deceitful in terms of compliance. He described an incident during an inspection where he had been locked up within a factory premise for hours when he identified flaws and prepared to report. The confined regulator then received a phone call from more powerful officials who coerced him to give positive feedback on the state of the factory’s safety compliance. Moreover, on several occasions, when employees of the Accord, the RSC, and the BGMEA were approached to participate in this research, they expressed their “insecurity” in relation to retaining their jobs or their discomfort in being recorded fearing that they may later have to face consequences for revealing more than the agencies would approve.

On the other hand, factory owners raised the issue of lacking any say within the collective authority of the global partners in the Accord or the Alliance. The exclusion of factory owner and manager representatives from the transnational agencies was remarked to be “too powerful to fight” even when they had legitimate concerns. In addition to the agencies’ approach to

compliance often being described as coercive by the RMG factory owners, they were disappointed with the foreign regimes' failure to acquire buyers' assistance for safety improvements. These reasons seemingly led to resistance from both the government and garment industry representatives towards extending the Accord and the Alliance's tenure in Bangladesh. Furthermore, interviews for this thesis have uncovered practitioners' discontent with serving under foreign regulations. Some stated that if other competing exporting nations that have also experienced building disasters over the years, have not been compelled to practise under international regulatory agencies, then Bangladesh should not be bound to do so either.

The issues, complaints and powerplay have brought to light the continued tendency to indulge in the blame-game. Meanwhile, the eventual reallocation of safety governance to foreign agencies instead of evolving existing local regulatory practices has undermined the clarity of each actor group's allocated responsibility for ensuring and promoting building safety which had been identified through external intervention. Thus, an effective approach for protecting factory workers from the control of competition is more challenging to find in the era of globalisation.

e) To what extent was external input from global players effective in improving the sustainable safety governance model for RMG factory building regulations within the contextual reality of Dhaka?

A conclusive answer to this question has been obtained through this research.

As mentioned earlier in the discussion, while there are multiple areas of development in terms of regulatory processes and outcomes of both manufacture and purchase-based labour rights, the ground realities still indicate unresolved weaknesses across the global RMG supply chain.

The magnitude of the Rana Plaza incident and the dynamics of the aftermath that led to external input from global players were unprecedented. The critical facilitation of campaigners, consumers and trade unions had a vital shared purpose that not only unmasked the scale of this critical juncture but also the history of repetitive human shortcomings that resulted in tragedies in RMG

factories of Bangladesh. The implementation of the Accord and the Alliance introduced a symbiotic liaison amongst key actors which directed towards renegotiation of their roles and responsibilities. The foreign regimes also were visibly effective in establishing a model for reformed workplace standards and provided a functional template for designing an institutionally obligatory arrangement that may be applicable to other types of industries, other developing nations, or other set of demands. Moreover, these initiatives also demonstrated that labour unions can play a powerful role when they stand united, a principle which may serve as a model for future.

The significant response of consumers around the world after the Rana Plaza incident was elaborated in Chapter 6. At this critical juncture, it was realised that consumer power could mobilise labour rights and even induce synergy in global export governance. However, literature and desktop reviews revealed that while labour governance was institutionalised in several Western signatories to the Accord and the Alliance, it was insubstantial in the context of Bangladesh. The relationships among actors revolve around politics and financial superiority, with each actor group positioned at varied levels of power within the global supply chain. Similarly, as evident after the Rana Plaza tragedy, campaigns stirred up a media storm that tarnished the reputation of some renowned brands. However, it was only the weaker brands that showed eagerness for image repair, while bigger brands remained unaffected. Although perhaps not flawlessly, the Accord and the Alliance have showcased dealing with multi-dimensional complications through binding agreements with unions, guaranteeing buyers and amendment of regulations. They stipulated to the RMG industry that the mere possibility of losing business would warn factory owners to avoid damaging the reputation of their workplace conditions.

The findings of this research have exposed people's mistrust in the current regulatory system. As discussed earlier, the involvement of certain global partners including UNI Global and IndustriALL motivated the connection between retailers and workers after the Rana Plaza incident. However, both these organisations have refused to extend their support for the RSC. The local authorities' failure to curb corruption in their operation and ascertain

compliance with existing regulations have raised doubts regarding the efficiency of government policies. Nevertheless, the Bangladesh Government can control governance issues inherent within the garments supply network that caused incidents like the Rana Plaza collapse. The multidimensional nature of governance issues generated through the GoB-business nexus and compounded by the factory owners' greed for maximisation of profit resulted in the current state of affairs where none of the actor groups take responsibility for the errors made. Moreover, state's refusal to extend the tenure of international authorities opened an opportunity for local actors to readjust safety protocol practices according to their individual convenience. External input from global players was considerably effective in improving the safety governance model for RMG building regulations within Dhaka's contextual reality. Whether or not these externally introduced improvements in regulations prove to be "sustainable" will entirely depend on the interactions and negotiations at multiple levels between organisations, manufacturers, nations, and global partners against the background of authority and power dynamics that prevail within the local cultural context. Finally, this thesis can be concluded responding to the main research question:

How does external input from global stakeholders motivated by industrial accidents inspire confidence among local actors in delivering sustainable safety of industrial buildings?

The response to this question may be simply summed up from the RMG industry's readiness to prevent unprecedented disasters rather than preparedness for the management of such unfortunate outcomes. The study investigated the prospects of sustainability of building safety regulatory reforms introduced in Bangladesh's RMG factories between 2013 and 2019, through external agencies representing overseas buyers. In doing so it obtained an insight into the perceptions of sustainable safety of the built environment among key actors involved in the designing, operating and regulating RMG factories, and their views on the allocation of responsibility of safety failures among actors.

A relentless pursuit of safety compliance should remain the highest priority for the Bangladeshi Government and its RMG industry. As evident in Chapter 8 findings, future practitioners admit to lacking confidence in their ability to prevent building accidents in the future. They have acknowledged their powerlessness in guaranteeing elimination of unprofessional conduct and/or unethical practices that create room for negligence of safety measures. In the multi-stakeholder industry of RMG, any one actor group cannot be independently responsible for safeguarding against workplace disasters. This research reinforces the connection between sustainable building safety, duty of care and a shared sense of responsibility across the primary actor groups. A collaborative effort is required to provide self-assurance to each actor to perform sincerely and maintain transparency in practice.

Over the past decade, following the Rana Plaza disaster, regulatory responsibility within the country's garment industry has been transformed thrice. Until 2013, it was under the traditional regulatory agencies of Bangladesh like RAJUK and other local authorities. It was then handed over to the transnational regimes—the Accord and the Alliance. Currently, it is under the RSC, which is primarily governed by the BGMEA and is independent of other local regulators. This trend of transferring authority rather than promoting evolution of regulatory capacity of an existing system over time, could undermine the sustainability of any progress. This could also cause lack of confidence among primary actors to provide a sustainable built environment that is governed by a regulatory system which has not been tested over time.

The findings of this research have unveiled civil society's scepticism regarding the future of Dhaka's built environment. Exit of the transnational regimes was disapproved of by labour activists, NGOs, international brands and others. The current capacity of national agencies to effectively oversee the numerous and complex responsibilities is doubtful as these agencies are widely believed to work without transparency or accountability. The national inspectorate for regulating RMG buildings has inadequate inspectors to monitor all the garment factories that were under each of the two transnational agencies. Nevertheless, the Government of Bangladesh

intends to sustain the rigorous safety standard regime modelled by transplanted external regulatory agencies. However, this approach requires a long-term, systematic approach emphasising elimination of the contextual root causes of building collapses, unsafe working conditions, threats of fire outbreaks and eventual loss of lives.

Furthermore, this thesis brings into focus the great dilemma whereby global production networks search for low-cost production nodes to maximise profits. The improvements required in the workplace undermine the prospect of the node to continue low-cost manufacturing of ready-made garments. Low costs within such potential production networks are guaranteed by the ready availability of abundant cheap labour and often minimally regulated workplaces. Improved standards of working conditions, on the other hand, are expected to achieve the required levels of global production efficiency. There is an additional cost of catering to concerns of the final consumers of the product—an element that could be triggered by high impact, globally reported workplace disasters in the low-cost production hubs. Such costs could compromise the preferred workplace safety status of manufacturing factories within a developing region.

In the case of Dhaka's RMG sector, the study found that the Government of Bangladesh was yielding to global pressures to reform workplaces as a short-term strategy for the industry's image repair, but then largely reverting to the previous set up to regain the region's low-cost status. This leads to the conclusion that transfer of technology directed by developed countries to reform safety regulations within a developing country will not sustain without instilling a collectively shared sense of responsibility among key actors. A rapid transplantation of regulatory reforms to fulfill demands of global stakeholders prove ineffective in inspiring confidence among local actors who lack supporting contextual safety culture and ethical social system to sustain the reformations and ensure an overall safe built environment.

10.2 Recommendations

Despite mounting keenness in developing countries for manufacture and export of ready-made garments, role and responsibilities of the national

government, regulators, factory owners, global partners and other relevant actors in the RMG industry of Bangladesh appear to be allocated from a subjective standpoint. Nearly a decade after the two historic factory tragedies, the outcomes of building safety reformations have considerably overlooked the central concern—the future. The GoB has been narrowly focused on its motivation to convince global partners that safety regimes have improved sufficiently, to ensure continued production orders from overseas buyers. This has resulted in a situation where most of the key actors have failed to effectively take advantage of the positive input of transnational initiatives to adopt a safety culture and incorporate complete corporate social responsibility to ensure and sustain safety within this global supply chain network.

The following are the key approaches and recommendations to facilitate and moreover, sustain the building safety reformations attained through the global response to Dhaka's RMG factory disasters.

10.2.1 Safety Education to be enhanced in Academic Curricula

The emergence of the RMG industry in Bangladesh raises the challenge for educators to revise the curricula to adapt to expected global work environment standards to ensure their graduates aspire to meet relevant professional obligations. The spectrum of education delivered needs to be altered accordingly to keep up with the rapid growth of this industry and aspire to eliminate preventable factory disasters. Professional institutes can collaborate with educators to update academic curricula. The focus of these curricula should be on developing a fire resilient, safe, and sustainable built environment within a megacity like Dhaka and throughout the country. Students should obtain an education that is aligned with the UN 2030 Sustainable Development Goals that Bangladesh has committed to embrace (also discussed in Chapter 4).

The recommendations in this area may be summarised as follows:

- Safety and sustainability should be taught as interdependent subjects with design and structure. Future architects and engineers should be

equipped with adequate knowledge to deliver sustainable building safety along with meeting aesthetics, function, and cost requirements.

- Curricula should be modified according to the changing built environment of the RMG sector and workplace standards.
- Students should have the opportunity to attain specialisation in building safety through post-graduation diplomas or other short courses which could be accredited by relevant regulatory agencies.

10.2.2 Transparency: Strengthen Regulatory Governance and Enforce Mandatory Penalisation

The purpose for regulatory governance should be the establishment of institutional competence to strengthen coordination between the Government of Bangladesh and an autonomous regime along with the private sector, civil society, global partners, and local professionals for stringent governance.

1. A single agency with impartial members from the BGMEA and the BKMEA, regulators, members of professional institutes and labour union representatives, needs to be established inclusive of a high-level investigative committee to regulate, monitor, inspect and conduct enquiries into RMG factory disasters.

Despite the occurrence of two historic garment factory disasters, the Bangladesh Government or regulatory bodies are yet to impose exemplary penalisation of those charged for negligence and violation of building and workplace safety regulations. A top priority for a stringent regulatory agency should be to carry out prosecution, transparent investigation, and befitting penalisation of negligent factory owners and management to spur law enforcement and other agencies to take more proactive safety measures to avoid accidents.

- A sophisticated investigative organisation needs to be established to enquire into all factory hazards involving fatalities or severe injuries, determine the causes and issue a public report of its findings.

10.2.3 Allocate Responsibility among Key Actors

This thesis, on the basis of research, observations and findings, advocates distinctly articulated roles and responsibilities for the key actors who perform

within the globalised RMG industry. As the garment sector of Bangladesh is multi-layered with miscellaneous experts and authorities, the rectifications must also be multi-dimensional.

This section lists recommendations for each actor group identified in this thesis as follows:

Educators

- Deliver adequate knowledge to students to assist them realise their responsibility to promote sustainable building safety within industrial buildings particularly within the RMG sector.
- Use lessons from the past factory building disasters and collaborate with professional institutes and practitioners to make students more aware of their duty to comply with regulations and serve responsibly towards preventing building hazards in the future.
- Educators can work collaboratively with professional institutes to update the curricula in accordance with the challenges spurred by globalisation impacting the built environment.

Practitioners

- Professional institutes need to develop and implement strict guidelines to define practitioners' roles in delivering a safe built environment and their duty towards compliance with consequences for irresponsible and unethical practices.
- Exemplary action should be taken by professional institutes against any practitioner who compromises safety measures, fails to expose safety breach or is seen to be negligent.

Owners/Management

- Owners should realise their obligation to conduct appropriate due-diligence methods to address, counteract, mitigate hazards, and be answerable for their ways of impacting these human rights.
- They should acquire knowledge and information on safety regulations and international workplace standards.

Regulators

- Professional institutes should seek legislation to ensure that projects are constructed as approved by authorities and not modified by owners or contractors during construction.
- Seek government support to acquire sufficient workforce and expertise for effective monitoring and inspection of all RMG factories and industrial buildings throughout design approval, construction, operation, and maintenance.
- Should contribute to modification of regulations with the changing requirements of global standards.
- They should reconstruct their reputation as honest and effective representatives of the government, regulations, and laws by ensuring that inspectors adhere to the code of conduct in carrying out factory inspections, taking strict actions against non-compliance of safety standards.

Global Partners

- i) Brands and retailers should address their moral responsibility towards finding measures to ensure workers' health and safety in global production nodes in developing countries that meet international safety standards.
- ii) Global partners should acknowledge the significant role of foreign buyers and organisations like the ILO within the globalised RMG supply chain network in actively or passively impacting the working standards in garment factories.
- iii) International buyers should develop a reliable system for tracking their orders to eliminate the trend of subcontracting.

Apart from the above key actors, the BGMEA also can work towards promoting building safety standards in the RMG industry of Bangladesh. The organisation's awareness of the existing and shifting rules and regulations for factory building safety and workplace conditions is crucial. As representatives of the Bangladesh RMG industry, the BGMEA is in a potential position to make a powerful and effective difference in the pattern of the supply chain network functions. The BGMEA can take the first step against non-compliant factories by annulling their export license and membership until they

remediate the non-compliant issues. The organisation is entitled to ensure that their members are sufficiently informed about national and international safety standards and can direct them towards enforcement of these standards within their factories.

The following section concentrates on the unresolved issue of fire related accidents in RMG factories. The sheer frequency of fire related building tragedies even in recent years indicates a systematic failure of the RMG industry to maintain fire safety within factories.

10.2.4 Recognise the Urgency to Resolve Fire Issues

Although the reformations brought about by external intervention by the Accord and the Alliance have been praiseworthy, the reality is that practices within the RMG industry of Dhaka persist to fail to deliver a fire resilient, safe built environment. The research finds that despite amendment of laws, implementation of stringent regulations and practice of regular inspections, the cause of violations of compliant procedures is rooted in ethics.

The reformations applied after the Rana Plaza collapse concentrated primarily on remediation of structural issues overshadowing the need to address the prevailing causes highlighted by the Tazreen Factory tragedy. Fire remains a recurring nightmare which mostly appears to be a consequence of negligence rather than a structural or building design flaw. The literature review and interview findings have shown that there is a greater dependence on fire escapes and firefighting measures than on precautionary measures related to maintenance and operation.

Structural issues can be clearly and instantly identified during design and construction approval of factory establishments. Moreover, they can also be detected during building inspections. However, fire safety performances can be drastically lowered by irresponsible management practices such as blocking exit ways with storage of raw materials or locking fire doors- practices that can be kept hidden or temporarily taken care of at the time of inspection. Wilful negligence or even managerial incompetence can cause horrific hazards. Even in structurally sound and safety compliant RMG factory

buildings, operational and managerial negligence of fire risk avoidance could result in more incidents like at the Tazreen Factory tragedy.

The following recommendations are based on the findings of this research:

- It is crucial to shift the fire management culture from “disaster control” to “disaster prevention”.
- Strong legislation should be drafted to declare willful or careless attitude leading to managerial malpractice, negligence, disregard for human and workers’ rights or avoiding maintenance work.
- All building codes and regulations should be aligned with international fire safety standards and independent fire safety audits should be conducted by authorities to restrict operational negligence.
- Robust assessment and management of fire risks with educated, trained, qualified and experienced practitioners who can detect fire threats during construction and in operating factories is needed.

10.2.5 Transparency: Manage Conflict of Interest within the Current Regulatory Regime

With its operation commencing from mid-2020, the RSC is governed by global partners, national and international trade unions and the BGMEA. While their establishment may have seemed promising in the post-Accord-Alliance era, the inclusion of factory owners themselves in this regulating agency is problematic. Moreover, many of these members, as discussed in earlier chapters, are also politicians. This aspect underscores the concern over the nexus between government officials and garment manufacturers and exporters, allowing violation of regulations through corrupt practices. As expressed by several global partners and NGOs (discussed in Chapter 7), the RSC’s approach is equivalent to “self-monitoring”, which cannot be a reliable procedure for ensuring workplace safety. It compromises with Occupational Health and Safety protocol and could dilute Corporate Social Responsibility requirements. The existence the BGMEA- a coalition of factory owners, politicians and regulators may permit underlying disaster management issues to be glossed over while reducing the responsibilities of factory owners and managers towards committing to safety in workplaces.

The following recommendations are intended for the RSC, to take a holistic approach towards serving with transparency and sincerity.

- The RSC needs to set up a neutral regulatory committee with technical experts who are neither involved in the RMG network nor in politics. The committee should not receive any kind of interference in decision making or reporting.
- The agency should be committed to bridging the gaps between employers and workers to resolve distrust, achieve goals and sustain the safety reformations within the garment industry.
- The RSC should either team up with, or work alongside RAJUK, the DIFE and other local regulators to deal with non-compliant factories and develop an industrial safety culture.
- Factory inspection procedures should be independent of any internal or external pressure from factory owners, politicians, members of the BGMEA and global partners. All findings made during inspections should be reported with complete transparency and recorded in electronic database.

To ascertain that another tragedy like the Tazreen Factory or the Rana Plaza is preventable, deeper weaknesses in the global supply chain should be addressed through long-term relations with the Government, owners, practitioners, regulators, buyers and workers where each group's responsibility towards implementing and sustaining workplace safety is distinctly allocated. In order to effectually overcome the obstacles, collaboration among all actors in the global supply chain network, both public and private, inclusive of foreign buyers and consumers, owners and workers, practitioners and regulators, government and civil society, is essential.

The following sections will detail some limitations that were met with during the course of this study.

10.3 Limitations of the Research

While conducting this research, certain challenges and limitations appeared that affected how the study was carried out and some may have potentially affected the quality of the findings. These are listed below:

- An unprecedented limitation for this study came in the form of challenges presented by COVID-19 travel restrictions. Much of the study had been planned to be executed through observations and field work. COVID travel restrictions required the fieldwork plan to be revised and alternative methods put in place.
- The research is primarily based on safety issues and practices within the RMG factories of greater Dhaka. Safety requires to be designed, implemented, maintained, and sustained where the execution of safety is dependent on human actions. Some of these required actions could be based on legal requirements, moral responsibility, and/or ethical behaviour. The findings are largely based on interviews, relying on the honesty of the interviewees and their perceptions of the practices. Concealment of certain facts such as corruption or negligence by the actors themselves could perhaps have obstructed identifying some prevailing issues.
- Almost all factory workers in the garment manufacturing industry are illiterate or have very limited formal education. In this circumstance, the survey questions needed to be read out or explained to them and their responses written down by fieldworkers. It may hence be possible that, in some cases, the workers may not have responded according to their complete understanding or their responses were not accurately recorded. It is also understandable that some factory workers may have been discreet about certain facts, fearing consequences from the management of their workplaces.
- A minor challenge was to find sufficient documents in the English language as most of the materials available, especially those related to local governance or national regulations, are in Bangla.

Nevertheless, the overall findings have been enlightening and crucial to acknowledging the underlying challenges within the RMG sector of Dhaka and proposing possible ways to overcome and control the situation for sustaining safety within the garment factory workplaces.

10.4 Future Studies

It is hoped that the findings of this research could inspire future studies on related topics for promoting sustainable building safety and establishing its significance in promoting safe workplaces and an overall sustainable built environment. Some areas of focus could be intercultural studies into transfer of social technology and behavioural patterns based on comparative contextual analysis of both the promoter and the recipient of technology. Another area of interest could be to determine the role that awareness levels and adult literacy rates play in the successful adoption of safety and production planning in industrial buildings by comparing performances across various developing countries.

It is hoped that this study could inspire further research towards minimising the knowledge gap that exists regarding allocation of roles and responsibilities of key actors tasked with ensuring safety in the workplace within global supply chains.

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Appendix 1: Interview Questions for Actors

The research presented and reported in this thesis was conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007)- updated in March 2014. The proposed dissertation received human ethics approval from the Curtin University Human Research Ethics Committee (EC00262, Approval Number: HRE2020-0743).



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NOTE: The questions were designed to collect data and information from professionals and structured in accordance with each actor group's experience and expertise. The information collected in the interviews will be re-identifiable. These interviews are part of the PhD research and the responses will only be utilised for academic research purposes without revealing any participant's identification.

Approval Number: HRE2020-0743

1a. Interview Questions for Educators

- **How long have you been teaching?**
a) Less than 5 years b) 10 years + c) 15 years +

What subject do you teach?

2. Please indicate your level of agreement/disagreement with the following statement: In the context of safety measures (structural/fire/etc.) being considered and implemented in constructing industrial buildings, “Dhaka region has a safe built environment”.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Please elaborate your choice.

- i) Do you feel the curriculum gives equal preference on design and building safety?
- ii) Do the students, in your opinion gain sufficient knowledge in building safety especially that of the industrial buildings to be able to prevent disasters during their practice as professionals?

3. Do you feel “safety’ is often neglected while designing and constructing buildings in Dhaka region?

- a) Do factors like aesthetics, deadlines, cost, visual impression, etc. take precedence over “safety”?
- b)

4. Dhaka has been referred to as one of the “worst” or most “unliveable” cities of the world. Do you believe the state of workplace environment (significantly in RMG sector), has a role to play in building this reputation? How? Why?

- What according to you, are the primary concerning safety issues, if any, prevailing within Dhaka’s garment manufacturing buildings?
- Do you feel the RMG buildings can be called “sustainable” or have satisfactory workplace conditions? a) Yes b) No **Why?**

5. Had the rapid development of garments industry led to frequent building tragedies/development of risky buildings within Dhaka? Which factors, in your opinion would you consider to be most responsible for the occurrences?

1. Greed

2. Lack of experience/knowledge/inefficiency
3. Maintenance
4. Unethical practices
5. Negligence of the regulating bodies
6. Other (please specify.....)

6. Who would you consider most responsible for the previous building tragedies over the past decade that took place within the region of Dhaka?

1. Professionals (Architects/Designers/Engineers etc.)
2. RAJUK (Regulators)
3. Factory Owners/Administrators
4. Workers/Users
5. Others (please specify)
Please elaborate why...

7. How is the existing monitoring/auditing/regulating system?

- Do you feel it is effective in enhancing the standard of garment factory buildings?
- Do you feel that industrial buildings have had more frequent disasters in comparison to others? Why do you think that has been so?
- What is your opinion regarding Alliance /ACCORD/others? Do you feel they are appropriate/effective for Dhaka?

8. What is your opinion on the rate of building failures that have occurred in Dhaka over the past decade or so in comparison to other such developing cities?

- a) Rana Plaza tragedy is undoubtedly the worst till date, who would you hold responsible for that incident?
- b) Was anyone held accountable or punished? Who/Why/How?
- c) Could that or other disasters be avoided?

9. Have there been any reformations in the regulating system post the incidents e.g. after Rana Plaza tragedy? What are they?

- a) If so, are the revised regulations more effective, more powerful or more enforceable? Why? Why not?
- b) What steps are taken by regulating bodies after a building tragedy? Do you feel they are adequate?
- c) What are the more proactive measures you would suggest?

iii) Have there been any revisions in the curriculum post the incidents e.g. after Rana Plaza tragedy? What are they?

- iv) Do you feel they had been adequate?

10. It is customary to blame the regulatory system immediately after a building hazard- do you feel that is justified? Why?

- Why do you think that happens?

11. Do you see Dhaka developing into a “safe and sustainable” city in the near future? a) Yes b) No Why?

12. On a scale of 1-10 (1 being the least and 10 being the maximum), rate how much faith you have in the current local regulatory regime RSC, to operate ethically and efficiently sustain the safety improvements that have been made by the external agencies after the Rana Plaza?

13. Please kindly tick in the table below:

Allocation of Responsibility					
Key Actors	Creating Building Safety Awareness	Implementing Building Safety	Ensuring Compliant Behaviour	Preventing Future Building Disasters	Who tends to perpetuate the Blame Game for past incidents?
Educators					
Practitioners					
Regulators					
Owners					
Global Partners					
Students					
Workers					

Common Survey Questions:

14. Do you feel the Rana Plaza tragedy was an outcome of human error and preventable?

a) Yes

b) No

c) Neutral

15. Do you feel that the local actors have taken sufficient lesson from the foreign regulators to confidently apply and promote sustainable building safety within the RMG factories to avoid disasters in the future?

a) Yes

b) No

c) Neutral

16. Do you think another factory building incident like the Rana Plaza could happen in the future?

a) Yes

b) No

c) Neutral

1b. Interview Questions for Practitioners

1. What is your role in your field of service?

2. Please indicate your level of agreement/disagreement with the following statement: In the context of safety measures (structural/fire/etc.) being considered and implemented in constructing industrial buildings, “Dhaka region has a safe built environment”.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Please elaborate your choice.

P i) Do you feel you had been given adequate knowledge on building safety during your academic years? Why so?

P ii) Are your clients made adequately aware about the building safety measures that require to be taken by the regulations?

3. Do you feel “safety’ is often neglected while designing and constructing buildings in Dhaka region?

- c) Do factors like aesthetics, deadlines, cost, visual impression, etc. take precedence over “safety”?

4. Dhaka has been referred to as one of the “worst” or most “unliveable” cities of the world. Do you believe the state of workplace environment (significantly in RMG sector), has a role to play in building this reputation? How? Why?

- What according to you, are the primary concerning safety issues, if any, prevailing within Dhaka’s garment manufacturing buildings?
- Do you feel the RMG buildings can be called “sustainable” or have satisfactory workplace conditions? a) Yes b) No **Why?**

5. Had the rapid development of garments industry led to frequent building tragedies/development of risky buildings within Dhaka? Which factors, in your opinion would you consider to be most responsible for the occurrences?

- Greed
- Lack of experience/knowledge/inefficiency
- Maintenance
- Unethical practices
- Negligence of the regulating bodies

- Other (please specify.....)
Please elaborate why...

6. Who would you consider most responsible for the previous building tragedies over the past decade that took place within the region of Dhaka?

6. Professionals (Architects/Designers/Engineers etc.)
7. RAJUK (Regulators)
8. Factory Owners/Administrators
9. Workers/Users
10. Others (please specify)
Please elaborate why...

7. How is the existing monitoring/auditing/regulating system?

- Do you feel it is effective in enhancing the standard of garment factory buildings?
- Do you feel that industrial buildings have had more frequent disasters in comparison to others? Why do you think that has been so?
- What is your opinion regarding Alliance /ACCORD/others? Do you feel they are appropriate/effective for Dhaka?

8. What is your opinion on the rate of building failures that have occurred in Dhaka over the past decade or so in comparison to other such developing cities?

- Rana Plaza tragedy is undoubtedly the worst till date, who would you hold responsible for that incident?
- Was anyone held accountable or punished? Who/Why/How?
- Could that or other disasters be avoided?

9. Have there been any reformations in the regulating system post the incidents e.g. after Rana Plaza tragedy? What are they?

- If so, are the revised regulations more effective, more powerful or more enforceable? Why? Why not?
- What steps are taken by regulating bodies after a building tragedy? Do you feel they are adequate?
- What are the more proactive measures you would suggest?

P iii) What role did the actors from your field of service play after the building tragedies in taking responsibility or accountability?

P iv) Have there been changes since, in the way of practice?

10. It is customary to blame the regulatory system immediately after a building hazard- do you feel that is justified? Why?

- Why do you think that happens?
- Have you experienced any incident where the owner or builder has offered someone to be lenient? How common is such a practice?

11. Do you see Dhaka developing into a “safe and sustainable” city in the near future? a) Yes b) No Why?

12. On a scale of 1-10 (1 being the least and 10 being the maximum), rate how much faith you have in the current local regulatory regime RSC, to operate ethically and efficiently sustain the safety improvements that have been made by the external agencies after the Rana Plaza?

13. Please kindly tick in the table below as per your opinion based on the built environment of Dhaka:

Allocation of Responsibility					
Key Actors	Creating Building Safety Awareness	Implementing Building Safety	Ensuring Compliant Behaviour	Preventing Future Building Disasters	Who tends to perpetuate the Blame Game for past incidents?
Educators					
Practitioners					
Regulators					
Owners					
Global Partners					
Students					
Workers					

Common Survey Questions:

14. Do you feel the Rana Plaza tragedy was an outcome of human error and preventable?

- a) Yes
- b) No
- c) Neutral

15. Do you feel that the local actors have taken sufficient lesson from the foreign regulators to confidently apply and promote sustainable building safety within the RMG factories to avoid disasters in the future?

a) Yes

b) No

c) Neutral

16. Do you think another factory building incident like the Rana Plaza could happen in the future?

a) Yes

b) No

c) Neutral

1c. Interview Questions for Regulators

1. What is your role as a regulator?

2. Please indicate your level of agreement/disagreement with the following statement: In the context of safety measures (structural/fire/etc.) being considered and implemented in constructing industrial buildings, “Dhaka region has a safe built environment”.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Please elaborate your choice.

3. Do you feel “safety’ is often neglected while designing and constructing buildings in Dhaka region?

- d) Do factors like aesthetics, deadlines, cost, visual impression, etc. take precedence over “safety”?

4. Dhaka has been referred to as one of the “worst” or most “unliveable” cities of the world. Do you believe the state of workplace environment (significantly in RMG sector), has a role to play in building this reputation? How? Why?

- What according to you, are the primary concerning safety issues, if any, prevailing within Dhaka’s garment manufacturing buildings?
- Do you feel the RMG buildings can be called “sustainable” or have satisfactory workplace conditions? a) Yes b) No **Why?**

5. Had the rapid development of garments industry led to frequent building tragedies/development of risky buildings within Dhaka? Which factors, in your opinion would you consider to be most responsible for the occurrences?

- Greed
- Lack of experience/knowledge/inefficiency
- Maintenance
- Unethical practices
- Negligence of the regulating bodies
- Other (please specify.....)

6. Who would you consider most responsible for the previous building tragedies over the past decade that took place within the region of Dhaka?

- 11. Professionals (Architects/Designers/Engineers etc.)
- 12. RAJUK (Regulators)
- 13. Factory Owners/Administrators
- 14. Workers/Users
- 15. Others (please specify)
Please elaborate why...

7. How is the existing monitoring/auditing/regulating system?

- Do you feel it is effective in enhancing the standard of garment factory buildings?
- Do you feel that industrial buildings have had more frequent disasters in comparison to others? Why do you think that has been so?
- What is your opinion regarding Alliance /ACCORD/others? Do you feel they are appropriate/effective for Dhaka?

8. What is your opinion on the rate of building failures that have occurred in Dhaka over the past decade or so in comparison to other such developing cities?

- Rana Plaza tragedy is undoubtedly the worst till date, who would you hold responsible for that incident?
- Was anyone held accountable or punished? Who/Why/How?
- Could that or other disasters be avoided?

9. Have there been any reformations in the regulating system post the incidents e.g. after Rana Plaza tragedy? What are they?

- If so, are the revised regulations more effective, more powerful or more enforceable? Why? Why not?
- What steps are taken by regulating bodies after a building tragedy? Do you feel they are adequate?
- What are the more proactive measures you would suggest?

10. It is customary to blame the regulatory system immediately after a building hazard- do you feel that is justified? Why?

- Why do you think that happens?
- Have you experienced any incident where the owner or builder has offered someone to be lenient? How common is such a practice?

i) Do you feel regulators are rightfully known to be more corrupt than the other actors?

ii) Are the local regulators in your opinion, prepared to completely takeover monitoring responsibilities of the RMG industry?

iii) Are they equipped to sustain the reformations made by external regimes and prevent building disasters in the future?

11. Do you see Dhaka developing into a “safe and sustainable” city in the near future? a) Yes b) No Why?

12. On a scale of 1-10 (1 being the least and 10 being the maximum), rate how much faith you have in the current local regulatory regime RSC, to operate ethically and efficiently sustain the safety improvements that have been made by the external agencies after the Rana Plaza?

13. Please kindly tick in the table below:

Allocation of Responsibility					
Key Actors	Creating Building Safety Awareness	Implementing Building Safety	Ensuring Compliant Behaviour	Preventing Future Building Disasters	Who tends to perpetuate the Blame Game for past incidents?
Educators					
Practitioners					
Regulators					
Owners					
Global Partners					
Students					
Workers					

Common Survey Questions:

14. Do you feel the Rana Plaza tragedy was an outcome of human error and preventable?

- a) Yes**
- b) No**
- c) Neutral**

15. Do you feel that the local actors have taken sufficient lesson from the foreign regulators to confidently apply and promote sustainable building safety within the RMG factories to avoid disasters in the future?

- a) Yes**
- b) No**
- c) Neutral**

16. Do you think another factory building incident like the Rana Plaza could happen in the future?

- a) Yes**
- b) No**
- c) Neutral**

1d. Interview Questions for Factory Owners/Management

1. What product do you manufacture?

- a) RMG b) other

Please indicate your level of agreement/disagreement with the following statement: In the context of safety measures (structural/fire/etc.) being considered and implemented in constructing industrial buildings, “Dhaka region has a safe built environment”.

- a) Strongly Agree
- b) Agree
- c) Neutral
- d) Disagree
- e) Strongly Disagree

Please elaborate your choice.

i) Do you require the manufacturing/production units to be housed in properly designed building structures?

ii) Do you try to ensure that the buildings are adequately designed and structurally sound and operational safety protocol is in place? How?

2. Do you feel “safety” is often neglected while designing and constructing buildings in Dhaka region?

-Do factors like aesthetics and visual impression, or meeting deadlines and managing costs, etc. take precedence over ensuring “safety” while designing garment factories?

-Among professionals (architects, engineers, etc.), regulators, clients or owners, who in your opinion mostly overlooks “safety” concerns?

3. Dhaka has been referred to as one of the “worst” or most “unliveable” cities of the world. Do you believe the state of workplace environment (significantly in RMG sector), has a role to play in building this reputation? How? Why?

- What according to you, are the primary concerning safety issues, if any, prevailing within Dhaka’s garment manufacturing buildings?
- Do you feel the RMG buildings can be called “sustainable” or have satisfactory workplace conditions? **a) Yes b) No Why?**

4. Had the rapid development of garments industry led to frequent building tragedies/development of risky buildings within Dhaka? Which factors, in your opinion would you consider to be most responsible for the occurrences?

- Greed
- Lack of experience/knowledge/inefficiency
- Maintenance
- Unethical practices
- Negligence of the regulating bodies
- Other (please specify.....)

5. Who would you consider most responsible for the previous building tragedies over the past decade that took place within the region of Dhaka?

2. Professionals (Architects/Designers/Engineers etc.)
3. RAJUK (Regulators)
4. Factory Owners/Administrators
5. Workers/Users
6. Others (please specify)
Please elaborate why...

6. How is the existing monitoring/auditing/regulating system?

- Do you feel it is effective in enhancing the standard of garment factory buildings?
- Do you feel that industrial buildings have had more frequent disasters in comparison to others? Why do you think that has been so?
- What is your opinion regarding Alliance/ACCORD/others? Do you feel they are appropriate/effective for Dhaka?

7. What is your opinion on the rate of building failures that have occurred in Dhaka over the past decade or so in comparison to other such developing cities?

- Rana Plaza tragedy is undoubtedly the worst till date, who would you hold responsible for that incident?

- Was anyone held accountable or punished? Who/Why/How?
- Could that or other disasters be avoided?

8. Have there been any reformations in the regulating system post the incidents e.g. after Rana Plaza tragedy? What are they?

- If so, are the revised regulations more effective, more powerful or more enforceable? Why? Why not?
- What steps are taken by regulating bodies after a building tragedy? Do you feel they are adequate?
- What are the more proactive measures you would suggest?

9. It is customary to blame the regulatory system immediately after a building hazard- do you feel that is justified? Why?

- Why do you think that happens?
- Have you experienced any incident where the owner or builder has offered someone to be lenient? How common is such a practice?

10. Do you see Dhaka developing into a “safe and sustainable” city in the near future? a) Yes b) No Why?

11. On a scale of 1-10 (1 being the least and 10 being the maximum), rate how much faith you have in the current local regulatory regime RSC, to operate ethically and efficiently sustain the safety improvements that have been made by the external agencies after the Rana Plaza?

Allocation of Responsibility					
Key Actors	Creating Building Safety Awareness	Implementing Building Safety	Ensuring Compliant Behaviour	Preventing Future Building Disasters	Who tends to perpetuate the Blame Game for past incidents?
Educators					
Practitioners					
Regulators					
Owners					
Global Partners					
Students					
Workers					

Common Survey Questions:

Do you feel the Rana Plaza tragedy was an outcome of human error and preventable?

- a) Yes**
- b) No**
- c) Neutral**

Do you feel that the local actors have taken sufficient lesson from the foreign regulators to confidently apply and promote sustainable building safety within the RMG factories to avoid disasters in the future?

- a) Yes**
- b) No**
- c) Neutral**

Do you think another factory building incident like the Rana Plaza could happen in the future?

- a) Yes**
- b) No**
- c) Neutral**

1e. Interview Questions for Global Partners

1. What is your role in your place of service?

2. Please indicate your level of agreement/disagreement with the following statement: In the context of safety measures (structural/fire/etc.) being considered and implemented in constructing industrial buildings, “Dhaka region has a safe built environment”.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Please elaborate your choice.

i) Please discuss the monitoring process of ILO/your company in ensuring health and safety of garment factory workers within Dhaka region.

ii) When do you get involved with the safety environment of a garment manufacturing building?

iii) How does ILO/your company deal with RAJUK/RSC other concerning authorities regarding implementation of workplace safety?

iv) What steps can ILO/your company take if safety within workplace is not maintained or practiced?

3. Do you feel “safety’ is often neglected while designing and constructing buildings in Dhaka region?

e) Do factors like aesthetics, deadlines, cost, visual impression, etc. take precedence over “safety”?

f)

4. Dhaka has been referred to as one of the “worst” or most “unliveable” cities of the world. Do you believe the state of workplace environment (significantly in RMG sector), has a role to play in building this reputation? How? Why?

- What according to you, are the primary concerning safety issues, if any, prevailing within Dhaka’s garment manufacturing buildings?

- Do you feel the RMG buildings can be called “sustainable” or have satisfactory workplace conditions? **a) Yes b) No Why?**

5. Had the rapid development of garments industry led to frequent building tragedies/development of risky buildings within Dhaka? Which factors, in your opinion would you consider to be most responsible for the occurrences?

- a) Greed
- b) Lack of experience/knowledge/inefficiency
- c) Maintenance
- d) Unethical practices

- e) Negligence of the regulating bodies
- f) Other (please specify.....)

6. Who would you consider most responsible for the previous building tragedies over the past decade that took place within the region of Dhaka?

- 7. Professionals (Architects/Designers/Engineers etc.)
- 8. RAJUK (Regulators)
- 9. Factory Owners/Administrators
- 10. Workers/Users
- 11. Others (please specify)
Please elaborate why...

7. How is the existing monitoring/auditing/regulating system?

- Do you feel it is effective in enhancing the standard of garment factory buildings?
- Do you feel that industrial buildings have had more frequent disasters in comparison to others? Why do you think that has been so?
- What is your opinion regarding Alliance/ACCORD/others? Do you feel they are appropriate/effective for Dhaka?

8. What is your opinion on the rate of building failures that have occurred in Dhaka over the past decade or so in comparison to other such developing cities?

- Rana Plaza tragedy is undoubtedly the worst till date, who would you hold responsible for that incident?
- Was anyone held accountable or punished? Who/Why/How?
- Could that or other disasters be avoided?

9. Have there been any reformations in the regulating system post the incidents e.g. after Rana Plaza tragedy? What are they?

- If so, are the revised regulations more effective, more powerful or more enforceable? Why? Why not?
- What steps are taken by regulating bodies after a building tragedy? Do you feel they are adequate?
- What are the more proactive measures you would suggest?

v) What role did ILO/your company play after the building tragedies of the past?

- vi) Did you take responsibility/accountability for the incidents?

10. It is customary to blame the regulatory system immediately after a building hazard- do you feel that is justified? Why?

- Why do you think that happens?
- Have you experienced any incident where the owner or builder has offered someone to be lenient? How common is such a practice?

11. Do you see Dhaka developing into a “safe and sustainable” city in the near future? a) Yes b) No Why?

12. On a scale of 1-10 (1 being the least and 10 being the maximum), rate how much faith you have in the current local regulatory regime RSC, to operate ethically and efficiently sustain the safety improvements that have been made by the external agencies after the Rana Plaza?

13. Please kindly tick in the table below as per your opinion based on the built environment of Dhaka:

Allocation of Responsibility					
Key Actors	Creating Building Safety Awareness	Implementing Building Safety	Ensuring Compliance Behaviour	Preventing Future Building Disasters	Who tends to perpetuate the Blame Game for past incidents?
Educators					
Practitioners					
Regulators					
Owners					
Global Partners					
Students					
Workers					

Common Survey Questions:

Do you feel the Rana Plaza tragedy was an outcome of human error and preventable?

- a) Yes**
- b) No**
- c) Neutral**

Do you feel that the local actors have taken sufficient lesson from the foreign regulators to confidently apply and promote sustainable building safety within the RMG factories to avoid disasters in the future?

- a) Yes**
- b) No**
- c) Neutral**

Do you think another factory building incident like the Rana Plaza could happen in the future?

- a) Yes**
- b) No**
- c) Neutral**

Appendix 2: Survey Questionnaires for Workers and Students



Department: School of Design and the Built Environment
CURTIN UNIVERSITY
Perth, Western Australia

NOTE: The questions were designed to collect data and information from factory workers and students of relevant discipline. The information collected in the surveys will be non-identifiable. These surveys are part of the PhD research and the responses will only be utilised for academic research purposes without revealing any participant's identification.

Approval Number: HRE2020-0743

2a. Survey Questionnaire for Factory Workers

- a) How long have you been working in this sector?
b) Less than 1 year b) more than 2 years c) 5+ years

- b) What was your main reason for joining the RMG sector?
a) poverty b) work environment c) high wages d) prestige e) other

- c) In case of Rana Plaza, the deadliest building disaster that occurred in the RMG sector in Bangladesh, the main cause was the building not being originally designed to function as a factory, are you aware if the building you work in had been built to function as a factory?
a) Yes b) No

- d) Are you aware of the building disasters that have taken place in Dhaka in the past decade or so?
a) Yes b) No

- e) Garment factory buildings, functioning/operating presently, are not risky and the overall built environment of Dhaka is safe.
• Strongly Agree b) Agree c) Neutral d) Disagree e) Strongly Disagree

- f) The building you work in, is safe.
a) Strongly Agree b) Agree c) Neutral d) Disagree e) Strongly Disagree

- g) Are the workers made aware of the measures to be taken in case of any building hazard?
a) Yes b) No
- h) Are the workers trained through drills, etc. about using the safety measures such as the fire exit, extinguisher, etc.?
a) Yes b) No
- i) It is mandatory to train and create awareness among the workers about workplace and building safety.
a) Strongly Agree b) Agree c) Neutral d) Disagree e) Strongly Disagree
- i) Are you aware of any one being penalized for the past building disasters?
a) Yes b) No
b) If so then who: Regulators/Owners/Builders/Architects
- j) In your knowledge, had any of the victims/the families of the affected by the building disasters been compensated by the owners or provided with any aid?
a) Yes b) No
b) If yes then how: i) financially ii) providing accommodation iii) providing employment iv) other
- k) In case of any building hazard that may occur, the ones responsible, would be penalized by the law.
i) Strongly Agree b) Agree c) Neutral d) Disagree e) Strongly Disagree
- l) As far as the accountability for building disasters is concerned, how would you rate (1-10) each of the following:
- a) Practitioners
 - b) Regulators
 - c) Clients/Owners
 - d) Global Partners
 - e) Others

Common Survey Questions:

Do you feel the Rana Plaza tragedy was an outcome of human error and preventable?

- a) Yes**
- b) No**
- c) Neutral**

Do you feel that the local actors have taken sufficient lesson from the foreign regulators to confidently apply and promote sustainable building safety within the RMG factories to avoid disasters in the future?

- a) Yes**
- b) No**
- c) Neutral**

Do you think another factory building incident like the Rana Plaza could happen in the future?

- a) Yes**
- b) No**
- c) Neutral**

2b. Translated Survey Questionnaire for Factory Workers

- আপনি কতিদিন ধরে এই লাইনে কাজ করেছেন?
ক) ১ বছরেরও কম খ) ২ বছরের :বিশ গ) ৫+ বছর
- গাম>ে?স লাইনে :যাগদােনের :পছেন আপনার মূল কারণD কী িছিল?
ক) দারি F খ) কােজের পিরেবশ গ) উ :বতন ঘ) ময>াদা ঙ) অনFানF
- রানা Lাজা দুঘ>টনা বাংলােদেশর গাম>ে?স খােতে সবেচেয় মারাRক িবিSং িবপয>য়। এর মূল কারণD িছিল মূলত ভবনD কারখানা িহসােব কাজ করার জনF িডজাইন করা হয়িন। আপনি িক
জােনন, আপনি :য িবিSংেয়র কাজ করেন :সই িবিSংD কারখানা করার জনFই িনম>ান করা
হেয়িছেলা িক না?
ক) হঁFা খ) না
- গত এক দশেক ঢাকায় যতYেলা িবিSং িবপয>য় ঘ:টেছ :স সZেক> আপনার িক :কােনা
ধারনা আেছ?
ক) হঁFা খ) না
- যিদ উপেরর [ে]র উ]র হঁFা হয়; তাহেলও িক আপনি িনেজর কম>ে^ে_ "িনরাপদ" :বাধ
করন?
ক) হঁFা খ) না
- আপনি িক আশ'া করেন :য আপনি :য িবিSংDেত কাজ করেছন, :সD িবপয>েয়র বাb ঁ
িকেত পড়েত পারে?
ক) হঁFা খ) না :কন?
- আপনি িক মেন করেন ঢাকার :বিশরভাগ িশd ভবনYিল "িনরাপদ"?
ক) হঁFা খ) না
- িবিSং যিদ কখনা বাb ঁ িকপুন> অব্ায় পের তখন িক করনীয় :স সZেক> gিমকদের
িক সেচতন করা হেয়েছ?
ক) হঁFা খ) না
- gিমকদেরিকজরhরীবহগ>মন,আঁিনব>াপকযTইতFা্দিবFবহােররিবষেয়ি েলর/ অনুশীলেনর
মাধFেমে [িশি^ত করা হ:য়েছ?
ক) হঁFা খ) না
- যিদ না হেয় থাকে তাহেল, আপনি িক তা করা Yrhnপূণ> বেল মেন করেন? ক) হঁFা খ) না
- 2. আেগর িবিSং িবপয>য়Yেলেেত কােরা শািo হেয়েছ বেল িক আপনি pেনেছন? ক)
হঁFা খ) না
- 3. আপনি িক িবিSং িবপয>েয় ^িতqf এমন :কান gিমক বা পিরবারেক :চেনন যােদের জনF
মালিকরা ^িতপূরণ বা সহায়তার বFর্বা করেছন?
ক) হঁFা খ) না

4. আপিন িক মেন করেন :কানও িবিSং িবপয>য়ে দায়ী বFািরা আইনর ারা দিত হেবন?

ক) হঁFা খ) না

• িবিSং িবপয>য়ের জনF দায়ব

:দেবন? (১-১০):

- :পশাজীবী

- িনয়Tক

- মালিক

- িবিনেয়গকরী / অনFানF

তার িবেবচনায় আপিন নীেচর িবষয়Yেলােকে কীভাবে নVর

2c. Survey Questionnaire for Students

1. Please indicate your level of agreement/disagreement with the following statement: "Dhaka has a safe built environment".
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree

- Are the current students made aware of the "safety" issues to consider during the design process?
 - i) Yes b) No

1. Please indicate your level of agreement/disagreement with the following statement: "Safety" is given sufficient emphasis in relation to aesthetics or function in architectural education.
 - i) Strongly Agree
 - ii) Agree
 - iii) Neutral
 - iv) Disagree
 - v) Strongly Disagree

2. Are the students taught/educated on industrial building design?
 - b) Yes b) No

3. Please indicate your level of agreement/disagreement with the following statement: "Industrial building design should be part of the architectural curriculum".
 - i) Strongly Agree
 - ii) Agree
 - iii) Neutral
 - iv) Disagree
 - v) Strongly Disagree

4. Please indicate your level of agreement/disagreement with the following statement: In this era, where sustainability and overall safety are concerning issues, the education system in Bangladesh provides sufficient knowledge to the students on these matters.
 - a) Strongly Agree
 - b) Agree

- c) Neutral
- d) Disagree
- e) Strongly Disagree

5. Please indicate your level of agreement/disagreement with the following statement: "Safety and sustainability are strongly related".

- i) Strongly Agree
- ii) Agree
- iii) Neutral
- iv) Disagree
- v) Strongly Disagree

6. Please indicate your level of agreement/disagreement with the following statement: "Safety is presumed to be inherent in buildings, architects tend to overlook its significance in designing products/spaces, etc.".

- 1. Strongly Agree
- 2. Agree
- 3. Neutral
- 4. Disagree
- 5. Strongly Disagree

7. What are your views on the current building regulatory system (RAJUK and others) in Dhaka? Please tick 5 appropriate descriptors from the following:

- 2) Strict
- 3) Flexible
- 4) Modern
- 5) Obsolete
- 6) Effective
- 7) Ineffective
- 8) Transparent
- 9) Non-transparent
- 10) Corrupt
- 11) Some elements of corruption
- xi) Ethical
- xii) Unethical

8. Are you aware of the foreign interventions Accord/Alliance in the garment sector, after the Rana Plaza incident?

- o Yes
- b) No

9. If so, what are your views on these systems? (Please tick)

- a) Effective
- b) Ineffective
- c) not applicable in Bangladesh

d) Other (please specify)_____

10. Do you see Dhaka developing into a “safe, liveable and sustainable” city in the near future? a) Yes b) No

11. For the building tragedies in Dhaka over the past few decades, how would you divide the blame in percentage among the following.:

- i) Professionals (Architects/Designers/Engineers etc.)
- ii) Regulators (RAJUK)
- iii) Educators
- iii) Factory Owners/Administrators
- iv) Global Partners
- v) Workers/Users
- vi) Other (please specify)

Common Survey Questions:

Do you feel the Rana Plaza tragedy was an outcome of human error and preventable?

- a) Yes**
- b) No**
- c) Neutral**

15. Do you feel that the local actors have taken sufficient lesson from the foreign regulators to confidently apply and promote sustainable building safety within the RMG factories to avoid disasters in the future?

- a) Yes**
- b) No**
- c) Neutral**

16. Do you think another factory building incident like the Rana Plaza could happen in the future?

- a) Yes**
- b) No**
- c) Neutral**

Appendix 3A: Participant Information Sheet and Consent Form for Interviews



Department: School of Design and the Built Environment

CURTIN UNIVERSITY

Perth, Western Australia

5. Participant Information Form for Interviews

What is the Project About?

Background:

- a) The contribution of the garment manufacturing industry in the economy of Bangladesh, has been more remarkable than any other sector. However, in the city of Dhaka, its capital, there has been a series of industrial building disasters in the past decade or so, which has not just cost thousands of lives but also affected the city's global image, the country's economy and even positioned the city high, among the list of the unliveable places.
 - b) Dhaka has been experiencing rapid economic development; it is hence needed to explore the safety issues/aspects that may have been avoided earlier when designing and maintaining industrial buildings. This could perhaps lead to safer industrial buildings, prevent future collapses and save lives.
- The study aims to explore more sustainable ways to prevent such tragedies from occurring in the future and incorporate "safety" within industrial buildings.
 - This study could contribute towards tracing the shortcomings prevalent within Dhaka's industrial built environment and assist to allocate responsibility for those involved in building, running and maintaining it.
 - The project involves no children but only adults who will be interviewed for the purpose of study and data collection.

Who is doing the Research?

- a) The project is being conducted by Shagufta Munir Trishna, under the supervision of Associate Professor Shahed Khan.
- The results of this research will be used by Shagufta Munir Trishna to obtain a Doctor of Philosophy at Curtin University and is funded by the University.
- There will be no costs and you will not be paid for participating in this project.

Why am I being asked to take part and what will I have to do?

- b) You have been asked to take part because you have experience and expertise, working in this field/been involved in this industry.
- c) Your participation will only involve interviews that will take about 1 hour.
- d) The study will take place in Dhaka (where possible or online), at places convenient for the participants.
- We will ask questions about industrial building tragedies and the safety issues that need to be regulated and practised.
- The interview will need to be done just once.
- It can be returned as per convenience via email.
- Each interview should not take more than an hour.
- There will be no cost to you for taking part in this research and you will not be paid for taking part.
- With your permission, we will make an audio/video recording of the interviews so we can concentrate on what you have to say and not be distracted with taking notes.
- Medical or health related information will not be required.
- The information collected in the interviews will be re-identifiable. The participants will provide their names and the names of the company/organization they are involved with along with their designation. When the interviews are transcribed, the names will be removed and coded and can only be identifiable through codes. The coded information will be stored as records.
- Given this unfortunate situation of the pandemic, all interviewees will be recruited via email or phone calls. You will be emailed a consent form after you agree to take part; the consent form is to be signed and emailed back to me prior to the interviews. All interviews will be carried out remotely, online. You may respond through video conferencing at your time of convenience and availability.
- Participation in a research project is voluntary. It is your choice to take part or not. You do not have to agree if you do not want to. If you decide to take part and then change your mind, that is okay, you can withdraw from the project without any obligation. Any information

collected from you will be securely stored for 7 years.

Are there any benefits to being in the research project?

- There will be no cost involved for taking part in this research. You may not benefit personally from this research but the findings may assist to enhance safety within the industrial buildings and prevent future building disasters.
- The project will give you complete freedom to express your views/opinions/feelings on the subject.
- The research may help to enhance or reform industrial building regulations in Dhaka and allocate responsibility among those involved for a more sustainable working condition in the factories.

Are there any risks, side-effects, discomforts or inconveniences from being in the research project?

1. There are no foreseeable risks from this research. We have been careful to ascertain that the questions in the interviews do not cause any discomfort. But, in case of any uneasiness, the questions may be skipped. Apart from investing your time, we do not foresee any risks or inconveniences associated with involvement in this study.

Who will have access to my information?

2. The information collected from the interviews will be re-identifiable. The participants will provide their names and the names of the company/organization you are involved with along with your designation.
3. Results will not be individual but based on aggregates of all the information collected and reviewed as part of the research. The researcher (myself) and the supervisory team only will have access to the information through the study. On completion, the data will be stored securely.
4. Electronic data will be password-protected and hard copy data (including audio recording) will be kept in locked storage.
5. The information collected in this study will be kept under secure conditions at Curtin University for 7 years after the research is published and then it may be destroyed.
6. The results will be published as a PhD dissertation and may be presented at conferences or published in professional journals.

What happens next and who can I contact about the research?

If needed, both the student and her primary supervisor may be contacted; the local contact details of a Dhaka based research assistant, with his/her name, phone number and email address will be provided once the assistant is recruited.

Researcher: Shagufta Munir Trishna

Phone:

Email:

Supervisor: Associate Professor Shahed Khan

Phone:

Email:

Will you tell me the results of the research?

The results of this research may be presented at conferences or published in professional journals where you may participate. A copy of the dissertation may be sent via email to all the participants if requested. All information may be accessed through the Curtin Library after it is made available online.

Curtin University Human Research Ethics Committee (HREC) has approved this study (HREC number **HRE2020-0743**). Should you wish to discuss the study with someone not directly involved, in particular, any matters concerning the conduct of the study or your rights as a participant, or you wish to make a confidential complaint, you may contact the Ethics Officer on (08) 9266 9223 or the Manager, Research Integrity on (08) 9266 7093 or email hrec@curtin.edu.au.

6. Consent Form for Interviews

HREC Project Number:	HRE2020-0743
Project Title:	Sustainable Building Safety within Dhaka's Supply Chain Network: Analysing the Global Response to Disasters in Ready-Made Garment Factories
Chief Investigator:	Dr. Shahed Khan, Associate Professor
Student researcher:	Shagufta Munir Trishna
Version Number:	
Version Date:	

1. I have read/ *had read to me in my first language*, the information statement version listed above and I understand its contents.
2. I believe I understand the purpose, extent and possible risks of my involvement in this project.
3. I voluntarily consent to take part in this research project.
4. I have had an opportunity to ask questions and I am satisfied with the answers I have received.
5. I understand that this project has been approved by Curtin University Human Research Ethics Committee and will be carried out in line with the National Statement on Ethical Conduct in Human Research (2007).
6. I understand I will receive a copy of this Information Statement and Consent Form.
7. I do / I do not consent to being audio-recorded

Participant Name	
Participant Signature	
Date	

Declaration by researcher: I have supplied an Information Letter and Consent Form to the participant who has signed above, and believe that they understand the purpose, extent and possible risks of their involvement in this project.

Researcher Name	Shagufta Munir Trishna
Researcher Signature	
Date	

Note: All parties signing the Consent Form must date their own signature.

Appendix 3B: Participant Information Sheet and Consent Form for Surveys



Department: School of Design and the Built Environment
CURTIN UNIVERSITY
Perth, Western Australia

1a) Participant Information Form for Surveys

What is the Project About?

Background:

- c) The contribution of the garment manufacturing industry in the economy of Bangladesh, has been more remarkable than any other sector. However, in the city of Dhaka, its capital, there has been a series of industrial building disasters in the past decade or so, which has not just cost thousands of lives but also affected the city's global image, the country's economy and even positioned the city high, among the list of the unliveable places.
- d) Dhaka has been experiencing rapid economic development; it is hence needed to explore the safety issues/aspects that may have been avoided earlier when designing and maintaining industrial buildings. This could perhaps lead to safer industrial buildings, prevent future collapses and save lives.
- The study aims to explore more sustainable ways to prevent such tragedies from occurring in the future and incorporate "safety" within industrial buildings.
- This study could contribute towards tracing the shortcomings prevalent within Dhaka's industrial built environment and assist to allocate responsibility for those involved in building, running and maintaining it.
- The project involves no children but only adults who will be interviewed for the purpose of study and data collection.

Who is doing the research?

- e) The project is being conducted by Shagufta Munir Trishna, under the supervision of Associate Professor Shahed Khan.
- The results of this research will be used by Shagufta Munir Trishna to obtain a Doctor of Philosophy at Curtin University and is funded by the University.
- There will be no costs and you will not be paid for participating in this project.

Why am I being asked to take part and what will I have to do?

- f) You have been asked to take part because you have experience and expertise, working in this field/been involved in this industry.
- g) Your participation will only involve filling out questionnaires which may take around 10 minutes.

- h) The study will take place in factories/institutes of Dhaka, as per the participants' convenience.
- We will ask questions about industrial building tragedies and the safety issues that need to be regulated and practised within the workplaces.
 - The questionnaire will need to be done just once.
 - It can be returned to the research assistant after completion.
 - Each questionnaire would not require more than 10 minutes to be filled out.
 - There will be no cost to you for taking part in this research and you will not be paid for taking part.
 - Medical or health related information will not be required.
 - The students and workers survey participants, will be non-identifiable. This means that it is not needed to collect your names or identities but only the name of the factory/institute you belong to. It is ensured you will remain anonymous.
 - You will only be asked questions related to your current situation and workplace safety. You will be guaranteed anonymity as the survey questionnaire will not record your names, age or any such personal information but only the name of your employer. The questions are based only on opinions about the safety measures practiced and designed within your workplace. Recruitment will be done after you have volunteered and consented, once permission for survey is given by the authorities/employers. You will be informed about the survey through an announcement by the factory management, possibly during break. Only those who are willing and agree to participate, will be approached and requested to sign a consent form, which is also available in Bangla for your convenience. Signed consent forms are to be returned to the research assistant prior to responding to the questionnaire. At all times, in-country COVID-19 regulations will be followed.
 - Participation in a research project is voluntary. It is your choice to take part or not. You do not have to agree if you do not want to. If you decide to take part and then change your mind, that is okay, you can withdraw from the project without any obligation. Any information collected from you will be securely stored for 7 years.

Are there any benefits to being in the research project?

- There will be no cost involved for taking part in this research. You may not benefit personally from this research but the findings may assist to enhance safety within the industrial buildings and prevent future building disasters.
- The project will give you complete freedom to express your views/opinions/feelings on the subject.
- The research may help to enhance or reform industrial building regulations in Dhaka and allocate responsibility among those involved for a more sustainable working condition in the factories.

Are there any risks, side-effects, discomforts or inconveniences from being in the research project?

7. There are no foreseeable risks from this research. We have been careful to ascertain that the questions do not cause any discomfort. But, in case of any uneasiness, the questions may be skipped. Apart from investing your time, we do not foresee any risks or inconveniences associated with involvement in this study.

Who will have access to my information?

8. Results will not be individual but based on aggregates of all the information collected and reviewed as part of the research. The researcher (myself) and the supervisory team only will have access to the information through the study. On completion, the data will be stored securely.
9. The students and workers survey participants, will be non-identifiable. This means that it is not needed to collect your names or identities but only the name of the factory/institute you belong to. It is ensured you will remain anonymous.
10. Electronic data will be password-protected and hard copy data (including audio recording) will be kept in locked storage.
11. The information collected in this study will be kept under secure conditions at Curtin University for 7 years after the research is published and then it may be destroyed.
12. The results will be published as a PhD dissertation and may be presented at conferences or published in professional journals.

What happens next and who can I contact about the research?

If needed, both the student and her primary supervisor may be contacted; the local contact details of a Dhaka based research assistant, with his/her name, phone number and email address will be provided once the assistant is recruited.

Researcher: Shagufta Munir Trishna
Phone: 04 52588980
Email: shagufta.munir@postgrad.curtin.edu.au

Supervisor: Associate Professor Shahed Khan
Phone: 08 9266 3276
Email: S.Khan@curtin.edu.au

Will you tell me the results of the research?

The results of this research may be presented at conferences or published in professional journals where you may participate. A copy of the dissertation

may be sent via email to all the participants if requested. All information may be accessed through the Curtin Library after it is made available online.

Curtin University Human Research Ethics Committee (HREC) has approved this study (HREC number XX/XXXX). Should you wish to discuss the study with someone not directly involved, in particular, any matters concerning the conduct of the study or your rights as a participant, or you wish to make a confidential complaint, you may contact the Ethics Officer on (08) 9266 9223 or the Manager, Research Integrity on (08) 9266 7093 or email hrec@curtin.edu.au

1b) Participant Information Form for Workers (in Bangla)

3ে4া5র জিরেপ অংশ\$হনকারী িনেয়াগঃ

!েRাSর জিরেপ জন5 িনবCাচিত অংশVহনকারীরা হেলন বাংলােদেশর ঢাকায় অবিYত Zপাশাক কারখানার [িমকরা। জিরপF একজন সহযোগীর মাধ5েমে মুেখামুখি অথবা অনলাইন করা হেব Zযেহত8 COVID-19 মহামারীর কারেন ঢাকায় মন এখন স_ব না। অোগই একF সািত ফেমC আVহী অংশVহনকারীেদের সািত Zনয়া হেব এবং তারপর !েRাSরMিল অনলাইনও িবতরণ করা হেত পারে। অংশVহনকারীেদেরেক ই-Zমহেলর মাধ5েমে িনেয়াগ Zদওয়া হেত পারে এবং পরবতCতীেত তােদের কাছ Zথেক ই-Zমহেলর মাধ5েমেই USরপL সংVহ করা Zযেত পারে।

3ে4র উ5র 8দয়ার জন: অংশ\$হনকারীেদের িন;িলিখত ভাবে 8মীখিক আমTন জানােনো হেবঃ

‘সালাম!

আমার নাম _ _ _ _ _ (সহযোগী)। আমি অেলিলয়ার কাFCন িবদিবদ5ালেয়র িপ.এইচ.ডি িশোখীf শামফতা মুিনর তP Qা’র গেবষণা সহকারী। এই জিরেপর মাধ5েমে, আমি বািনিজ5ক ভবনMিল িনরাপসা সহHকত িবষেয় আপনার ব5িগত মতামতMিল জানেত চাি । !IRMিল মূলত িবগত এক দশেকর সবেচেয় খারাপ িবিং িবপচয় এবং ভিবষ5েত এই জাতীয় অোরা দুঘCটনার স_াব5 বা8 ং িক সহেকC আপনার ধারণা িনেয়। !IRMিল বতCমান পিরিYিত, কমCেেLর সুরো ও িশোব5বYা, জিডত ব5ািেদের দািয় িনেয় আপনার ধারণা সহHকত এবং আপনার মেত িশS কারখানাMেলেকে িনরাপদ, Yায়ী ও বসবাসেয়াগ5 করেত িক িক করা উচত?

ই-8মহেলর মাধেম আমTনঃ

স5ার/ম5াডাম,

আমার নাম শামফতা মুিনর তP Qা। আমি অেলিলয়ার কাFCন িবদিবদ5ালেয়র িপ.এইচ.ডি িশোখীf । আমার গেবষনার িবষয় “Improving Dhaka’s Liveability through Sustainable Architecture” (ইPuিভং ঢাকা’স িলেভিবিলF ট8 সাসেটইনবল আHকেটকচC ার)। কাFCন িবদিবদ5ালয় িহউম5ান িরসাচ গ্রিথv কিমF (এইচআরইস) এই সমীো অনুেমােনন করেছ (HRE2019-XXXX)। আমার গেবষনায় সহযোগীতার জন5 !IRMেলেেত আপনার মতামত জানােনোর জন5 িবনীত অনুেোধ করিছ। আপনার পরামশC এবং দুখভি় িশS ভবনMিলর িনরাপসা এবং শহেরর সামিVক জীবনধারণ িনিZত করেত সাহায5 করেব। জিরপF পুরেগ মাL ১০ Zথেক ১৫ িমিনট সময় লাগেত পারে।

ধন5বাদ,

শামফতা মুিনর তP Qা

▪ **Consent Form for Survey Participants**

8. I have read/ *had read to me in my first language*, the information statement version listed above and I understand its contents.
9. I believe I understand the purpose, extent and possible risks of my involvement in this project.
10. I voluntarily consent to take part in this research project.
11. I have had an opportunity to ask questions and I am satisfied with the answers I have received.
12. I understand that this project has been approved by Curtin University Human Research Ethics Committee and will be carried out in line with the National Statement on Ethical Conduct in Human Research (2007).
13. I understand I will receive a copy of this Information Statement and Consent Form.

Participant Name	
Participant Signature	
Date	

Declaration by researcher: I have supplied an Information Letter and Consent Form to the participant who has signed above, and believe that they understand the purpose, extent and possible risks of their involvement in this project.

Researcher Name	
Researcher Signature	
Date	

Note: All parties signing the Consent Form must date their own signature.