EARNINGS, HEALTH AND GENDER EMPOWERMENT: A STUDY OF READY-MADE GARMENT WORKERS IN BANGLADESH

SHAMIMA NASRIN

FACULTY OF ECONOMICS AND ADMINISTRATION
UNIVERSITY OF MALAYA
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EARNINGS, HEALTH AND GENDER EMPOWERMENT: A STUDY OF READY-MADE GARMENT WORKERS IN BANGLADESH

ABSTRACT

Well-being is an integral part of human life. Focusing on the Ready Made Garments (RMG) workers in Bangladesh, this thesis presents a profound assessment that aims to unravel the determinants of three aspects of the workers' well-being: earnings, health conditions, and women empowerment. These three aspects are of great importance to the well-being of the workers. Earnings can play an important role in alleviating poverty and enhancing the productivity of the workers by motivating them to work more. Considering the poor health status of low wage workers, it is necessary to find out the determinants of health conditions of the RMG workers. Since 80% of the labour force in the RMG industry constitutes women workers, it is imperative to examine whether employment of the women in this sector has contributed to an increase of empowerment for the women workers. This study employed a structured questionnaire as a primary instrument for data collection. Using face-to-face interviews, 775 interviews were conducted where 560 were females and 215 were males. In the first analytical chapter, the human capital theory and the Mincerian wage function was applied and the results revealed that education and formal on-the-job training were positive and highly significant in all estimations. The results also showed the concavity of labour market experience and earnings. Furthermore, there was a gender earnings gap in the RMG sector. The outcome showed that there was a 64% gap due to the differences in endowments and 36% gap is unexplained. In the second analytical chapter, it was found that the following conversion factors constrained the capability and choice of achieving good health for the RMG workers: high job-related demands, high noise levels, high crowding in the workplace, increased workload, and low level educational attainment. In addition, high job-related rewards and being married had expanded their capability to achieve good health. The outcome also revealed that there

were gender differences in terms of their health conditions. In the third analytical chapter, it was noted that the working experience of women workers in the RMG industry positively contributed to the enhancement of all kinds of empowerment. Watching TV, using mobile phones, and a higher level of educational attainment showed positive and significant associations with all the four kinds of empowerment. Finally, the outcome of this study contributes to the existing literature in several ways. This study, has examined three important components of the RMG workers' well-being, all contained within a single study. As a result of this study, a new understanding of the human capital theory, mainly for low-wage workers, was derived. It appears that using actual experiences instead of potential experiences or age as a proxy, helps to use a better measure than using proxy and supplement the human capital theory. While in general the outcome supports the human capital theory, the evidence of this study showed a lower return to education on the whole, for women more than for men, comparatively. This study was also able to develop a comprehensive framework based on the capability approach and the effort-reward model. This study is the first attempt to consider different dimensions of power and empowerment in a single frame.

Keywords: Earnings, Health, Empowerment, Ready-made garments, Bangladesh.

PENDAPATAN, KESIHATAN DAN PEMERKASAAN JANTINA: KAJIAN PEKERJA PAKAIAN SEDIA SIAP DI BANGLADESH

ABSTRAK

Kesejahteraan adalah aspek penting dalam kehidupan manusia. Tesis ini membentangkan penilaian mendalam untuk menjelaskan determinan tiga aspek kesejahteraan pekerja pakaian sedia siap (PSS): pendapatan, keadaan kesihatan dan permerkasaan wanita. Ketiga-tiga aspek ini memainkan peranan penting terhadap kesejahteraan para pekerja. Pendapatan boleh memainkan peranan penting untuk mengatasi kemiskinan dan meningkatkan produktiviti pekerja. Mengambil kira statuskeadaan kesihatan para pekerja yang buruk dan pendapatan mereka yang rendah, kajian ini bertujuan untuk mencari determinan keadaan kesihatan para pekerja. Memandangkan 80 peratus tenaga buruh terdiri dari para wanita, adalah penting untuk mengetahui samada bekerja dalam sektor ini menyumbang kepada peningkatan status bagi memperkasakan wanita. Kajian ini menggunakan soal selidik berstruktur sebagai instrumen utama untuk mengumpul data. Menggunakan temuduga secara bersemuka, 775 temuduga telah disempurnakan, yang mana 560 daripadanya terdiri dari kaum wanita dan 215 terdiri dari kaum lelaki.Menggunakan 'teori modal insan' dan 'fungsi gaji Mincerian', dalam bab analisa pertama, kajian ini mendedahkan bahawa pendidikan dan latihan dalam pekerjaan secara formal adalah positif dan berperanan penting dalam semua penilaian. Keputusan juga menunjukkan kecekungan pengalaman dan pendapatan pasaran buruh. Selain itu, adalah didapati bahawa terdapat perbezaan pendapatan antara jantina di dalam industri PSS. Keputusan juga menunjukan terdapat 64% jurang perbezaan terhadap perbezaan endowmen dan 36% jurang tidak dapat dijelaskan. Dalam bab kedua, kami mendapati bahawa faktor-faktor penukaran berikut menyekat kebolehan dan pilihan untuk mencapai kesihatan yang memuaskan bagi pekerja industri PSS: permintaan berkaitan kerja yang tinggi, tahap bising yang tinggi, tahap kesesakan di tempat kerja, peningkatan beban

kerja, dan pencapaian pendidikan yang rendah. Kami juga mendapati bahawa ganjaran berkaitan kerja yang tinggi dan berkahwin telah meluaskan kebolehan untuk mencapai tahap kesihatan yang baik. Selain itu, kajian ini juga telah mendedahkan bahawa terdapat perbezaan jantina antara pekerja lelaki dan wanita berkenaan keadaan kesihatan. Dalam bab ketiga, adalah didapati bahawa pengalaman dalam industri PSS telah menyumbang secara positif untuk meningkatkan pemerkasaan bagi pekerja wanita. Menonton TV, menggunakan telefon bimbit dan pencapaian pendidikan yang lebih tinggi menunjukkan kaitan yang positif dan ketara dengan keempat-empat jenis pemerkasaan. Akhir sekali, kajian ini menyumbang terhadap pengetahuan kajian sedia dalam beberapa cara. Kajian ini telah meneliti 3 komponen penting kesejahteraan dalam satu kajian dengan memberi fokus kepada isu para pekerja di industri PSS. Hasil daripada kajian ini telah memberi kefahaman yang baru dalam 'teori modal insan', terutamanya untuk para pekerja bergaji rendah. Kajian ini juga mendapati bahawa, penggunaan pengalaman sebenar berbanding pengalaman potensi atau menggunakan umur sebagai proksi, ia telah membantu mengembangkan teori modal insan. Secara amnya, kajian ini menyokong teori modal insan, bukti-bukti yang didapati telah turut menunjukkan bahawa pulangan yang rendah terhadap pendidikan secara keseluruhannya dan terutamanya wanita berbanding lelaki. Kajian ini membangunkan rangka kerja yang komprehensif berasaskan 'pendekatan keupayaan' dan 'model Usaha-Ganjaran'. Kajian ini adalah percubaan yang buat pertama kalinya untuk mengambil kira pelbagai dimensi kuasa dan keberdayaan dalam satu rangka.

Keywords: Pendapatan, Kesihatan, Pemerkasaan, Pekerja Sedia Siap, Bangladesh**.**

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Research is all about ploughing through an ocean of materials. At times I dissolved into tears, piercing the silence of nights. In those hours of turbulence, I invariably found a soft little hand around my neck to console me. It was my daughter, with a world of sleep in her eyes! It gave me the encouragement to go the extra mile and complete the job. I left my mother back home in the lurch. She invested most of her post-retirement time thinking, worrying and praying for me. I hope this work will bring her that heavenly smile back. My father, strong and smart, never fell short of words to cheer me up in my dull hours. Let me not forget the enormous contribution of my husband. My little sister Dr. Farjana Sharmin and her husband Dr. Sarwar Ahmed Sobhan had shown enormous belief in me, kept encouraging me to carry on the uphill task.

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BBS	:	Bangladesh Bureau of Statistics
BEF	:	Bangladesh Employer's Federation
BCWS	:	Bangladesh Centre for Workers Solidarity
BLUE	:	Best Linear Classical Estimator
BGMEA	:	Bangladesh Garments Manufacturer and Exporters Association
BKMEA	:	Bangladesh Knitwear Manufacturer and Exporters Association
BEPZA	:	Bangladesh Export Processing Zone Authority
BLUE	:	Best Linear Classical Estimator
CA	:	The Capability Approach
CI	:	Confidence Intervals
CPS	:	Current Population Survey
DHS	:	Demography and Health Survey
DIFE	:	Department of Inspection for Factories and Establishments
EPZ	:	Export Processing Zone
EU	:	European Union
EFA	:	Exploratory Factor Analysis
FY	:	Fiscal Year
EPZ	:	Export Processing Zone
ERIM	:	Effort-Reward Imbalance Model
IFLS	:	Indonesian Family Life Survey
FDI	:	Foreign Direct Investment
FTZ	:	Free Trade Zone
GoB	:	Government of Bangladesh
GSP	:	Generalized System of Preference
GTAP	:	Global Trade Analysis Project
GTF	:	Garment, Textile & Footwear
HC	:	Human Capital
HIES	:	Household Income and Expenditure Survey
ILO	:	International Labour Organization
IV	:	Instrumental Variable
IMF	:	International Monetary Fund
KMO	:	Kaiser-Meyer-Olin
LDCs	:	Least Developed Countries

LFS	:	Labour Force Survey
LFMS	:	Labour Force and Migration Survey
MDGs	:	Millennium Development Goals
MOU	:	Memorandum of Understanding
NFHS	:	National Family Health Survey
NTPA	:	National Tripatriate Plan of Action
NTC	:	The Natioanl Tripatriate Committee
OB	:	Oaxaca-Blinder
OECD	:	Organization of Economic Co-operation and Development
OJT	:	On-the-Job Training
OLS	:	Ordinary Least Regression
OPHI	:	Oxford Poverty and Human Development Initiative
PCA	:	Principal Component Analysis
PSID	:	Panel Study of Income Dynamics
RMG	:	Ready-made Garments
ROO	:	Rules of Origin
RR	:	Robust Regression
SAP	:	Structural Adjustment Policy
SDGs	:	Sustainable Development Goals
SDH	:	Social Determinants of Health
SAE	:	Social Activities of Environment
TS	:	Tolerance Statistics
T&G	:	Textile and Garments
T&C	:	Textile and Clothing
UNDP	:	United Nations Development Programme
UNICEF	:	United Nations Children Fund
VIF	:	Variation Inflation Factor
WB	:	World Bank
WPC	:	Worker Participation Committee
WRHS	:	Women's Reproductive Histories Survey
WTO	:	World Trade Organization

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CHAPTER 1: INTRODUCTION

1.1 Introduction

Industrial development is a prerequisite when a country desires to move from being a low income to a middle-income country. As a country, Bangladesh had promulgated several industrial policies to invigorate the industrial development of the country. It began from the Industrial Policy of 1972, after the liberation war in 1971. Then it moved on to the New Industrial Policy of 1982 followed by the Revised Industrial Policy of 1986 during the military regime, to the recent Industrial Policy of 1999. The main objective of these policies was to strengthen the manufacturing sector of the country. The Ready-made Garment (RMG) industry of Bangladesh, for example, is one that acquired the momentum, following the policy alignment of the Bangladeshi government to boost the export sector of the country.

Bangladesh has gone through a series of economic reforms, under the Structural Adjustment Programme (SAP) prescribed by the International Monetary Fund (IMF) and the World Bank (WB). In line with the SAP, the country announced the New Industrial Policy of 1982 in which export promotion was the main strategy. It was to be led by the private sectors (Quddus & Rashid, 2000). This transformation of Bangladesh's economy gave importance to the export-oriented sector. It served as the reason as to why Bangladesh's RMG have become the leading export sector of the country. As a result of the emergence of this sector, women in large numbers were able to find employment. While a large number of studies (Attanapola, 2005; Ahmed & Raihan, 2014; Health, 2014; Islam, Sultana & Ferdous, 2014; Kabeer, 1997; Paul-Majumder, 2003; Steinisch et al., 2013) have discussed the working conditions, low wages, health risks, and empowerment, very few of these studies (Kabeer, 1997; Paul-Majumder, 2003; Steinisch et al., 2013) have addressed the impact of this employment on the women workers from

a number of perspectives such as the workers' well-being in general, their determinants of earnings, their health status and their empowerment on becoming wage earners. Although the RMG industry has undertaken a number of reforms to improve the wages and the working conditions of the workers, evidence regarding the determinants of their earnings, health and empowerment, are still inadequate.

Therefore, this thesis seeks to find out the determinants/correlates of earnings, health status, and empowerment of RMG workers. As women are the main workforce of the RMG industry, the study will consider only the women workers in order to find out the determinants/correlates of women empowerment.

This chapter is made up of nine sections. The next section discusses the importance of the RMG industry in Bangladesh and the well-being issues of its workers. The third section problematises the issue. The fourth section explains the motivation that triggered this study. The fifth section identifies the research questions and research objectives. The sixth section briefly outlines the research methodology and data used for the study. The seventh section focuses on the significance of the study and the eighth section discusses the key concepts used in this study. The final section presents the thesis outline.

1.2 Background of Study

Global environment of denationalisation and economic restructuring of the 1970s and 1980s are the main reasons driving the growth of the garments industry in developing countries such as Bangladesh. Here, the government denationalises the textile industries and places them under private ownerships which then contribute to the country's gradual expansion of the industry. Following the World Trade Organisation's (WTO) agreement on Clothing and Textile of Least Developed Countries (LDCs) which provided quota-free access to western markets, the garments' industry expanded in geometrical order. Bangladesh as a LDC, during that period, acquired this advantage which allowed it to

further develop the garments' industry, supported by the accessibility of cheap labour force constitutes of women workers.

In general, Bangladesh is a LDC which acquired its independence in 1971. During that time, export earnings from the RMG was not visible at all. Jute appeared as the main export item of the country until the 1980s. Since the mid-1970's, the jute sector was fast being overtaken by the growing RMG sector. By the 1980's, the RMG industry became the dominant sector of export for the country (Bhattacharya & Rahman, 1999). From that period onwards, the RMG industry of the country began producing garment products for export to many western countries. After the export promotion strategy was adopted by the LDCs and other developing countries, the Export Processing Zones (EPZs) began to emerge rapidly within these countries. However, it took Bangladesh almost a decade to adopt the policy. During that initial period, only seven percent of Bangladesh's garment factories were located in the EPZs Dhaka and Chittagong (Paul-Majumder & Begum, 2000).

Nonetheless, after the advent of the RMG industry, the export basket of Bangladesh increased rapidly. For example, in 1976, the contribution was 0.001 per cent and in 2012 the RMG industry accounted for 78 percent of the country's total export earnings. The RMG industry of Bangladesh has a total of 3.6 million workers in 2010, of which 2.88 million (80 percent) are women (Bangladesh Bureau of Statistics, 2013c). According to Bajaj (2010), among the 70 million working population of Bangladesh, the RMG industry generated a big scale of employment, becoming the leading employment generating sector among the manufacturing sectors of the country.

Bangladesh was ranked as the second highest RMG exporting country in 2010. The country had four million workers between 2014-2015 (Bangladesh Garments Manufacturers and Exporters Association, 2016). As mentioned, women accounted for

80 percent of the workforce in this sector; this is a uniquely high percentage within the global context (Islam & Zahid, 2012).

As a fundamental part of life, one's well-being is an important aspect to give focus to. Nonetheless, the definition of 'well-being' has not been clearly defined so much so that there is a lack of consensus on the definition of well-being (Slee & Skrzypiec, 2016). Researchers tend to use different domains of well-being to evaluate the concept, hence, the well-being domain is often used as a reference to a specific area of influence (Slee & Skrzypiec, 2016). However, the OECD (2011) defines well-being as "in addition to economic resources, other aspects such as health, education, jobs, environmental quality, civic engagement, governance, security, free time are all fundamental to our quality of life, as are people's subjective experiences of life – including, for example, their feelings and emotions, and their satisfaction with life as a whole" (p. 39). Following this, Browne (2015) also identified some factors that can contribute to the definition of well-being and this includes being economically secure, being respected or worthy of respect, health, education and a voice at home, in the community, and beyond that. Despite these factors being important, they cannot be easily examined within a single study. Keeping this in view, the current study explores three specific aspects of the RMG workers' well-being in Bangladesh. Three dimensions and definitions which are applicable and important for the subject of the research i.e. RMG workers, were adapted. The importance of each aspect of the lives of the RMG workers, is further discussed in the next section.

The well-being issues of workers remain a severe challenge to developing countries as well as the LDCs. Taking Bangladesh as an example of the LDCs, it cannot be denied that despite the fact that the RMG industry has generated enormous employment opportunities for rural migrant women, the well-being aspects of these workers remain to be a serious social problem for many, in Bangladesh as well as other countries, regardless

of their development status. In Bangladesh, it is anticipated that its RMG industry will increase four-folds in the next 20 years (Asadullah & Wahhaj, 2016). Hence, a large number of workers will be entering the industry to meet the demands of these growing number of factories. It will also pose a serious challenge to the RMG industry if the well-being of the women workers are not addressed with care vigorously.

The RMG industry is a sector which has been criticised severely for its poor wages and working conditions. The situation is more severe in Bangladesh where the wages are the lowest in the world. The issue of improving working conditions for these workers was brought into light after two severe industrial disasters that occurred in 2012 and 2013. For example: the industrial disaster in 2013 was considered as one of the worst disasters when 1,134 workers lost their lives due to a collapse of a garment factory (Muhammad, 2011). In 2012, 112 workers died from a factory fire (International Labour Organization, 2016). These two incidents clearly exposed the precarious employment practices in Bangladesh's RMG industry (Souplet-Wilson, 2014). In addition to this, the working hours in the RMG industry is also longer than other manufacturing sectors (Kabeer & Mahmud, 2004) and this, in the mind of more aware parties, impinge the well-being of such workers.

It was documented in the literature (Cowgill & Huynh, 2016; Kabeer & Mahmud, 2004b) that employers in the RMG industry often hire workers with little or no education. These workers were also provided with little or no on-the-job training (OJT) and often, they were employed without any job contracts (Kabeer, 2004), hence no job security. The absence of these facilities already suggest that the workers were being taken advantage of but the lack of a minimum safety at the workplace and irregular and meagre pay have been viewed seriously by certain parties who note that these need to be revised, especially the outcome that is associated with minimum wage and improving working conditions.

After the two industrial disasters, work situation in the RMG industry seemed to improve as more social compliance practices were introduced with the purview of the Ministry of Labour and Employment, Government of Bangladesh (GoB) and the International Labour Organisation (ILO). However, the implementation of minimum wage law is still questionable (Asadullah & Wahhaj, 2016). Nonetheless, both continue to be a challenge for the government. The process of revising wages to the minimum wage on a regular basis in Bangladesh was not practiced for a long time. For example, the government had raised the minimum wage of the RMG industry four times in the last 20 years (in 1994, 2006, 2010 and 2013) but this was not done on a regular basis to address market value. Instead, they were revised due to the ferocious demands of the workers who had worked labouriously with no rest, and this consequently sparked a huge public protest (Asadullah & Wahhaj, 2016). It appears that any systematic wage increase for lowly paid workers had not been consistent while the determining factors for wage/earnings among workers had been typically unknown. There has been some considerable work documenting the well-being concerns (Loscocco & Spitze, 1990; Dababneh, Swanson & Shell, 2001) of manufacturing workers but these studies have not focused on the RMG workers in particular.

1.3 Statement of Problem

After embracing the principles of globalisation, the RMG industry has become an identity of Bangladesh since its inception in the 1980s. As mentioned earlier, the RMG industry has been criticised for its severely low wages and poor working conditions. These factors fuel the growing demand for improved wages and working conditions and so, better wages and working conditions continue to be the two critical issues that play an important role in enhancing the well-being of the RMG workers.

There is a long-standing ambiguity regarding factors that determine the earnings of low-wage workers. The stagnant earnings and the unhealthy working conditions had created dissatisfaction among the workers and can eventually, decrease the productivity of the workers. A number of studies (Coleman, 1998; Constantine & Neumark, 1996; Oliver, 2016; K. L. Sørensen & Vejlin, 2014) have documented the relationship between earnings, education and potential experience in the context of developed countries, developing countries and specifically, LDCs (Baffour, 2013; Nasir & Nazli, 2010; Peet, Fink, & Fawzi, 2015). However, few studies have focused on the earnings' determinants of low-wage workers. This element carries importance as earnings' determinants may vary for different income groups. In particular, wage or earnings determinants of low-skilled workers remain a challenge among developing countries and LDCs. Although the minimum wage law was promulgated across countries, the process of determining a minimum wage, particularly in the context of developing and LDCs, remains a serious concern for researchers and policy makers. Wage employment is the main source of earnings for low skilled and lowly paid workers. Literature puts emphasis on earnings/wages as an important element of well-being as it directly affects the material living conditions (Joerg, Marco, Auke, & Marcel, 2014). Given the importance of earnings for the individual workers, it would seem that not knowing what determines the earnings of the individuals and households, would be detrimental to the respective families because these workers cannot decide in which area they should focus on so as to improve their potentials in human capital investment. Furthermore, rational decisions cannot be taken to invest in the human resource of a country or a sector or even at the individual level, without knowing the area in which the investment should be made. After the advent of the RMG industry, the urban labour market flourished in the 1990s but the workers' qualifications remained limited. As a result, the RMG industry offered lowly qualified workers the opportunity to raise their human capital by providing formal or

informal on the-job training (OJT) through on hand experiences. Despite these measures, majority of the RMG workers possess low level education attainments and so the dropout rate from the labour market remains high. Nevertheless, it is still not evident as to how their level of education and experience can contribute to enhancing their earnings. According to Ahmed & Maitra (2010), the average earnings of women are much lesser than men even though they do similar work. The earnings gap, however, varies from region to region, but in North America and Europe, women earn 63 percent and 57 percent of men's income respectively. In South Asia and Sub-Sahara Africa, the earnings of women are only around 50 percent of men's income (Ahmed & Maitra, 2010). Literature has acknowledged that there is a gender earnings gap in the RMG industry (Paul-Majumder & Begum, 2000), but only a few studies (Huynh, 2016) have ventured into the extent of women's earnings to see whether there is a gender based discrimination existing in the RMG sector.

Another facet of workers' well-being is their health. It is a well-established fact that healthy workers are more productive and efficient than unhealthy workers. A number of recent studies (Giatti, Barreto, & César, 2010; Khan & Flynn, 2015; Reine, Novo, & Hammarström, 2013) found that there was a relationship between unemployment and poor health outcomes. Some studies (Brenner & Mooney, 1983; Dooley, Fielding, & Levi, 1996; Janlert, 1997) had even revealed that there was a strong relationship between unemployment and mortality, weakening health, constrained lifestyles and psychological problems. Manufacturing workers are frequently exposed to physical hazards that might have adverse effects on their health although at the same time, the work opportunity gave those workers access to health services. According to Karasek and Theorell (1990), poorly educated and low-skilled workers are extremely vulnerable to poor health. Previous studies (De Silva, Lombardo, Lipscomb, Grad, & Østbye, 2013 and Gupta et al,

2015) have identified various health problems among industrial workers in general and among garment industry workers in particular.

As a result of such high physical demands particularly in the manufacturing industry, blue-collar workers tend to experience more health-related problems than white-collar workers (Lahelma et al., 2012). Consequently, the dropout rate of the blue-collar workers in the labour market becomes higher than that of white-collar workers (Hannerz, Tüchsen, Spangenberg, & Albertsen, 2004). Given the consequences led by poor health conditions as experienced by low wage workers, it is important to uncover what factors can affect the health status/conditions of these workers.

The most distinctive part of the RMG industry is its labour force which comprises a huge level of women workers. There is a persistent argument involving the relationship between paid work and women's position within the family and society (Kabeer, Mahmud & Tasneem, 2011; West, 2006). Liberal and Marxist scholars, including feminists of both schools of thought have argued that women's integration into the market is the key to their empowerment (Kabeer et al., 2011). Others offer more dubious and often, more negative accounts of this relationship. Gender equality and women empowerment is a necessary component to improve the well-being of both men and women so as to facilitate social justice and to achieve development goals (West, 2006). According to the United Nations Development Program (2016), women empowerment and gender equality are the pathways to achieve the Millennium Development Goals (MDGs). This too has been incorporated as one of the goals of the country's Sustainable Development Goals (SDGs) which emphasises on increasing opportunities' and access for women to gain better jobs. Increasing the empowerment level of women workers can also bear some societal values because in developing countries and the LDCs, the RMG industry is the only one that generates a huge volume of employment for poor and destitute women. Through

empowering them with employment opportunities, they can be further enhanced into contributing to the development of the country as a whole. No doubt, only having a wage employment is not good enough to increase women's empowerment. This is because working outside their homes does not necessarily allow the women to challenge the power structure that prevents their agency and full participation in society (Kabeer, 1997; Pearson, 2004; Sen, 1999). Hence, it is important to see whether being employed in the RMG industry in Bangladesh has contributed to increasing the empowerment status of the women workers. Moreover, the controversy on the association between employment and empowerment also carried a significance; it has been noted that participation in a wage employment may not necessarily translate into empowerment. Rather, it means having control over their resources and this plays a significant role in their lives. This debate is particularly important for the discussion of the links between employment and empowerment because the standard argument is that it is not enough to work and earn a wage (Blumberg, 2005; Kabeer, 1997). A woman may work, but if she has no say in how resources are managed or allocated in the household, she is unlikely to gain any control or power in the household.

Given the importance of the RMG industry in generating employment opportunities for the low educated and low skill workers, its contribution in boosting the economy of Bangladesh plus its unique labour force, where a vast majority of workers are women, is important as a means of finding out what determines their earnings, health and empowerment so that proper policy measures can be taken to improve these specific aspects of the well-being of the RMG women workers.

1.4 Motivation of Study

The expansion of the export-oriented manufacturing garments sector in Bangladesh represents the phenomenon of the massive expansion of low manufacturing jobs in developing countries, in the last fifty years (Mammen & Paxson, 2000). Existing literature

has hardly presented any systematic analysis of the well-being aspects of the RMG workers since the 1980s, particularly after the expansion of the RMG industry in developing countries. In spite of being the second largest producer of readymade garments, the RMG industry has also made many contribution towards poverty reduction through employment generation although the well-being aspects of its workers have been ignored by researchers and policy makers in Bangladesh.

RMG industry is the largest employment-generating manufacturing industry in the LDCs. It is able to generate 55 percent of the manufacturing employment in Bangladesh in 2012 (Bangladesh Bureau of Statistics, 2014), while it generated 8.5 percent of all the employment for Cambodia in 2012 (National Institute of Statistics, 2012). It also largely contributes to poverty alleviation as a result of the overwhelming expansion of job opportunities. It has been acknowledged that most of the workers of the garment industry are low-skilled and not highly educated (Bauer & Thant, 2010) and this might be the reason why RMG workers are receiving low wages and suffering wage stagnation in this sector. To initiate relevant policies, measures have to be taken to improve the human capital and the earnings of poor workers. Hence, findings from this study will provide empirical evidence which show the earning determinants of low-wage workers in general and the garment industry in particular.

Expanding on the same issue, it appears that social arrangements of Bangladesh often exclude women participation in the economic, cultural and political domain. The RMG industry has proven to be an important source for a large volume of women employment in Bangladesh but it has also been severely criticised for the poor working conditions, low wages, long working hours which amount to the exploitation of workers (Kabeer, 2004; Karim, 2014). Some researchers (Chowdhury, Ali, & Rahman, 2006) termed the RMG industry as a 'sweat shop' which indicates the exploitative nature of this kind of

industry. However, in the case of Bangladesh and other LDCs and developing countries, it is an obvious fact that a large number of women employment in the RMG sector signifies a social revolution for these countries (Chowdhury et al., 2006). Nonetheless, the well-being of workers of Bangladesh's RMG industry had been ignored by the international as well as local media until the collapse of the Rana Plaza, an eight storied building which killed 1,100 people (Manik & Yardley, 2013). Subsequent to this incident, international buyers began boycotting garment products from Bangladesh. This caused the country to submit to international pressure so as to improve the working conditions and to raise the wages of the workers.

'Earnings' is an important component of well-being (Joerg et al., 2014). An increase in earnings is one of the most desirable thing for the individual worker. The OECD (2013) recognised that earnings is also an important component of the material well-being. Although the development literature rejects the hypothesis that an increase in income is the central indicator of an individual's well-being, it appears that the monetary issue is fundamental for people who do not have access to any other resources. Moving back to the RMG workers, it is apparent that many of them are lowly educated and have low skills, thus to provide for themselves, they are somewhat forced to migrate to urban areas (Kabeer, 2004) when the rural areas where they live are poor. Hence their priority in moving to cities or more densely populated areas is to earn money for their livelihood. The RMG industry provides them with the opportunity to be engaged in wage employment but this is at the expense of low wages and poor working conditions. According to a report by Stanley (2014), looked at the sustainability of the RMG industry and its impact on retailers, it was observed that on average, the employee turnover rate is around 10 percent per month which is quite high in relation to other manufacturing industry. It is to be noted that even the post-festive turnovers (such as Eid which is one of the important festivals in Bangladesh), the turnover can even be more than 30 percent.

Providing additional benefits to the employees based on their performance and qualification can be a critical means to retain such workers. Therefore, investing in the welfare of the employees can bring a positive change towards the sustainability of the sector. In this context, it is crucial to uncover what investments can be made to improve the well-being of the RMG workers. This question inadvertently triggered the motivation to conduct this study.

Several studies focusing on the gender wage gap in the RMG industry either presented a glimpse of the monthly wages of male and female workers (Paul-Majumder & Begum, 2000) or included the textile industry workers in their analysis (Abras, 2012; El-Haddad, 2011), except by (Huynh, 2016). Based on that, it was concluded that there was a gender earnings gap (Paul-Majumder & Begum, 2000) in the RMG industry, but we found only one study by (Huynh, 2016) that has specifically looked into the matters empirically by examining the extent of gender earnings gap in the RMG industry. This is particularly important because it is the only sector in developing countries and LDCs that generate unprecedented employment opportunities for women.

A number of studies (Paul-Majumder & Begum, 2000) have emerged to evaluate the working conditions of the RMG workers from the perspective of gender by assessing the corporate social responsibility of certain organisations (Azmat, 2015). These studies examined the health conditions of the workers (Paul-Majumder, 1996, 2003; Steinisch et al., 2013) of the workers. While some of the studies related to the RMG industry in Bangladesh were quantitatively performed, some were also based on qualitative research. The main contribution of these studies provide an account of the several health related problems as suffered by RMG workers (Ahmed & Raihan, 2014) and one study had examined the effects of psychosocial working conditions on health outcomes (Steinisch et al., 2013) and another study investigated the socio-economic conditions and health

status of RMG workers in Bangladesh (Paul-Majumder, 1996). The consideration to be employed is an important thought for women in terms of women empowerment. Consequently, this study will examine the correlates of women empowerment of married RMG women workers. As a consequence of the unavailability of the data set, no study had looked into the mentioned three aspects of the RMG workers' well-being thus, these aspects will be addressed in this study.

1.5 Research Questions and Objectives

The main objective of this thesis is to investigate three specific aspects of the RMG industry workers' well-being. To answer the research objectives the following research questions are framed:

Research Question 1: How do human capital and other employment related variables affect the earnings of the RMG workers in Bangladesh?

a. Is there any gender earnings gap in the RMG industry?
b. How large is the gender earnings gap and how much of it is explained by differences in endowments?

Research Question 2: How do the environmental, individual and social conversion factors affect the health conditions of the RMG workers? Is there any gender difference in the health conditions of the RMG workers?

Research Question 3: How does employment in the RMG industry affect the empowerment of women workers?

The above research questions are formulated with the following specific corresponding objectives of the thesis:

Objective 1: To find out the determinants of earnings of the RMG workers;

Objective 1.1: To estimate the mean gender gap in the earnings of the RMG workers;

Objective 1.2: To estimate the gaps that exists due to differences in their endowments;

Objective 2: To investigate the factors affecting the poor health conditions of the RMG workers;

Objective 3: To find out the determinants/correlates of empowerment of the RMG women workers.

1.6 Research Methodology and Data

The study employed mainly quantitative research approach. It used a structured questionnaire as a primary instrument to collect primary data. Based on the nature of dependent variables, different statistical analytical methods such as Ordinary Least Square (OLS), Oaxaca-Blinder (O-B) Decomposition Method, Logistic Regression, Probit Model, Robust Regression and Ordinal Logit Model were deployed.

The study used primary dataset which were gathered through a quantitative approach. To achieve the objectives of this study, face-to-face interviews using a structured questionnaire were conducted. The field work was conducted between May, 2015 to November, 2015. Among nine districts of Bangladesh where the RMG factories are situated, the districts of Dhaka and Narayanganj were specifically selected. From the Dhaka district, a total of 400 valid responses from 42 factories were collected and from the Narayanganj district, a total of 375 valid responses from 35 factories were collected. In total, as many as 775 interviews were completed. Among these, 560 were female respondents and 215 were male workers.

A detailed discussion of the research methodology, research procedure, data collection process including sampling frame is provided in Chapter 3.

1.7 Significance of Study

There is a dearth in literature which has given consideration to examining the three important components of the RMG workers' well-being within a single study. Understanding the factors that can contribute to enhancing their earnings, health status and empowerment is of great importance because this can initiate proper policy measures that can improve the well-being of the workers. Since the well-being of the worker when improved, not only benefits the individual worker but also his/her family, it cannot be denied that the well-being of the RMG workers can help to improve work efficiency and productivity of the workers as well as the industry, as a whole.

The outcome noted in this thesis will provide readers with a new understanding about the implications of the human capital theory, for low-waged workers. Methodologically, using actual experiences rather than potential experiences, or age as a proxy, can contribute to extending the human capital theory. It further provides the empirical findings that highlight gender differences in earnings in the RMG sector.

This study uses a comprehensive framework which is based on the capability approach of Sen (2001) and Robeyns (2005) where health conditions of the RMG workers are viewed as functioning. Moreover, the questionnaire used is based on the Effort-Reward model that was developed by (Siegrist et al., 2004) as seen in the capability framework. Based on the suggested framework, the study will henceforth, provides the empirical evidence showing the association between conversion factors and health functioning. This study will be able to provide empirical evidence to suggest the usefulness of the developed framework. It tries to marry the capability approach with the effort-reward model.

To the best of the researcher's knowledge, this study is the first to attempt looking at the different dimensions of power and empowerment, based on the definition of agency Sen

(1985) and typology of (Rowlands, 1995) in a single frame. It investigates the effects of the employment of the RMG workers on women empowerment as well as other determining factors based on the literature. Theoretically, it provides empirical evidence to demonstrate whether or not the drivers of empowerment are the same or varies, based on the dimensions of empowerment (i.e. empowerment as a choice, empowerment as control, empowerment in the community and empowerment as change or individual empowerment). Methodologically, working experience was used as a proxy of employment in the RMG industry and the use of the mobile phone which are new in women empowerment literature.

Last but not least, the current study focuses on a particular group of manufacturing workers so as to examine the country's RMG industry because it makes a huge contribution to the national economy of the country. Criticisms also persist regarding the inadequacy of providing welfare to the workers but with Bangladesh serving as the second largest RMG exporting country in the world, it is imperative to examine the well-being of the RMG workers in isolation.

Finally, the unique dataset offered by this study will provide us all with the opportunity to explore the above-mentioned issues which are not available otherwise.

1.8 Key Concepts

The complexities of the universal definition of well-being has already been discussed in the earlier section. This section presents the definition of the key concepts.

Human Capital

This study uses the definition of Human Capital (HC) as illustrated by Becker (Becker, 1964, 2009). As a concept, human capital can increase the productivity of the workers and also their stock of knowledge and skills are directly, part of the production function.

According to Becker (1964), the HC are of two categories: general and specific. It is recognised that the arguments which distinguished the different kinds of human capital can be categorised into general, task-specific and firm specific (Gibbons & Waldman, 2004). General HC refers to "generic knowledge and skills, not specific to a task or a company; it is usually accumulated through working experience and education" (Kai Ming Au, Altman, & Roussel, 2008, p. 20). In contrast, task/firm specific HC is gained through education, training and work experience (Kai Ming Au et al., 2008). While general HC is transferrable to other industries or sectors, the specific one is barely transferrable to other sectors (Becker, 1964). Thus, both general and specific HC are deployed to examine their effects on the earnings of the RMG workers.

Gender Earnings/Wage Discrimination

According to Becker (2010) discrimination refers to the differences that occur between an individual's contribution to the output and his/her wages. Since the pioneer work of Becker (2010) and Mincer (1974), the HC is the basis to compare the wage differentials between males and females. In particular, a portion of the wage differentials is calculated against the HC in which one is explained by the human capital variables and another portion is unexplained.

Health

Health comprises physical and mental health. Here, only the general health status that is commonly attributed by the physical health problem is considered. Health absenteeism refers to the worker's non-attendance due to health related problems and which is not dependent upon certification. This is a work incapacity related to injury or illness (Australasian Faculty of Occupational Medicine, 1999). This means that when workers are in poor health conditions, they are absent from work without any prior notice.

Capability and Functioning

Capability refers to the various combinations of functions (being and doing) that a person can achieve (Sen, 1992). Therefore, it is a set of vectors of functioning, reflecting the person's freedom to lead one type of life or another. These two concepts are related but are also distinct. According to Sen (1987), "a functioning is an achievement, whereas a capability is the ability to achieve. Functionings are, in a sense, more directly related to living conditions, since they are different aspects of living conditions. Capabilities, in contrast, are notions of freedom, in the positive sense, for example, what real opportunities a worker might have with regards to the life he/she may lead" (p. 36). Thus, a person's capability to achieve functioning is very crucial in this regard. The conversion factors of Robeyns (2003) which play a role in the conversion from characteristics of the good to the individual functioning is also recgonised.

Agency

Agency means 'enhancing's people's freedom to act and to achieve what they consider valuable' (Sen, 1985, p.236).

Empowerment

In the literature, the term agency, autonomy, self-direction, self-determination, liberation participation were often used synonymously (Narayan, 2005). Based on the socio-economic context, empowerment encompasses a wide variety of definitions (Malhotra & Schuler, 2005). The definition of empowerment used in this study is thus defined as a process that expands women agency (Ibrahim & Alkire, 2007; Malhotra & Schuler, 2005). In other words, it is the increased ability to make choices about their lives and environment (Malhotra & Schuler, 2005). This study also recognises Rowlands (1997) definition of empowerment which is associated with more than just participation in decision-making; it also considers the processes that led people to perceive themselves as

able and entitled to make decisions. Kabeer (2001) definition was also considered while making the analytical framework. Kabeer (2001) defines empowerment as the expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them.

1.9 Outline of the thesis

This thesis is organised into 7 chapters. Chapter 1 presents the background, motivation of the study, research objectives and research questions. It also provides the significance of the study followed by the definitions of specific concepts used in this study. Chapter 2 provides an overview of the RMG industry with a focus on the evolution of the garment industry in developing countries and in Bangladesh. Chapter 3 illustrates the general research framework, the review of theories used for the analysis of data and the procedure used for data collection. Chapter 4 investigates how the human capital and other labour market variables affect the earnings of the RMG workers. This takes earnings as the dependent variable. Chapter 5 explores how the working conditions (psychosocial and physical) and other conversion factors affect the health conditions of the RMG workers. Here, the health status were captured based on their absenteeism due to illness during the last one year. Chapter 5 used in this study; they include psychosocial and physical working conditions (environmental conversion factors) and individual as well as social conversion factors as explanatory variables. Using samples of married women who were also serving as RMG workers, Chapter 6 examines how employment in the RMG industry (work experiences as a proxy) and earnings in comparison with husbands, affect the different dimensions of empowerment. In this chapter, empowerment is defined as an expansion of agency and used as the dependent variable. Other explanatory variables including watching television, using of mobile phones, educational attainment, age, types of family, educational attainment of husbands and years of marriage were also considered. Chapter 7 concludes with a synthesis of the findings followed by implications for theory

and policy. In doing so, it also discusses the scientific contributions of this thesis to the body of knowledge. The limitations and recommendations for future studies are also included.

CHAPTER 2: AN OVERVIEW OF THE READY-MADE GARMENT INDUSTRY IN BANGLADESH

2.1 Introduction

The labour intensive Ready-Made Garments (RMG) industry, throughout developing countries and LDCs, had generated employment and alleviated poverty for the overall population of developing countries and LDCs such as Bangladesh. In the past few years, this industry has been the major contributor of the economy in many developing countries and LDCs in Asia. While developed countries may have such RMG industries within their ambit, these countries tend to shift their base from their own country to developing countries so as to reduce high production costs that are incurred at home. By shifting their base to developing countries or LDCs, manufacturers of the RMG products from developed countries are able to benefit more in terms of profits. This has been the practice until a few decades ago. By the 1960s, developed countries like the United States of America (USA), the United Kingdom (UK), Canada, and France had resorted to another practice; they would subcontract the cutting and stitching operations of their garment productions to smaller factories. This strategy enhanced the manufacturers' profits because smaller factories involved lower production costs as a result of the accessible cheap labour. Following this, the large manufacturing firms would then do the merchandising part. However, with the rise of industrial wages, the retailers of these countries have begun to shift their production bases to developing countries which offered lower wages. The evolution of the garment manufacturing business in the developing countries is further expounded in the next section.

2.2 RMG Industry and Low-Income Countries - A Historical Perspective

After World War II, garment exports from developing countries increased gradually. The first to appear on the scene were the East Asian countries that had flourished in the 1970s and 1980s. This is followed by the Southeast Asian countries and Latin American countries in the 1980s. Finally, China came into the scene from the 1990s onwards. In the late 1990s, exports from low-income countries increased steadily, eventually turning them into top exporters in the new millennium of the 2000s. The number of low-income countries also increased gradually from the 1980s. By 2008, six countries were ranked top exporters: Bangladesh, India, Vietnam, Indonesia, Cambodia and Pakistan. Although the share of the low-income countries was less than one percent in 1970, the figure increased rapidly during the 1990s and 2000s until it finally reached 27.0 per cent in 2008 (Yunus & Yamagata, 2014). The Garment and Apparel industry is one of the crucial labour intensive industries that can trigger industrialisation in the countries concerned. It was documented that industrial development is vital for poverty reduction in developing countries and LDCs. In this regard, the importance of the development of export-oriented labour intensive industries, became enormous, both for absorbing the surplus labour of developing countries and the LDCs (Mottaleb & Sonobe, 2011; Nam, Sonobe, & Otsuka, 2010; Sonobe & Otsuka, 2016) as well as for the acquisition of advanced skills and technological know-hows which involved countries need to learn from developed economies (Schmitz & Knorringa, 2000). Historically, labour intensive textile industries were the main sector that contributed to the Industrial Revolution of the UK. Among the Asian countries, Japan was the pioneer that had gained an advantage from its labour exploitation in the textile industry which had also supported its industrialisation. Following the industrialisation process of Japan, East Asian countries such as mainland China (Hong Kong), Taiwan and South Korea also began adopting the policy of labour-intensive industrialisation through the textile industry. This occurred during post - World

War II (Amsden, 1992). These countries were able to achieve economic growth and reduced poverty at the same time (Oshima, 1987) and a part of this development was contributed by the labour-intensive industrialisations that had provided employment opportunities to the low-skilled workers. According to Fukunishi (2009), garment industries in Bangladesh and Cambodia dominate the manufacturing sectors of the countries in terms of export and employment generation. The garment industries in such countries had been playing a vital role in poverty reduction and thereby promoting the country's economic growth. Figure 2.1 shows the employment generation and the composition of the work force in Bangladesh between 2001-2014. From the figure, it seems clear that the percentage of the women workforce had also increased over the years. By 2013-2014, the percentage had grown to become 80 per cent.

Interestingly, it was found that in some countries, the business environment plays a minimal role in the growth of the garment industry. For example, Bangladesh and Cambodia have been ranked in the lowest 25 per cent among other countries in the world in 2012 in good governance ranking (World Bank Institute, 2012). However, they showed some areas of excellence including efficient customs clearance. Nonetheless, they still need to improve the quality of their business environment if they want to flourish in the business.

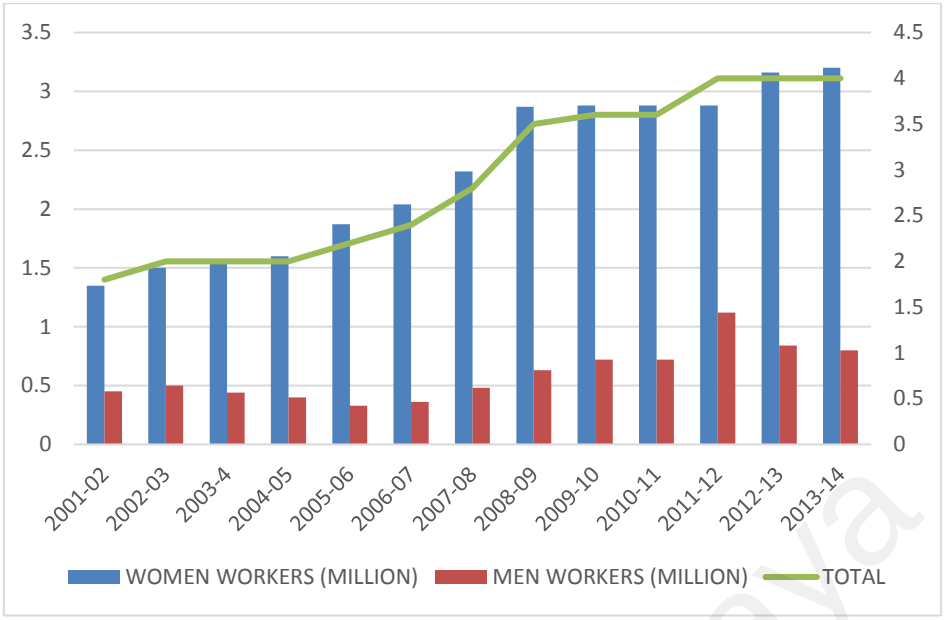

Figure 2.1: Employment in RMG Industry by gender 2001-2014

Source: BGMEA (2016b)

2.3 Evolution of Garments/RMG Industry in Bangladesh

Cheap labour is one of the favourable conditions which had helped the RMG industry to grow rapidly in Bangladesh. It is well documented (Afsar, 2003; Kabeer, 2002) that mostly poor and destitute women would join the industry. This can be traced to the few options of livelihood and the economic distress existing in the rural areas of Bangladesh. As a result, women from the rural areas were forced to migrate to the urban areas in search of wage employment (Mohiuddin, 2004).

Traditionally, Bangladesh is an agrarian country. However, due to the consequence of capitalisation, mechanisation of agriculture (Griffin & Ghose, 1979), natural disaster in the coastal areas (Mallick & Vogt, 2014), and substantial use of land for non-agricultural activities (Bhaduri, Rahman, & Arn, 1986), the demand for agro-workers began to decline over the years. These factors increased unemployment and displaced the farmers who were the breadwinners of the family and they had to roam the cities for some kind of wage employment. As the male breadwinners migrated to cities from the rural areas, the burden of work on their female counterparts increased, both in the households and in the farms

(Mohiuddin, 2004). This can be traced to the patriarchal system and the purdah practice (Khosla, 2009) of Bangladesh which tends to prohibit the women folks from getting involved in any income generating activities in the rural areas (Kabeer, 2002). Purdah is a kind of rule that restricts women to interact with the opposite sex (Amin et al, 1998). Consequently, women are given the responsibilities of domestic matters, while men are delegated to perform the responsibilities of outside domestic matters. In fact, men are considered as the breadwinners of the family. As a result, education of girls and women are neglected in the society as they do not need to earn for the family income. In most cases, poor families do not want to invest on girls' education rather they prefer to get them married. On the one hand, it is evident that there is a lack of employment oppurtunities for women in Bangladesh and on the other hand their lack of educational attainment also restricts them from finding salaried jobs. After the adevent of the garments industry, women could find a job easily as it does not require high level of education and as this industry is largely dominated by female workers, it was easier for women to get a wage employment. According to Khosla (2009),"Women's relative lack of marketable skills and education makes garment work highly attractive to them" (p. 292). In addition, increasing demand for dowry also pushed women to get employed in RMG industry (Amin et. Al, 1998; Kibria, 1998). Hence, both pull and push factors were acting as stimulators behind women entering as employees in the RMG industry and purdah practice gradually lost its restrictiveness over the years. Moreover, in recent years the involvement of government and NGOs regading girls education has brought positive changes in the social spheres such as involvement in the micro-credit activities and reduction in fertility rate (Bates, Schuler, Islam and Islam, 2006). Khosla (2009) pointed out that it is likely that the women of Bangladesh now enjoy more agency than what it is reported in the literature. Hence, along with the pull and push factors, greater awareness of women and more agency have strengthened women to get out of the restrictions of

purdah practice. Given the dire conditions of their debilitating livelihoods, young women thus began migrating to the cities to seek alternative means of livelihood. This migrant population, combined with the huge population that is already stationed in the city areas of Bangladesh, worsened the labour surplus problems. Consequently, the women labour force became underpaid. This abundance and cheap labour force attracted the major transnational corporations such as Nike, Addidas, Wrangler, Gap, and Tommy Hilfiger to invest in Bangladesh for their clothing manufacturing purposes.

2.4 Development of RMG sector and its history in Bangladesh

Historically, Bengal was an advanced region in the Indian subcontinent which includes Kolkata (divided in 1947 and became part of India). According to Yunus and Yamagata (2014), the industrialisation of this region was also very advanced and very much driven by the textile industry. After the division of Bengal was split into West Bengal and East Bengal, the latter became the current Bangladesh but it had suffered many natural calamities. After its independence in 1971, the whole country of Bangladesh lost the momentum of its industrialisation. Undoubtedly, it was the garment industry that rekindled the hope of industrialisation for the country. In 1971, its growth rate was 6.3 per cent and the total worth of its exported goods and services was USD 540 million (Ahmed, Greenleaf & Sacks, 2014) only. The export earnings gained from the RMG industry, at that time, was non-existence. The growth of this industry took place steadily in the 1970s. By 1978, there were only nine garment factories in Bangladesh and they had generated one million dollars of export for the country in that period (Yunus & Yamagata, 2012). The gradual increase in the number of factories is noted in Figure 2.2. It shows that although the number of factories had increased until Fiscal Year (FY) 2012-13, the industry also began to decline from 2013-14. This decline may be explained by the fact that after the collapse of a garment factory in 2013, which was considered as one of the

biggest industrial accidents, the Bangladesh Government and its foreign buyers became seriously concerned about the social compliances of the factories. Due to the consequence of not being able to comply with the Government rules which had been created due to political pressure, a number of factories began to shut down.

The development of the RMG industry in Bangladesh was influenced by the national and international policy changes. At the international level, quota imposition on clothing exports of some East Asian countries led to a relocation of the industry in quota free locations. For example, the Korean firm Daewoo entered into a joint venture with the Desh Garments company of Bangladesh in 1977. The main reason for Daewoo to invest in Bangladesh was due to the import restrictions imposed by the US and other OECD markets under the MFA regimes along with high labour costs and labour shortage that had been imminent in South Korea (Rhee, 1990). The Desh Garment company sent as many as 130 workers and management trainees to South Korea for six months. This movement made by Bangladesh helped to push the emergence of the RMG industry in Bangladesh. Interestingly, of the 130 trained personnel who had returned from the Daewoo induction in South Korea, 115 had left the Desh Garments company to start their own garment manufacturing with some being hired by other firms offering an increased salary of many times to the workers (Easterly, 2001). Prior to its independence in 1971, Bangladesh had only two garment factories. However, by 1977, the country had started to export ready-made garments. The Reaz and Jewel Garments company first exported their RMG products to France and Germany. Its accumulated worth was USD 40,000 (Rashid, 2006). This served as the starting point from where Bangladesh entered into the realm of the global value chain.

Comparatively, governments from LDCs are noted to be weak generally; they are deemed to be unable to support any emerging industry with any robust incentives. However, as

an LDC, Bangladesh was able to prove this perception wrong. It was able to support the RMG industry of its country with strong measures; this marked a remarkable turning point for the country. Clearly, Bangladesh had inherited the pre-independence industrial policy from Pakistan which was focused on import substitutions. By the end of the 1970s, Bangladesh had faced a succession of turbulence, such as natural calamities including cyclones, war, famine, a series of political crisis and a decline in earnings from its main export items, jute and jute materials. The increased imports driven by food import had also led Bangladesh to experience a financial crisis when balancing payment (Kabeer, 2004). This crisis, combined with the stagnant Government revenue collections, made the situation even more critical in Bangladesh.

Attempting to open up its economy with the support of the IMF and WB, Bangladesh began to implement a series of economic reforms in the 1980s. These reforms were conducted at the national level policy environment as a means to stimulate the growth of its RMG industry. First, a new Import Policy was announced in 1982 and this put emphasis on the export-led growth of Bangladesh. Next, it began to consider the private sectors as the main engine of its economic growth. The policy environment then became more congenial towards the export-oriented industries, irrespective of their origins (Murayama, 2005). In this regard, the Foreign Direct Investment (FDI) was accelerated by the establishment of two Export Processing Zones (EPZs), one in Dhaka and the other in Chittagong. Bhattacharya and Rahman (2000) stated that in line with the export-led growth strategy, incentive structures were also institutionalised in the early 1990s.[1] This incentive structure encouraged more local investors than foreign investors (Kabeer, 2004) and it served as the reason why 95 per cent of the garment manufacturing firms in

[1]Incentive Structure includes special bonded warehouse facilities, back-to-back letters of credit (LCs), duty drawback, cash compensation of 25 per cent of Free on Board (FOB) value of export and simplified export procedures. The dual exchange rate system of the 1980s was replaced by a unified system.

Bangladesh are locally owned by private limited companies. Only five per cent are joint ventures and these are mainly situated in the EPZs. Table 2.1 shows the evolution of the RMG industry in Bangladesh.

Table 2.1: Evolution of RMG industry in Bangladesh

Year	Event
Pre-independence	
1960	Reaz Garments, a locally owned factory was established and served for the local market until 1977
Post-Independence	
1973	Reaz garments was renamed as Reaz Garments Pvt. limited
1977	Reaz garments and Jewel garments first exported to France and Germany respectively
1978	Desh Garments collaborated with Korean firm Daewoo for technical and marketing collaboration
1980	Bangladesh Government provided Back to back L/C and bonded warehouse facility.
1981	Desh Garments cancelled the agreement with Daewoo
1982	BGMEA established
1983	First investment made in Chittagong EPZ
1985	US and Canada imposed import quota
1986	BGMEA delegation went to USA and Brussels to negotiate the deal of MFA
1993	Investment made in Dhaka EPZ
1994	Minimum wage was increase for the first time in Bangladesh. Minimum wage was set to BDT BDT 930 (equivalent to USD 23.25)
1995	Establishment of WTO and GSP rule of EU came into effect
1995	BGMEA, ILO and UNICEF signed an agreement to abolish child labour from the garment industry
1996	BKMEA established
1999	Tariff reform was introduced and tariff was reduced from 114 per cent in 1989 to 22 per cent in 1999
2004	Period of MFA abolished
2005	MOUs between EU and China and between the US and China to restrict China's apparel exports to the EU and US were concluded
2006	Minimum wage was revised and set to BDT 1, 662 (equivalent to around USD 25)
2007-2008	During the regime of army, restraints were imposed on demonstrations including labour movements.
2009	Labour demanded for higher wages and Government increased the minimum wage from BDT 1,662 to BDT 3,000
2012	Factroy fire killed 112 workers that further fuelled the demand for wage increase along with the demand for imporving the work place safety.
2013	The worst industrial disaster happended in Bangladesh that killed 1,134 workers and left hundreds of injured. This incident again has driven workers to demand for wage increase and improve working conditions.
2013	The Minimum Wage Board was established. It revised the minimum wage and increased it to 5,300 (equivalent to USD 68).
2013	The Accord on Fire and Building Safety in Bangladesh was signed on May 15, 2013 between brands, retailers and trade unions in order to build safety and ensure a healthy environment for the Bangladesh RMG industry. In addition, the Alliance for Bangladesh was also established to inspect the factories with a view to ensure safety in the workplace.
2013	On June 27, 2013 USA suspended Bangladesh from participating in GSP facilities as a result of the country's failure to meet the requirements of maintaining workers rights.

2013	On July, 2013 a National Tripatriate Plan of Action (NTPA) on fire safety and structural integrity was formed. Another National Tripatriate Committee (NTC) was established to monitor the implementation progress of the NTPA.
2013	'The Sustainability Compact: Compact for Continuous Improvements in Labour Rights and Factory Safety in the Ready-Made Garment and Knitwear Industry in Bangladesh' was launched on July 8, 2013 in order to promote continuous improvements in labour rights and factory safety by the GoB, EU and ILO.
2015	GoB amended the Labour Law (2006) to strengthen the collective bargaining power of workers and to ensure safe work place. A Work Participation Committee (WPC) mechanism was introduced whick will act as trade union, if a factory does not have any trade union.

Source: Compiled by the Author

The establishment of the BGMEA in Bangladesh has initiated a momentum which facilitated the workers' right and other international negotiations. It is the largest industrial association of the Bangladesh working group which helps to promote the export-oriented RMG industry (Yunus & Yamagata, 2012). The BGMEA organisation works in aid of trade facilitation and promotion; it takes initiatives to ensure the safety and security of the workers in the factory premises. However, these moves involve a collective bargaining with the Government as the BGMEA strives to monitor the safety of the member factories by providing trainings at various levels to the workers. As an organisaiton, the BGMEA also conducts the necessary negotiations with the garment importing countries on tariffs, quotas, subsidies and finance. This inevitably helps to promote the RMG industry.

Another important impetus that drives the development of the garment industry in Bangladesh is the establishment of the EPZs which provided incentives and utility services to foreign investors who are interested in the RMG industry of Bangladesh. Although the labour union is strictly prohibited in the EPZs, workers earn much higher and they also receive various benefits than what they used to get from local firms that are outside the EPZs. Clearly, the RMG industry of Bangladesh has shown rapid growth and performance both during the pre-MFA period and the post-MFA period. The evolution of the garment industry is further discussed from two phases - pre-MFA era and post-MFA era.

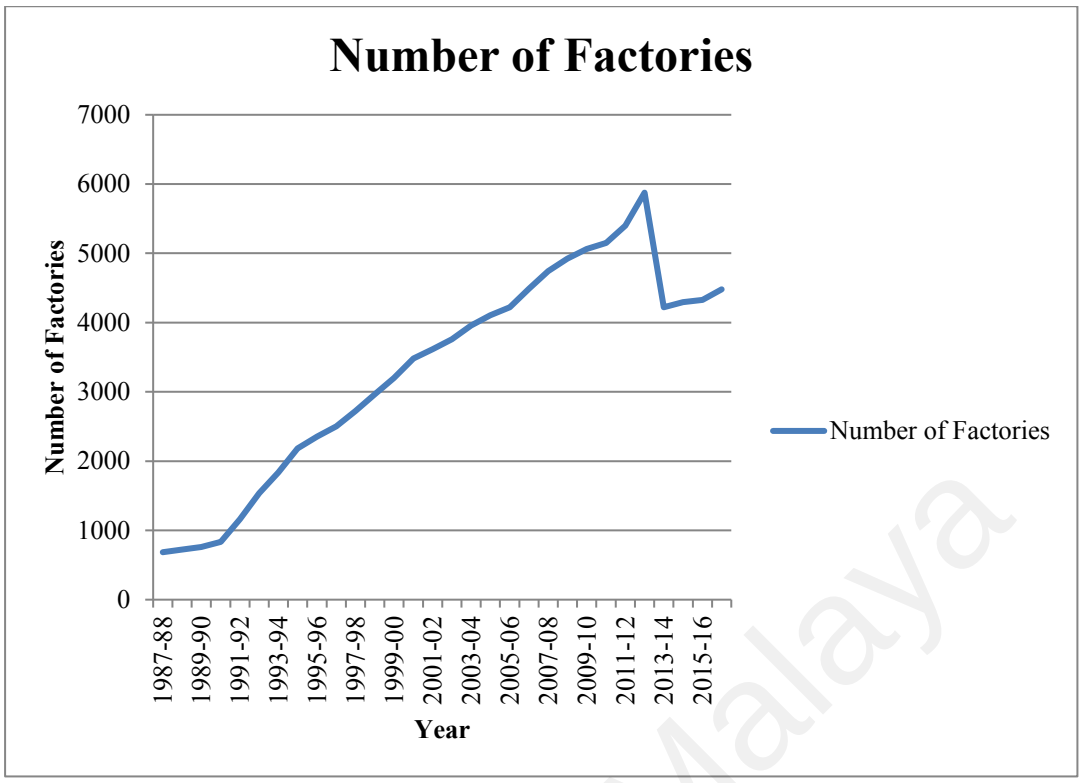

Figure 2.2: Number of RMG factories in Bangladesh

Source: Bangladesh Garments Manufacturers and Exporters Association (2016)

2.5 Garments/RMG industry in pre-MFA period

The MFA acted as a facilitator for most of the LDCs. As one of the LDCs, Bangladesh took advantage of the quota-free entry since the EU do not impose quotas on LDCs. This advantage contributed largely to the early growth of this industry in the country (Rahman, 2013). Bangladesh began to show high performance and soon it was recognised as an important exporter by the North American and European countries (Yunus & Yamagata, 2014). In 1985, Bangladesh entered into the MFA phase when the UK, USA, Canada and France imposed import quotas on Bangladeshi garments like they did on other garment exporting countries (Rock, 2001; Yunus & Yamagata, 2014). At that time, many East Asian countries such as South Korea, Taiwan began to relocate their industries to Bangladesh to enjoy the quota facility and at the same time to take advantage of the cheap labour (Lopez-Acevedo & Robertson, 2012).

In 1986, the BGMEA delegation visited the USA and Brussels to negotiate the deal of the MFA agreement. The negotiation was successful and the UK and France withdrew their quotas in 1986 (Quddus & Rashid, 2000). Finally, the EU also withdrew its quotas from all the LDCs. Nevertheless, there are controversies as to whether the MFA facilitated the development of the garment industry of Bangladesh. Rahman (2013) claims that the MFA introduction is a crucial factor for the rapid development of this industry in Bangladesh but Yunus and Yamagata (2014) argue that as a result of the quota imposition, the initial advantage of Bangladesh as a latecomer, was lost. Quddus and Rashid (2000) considered it as a threat because out of the 700-750 factories available in Bangladesh, 500 were closed in 1986. Others, nonetheless, consider this a blessing as it contributed to the relocation of the industry among the advanced economies, who chose to move to Bangladesh. In 1985, the country had successfully fulfilled the quota through the help of industrial associations and capable firms. For example, the export of garments had increased approximately 30 times within a decade. It reached USD 2, 228 million in FY 1994-95, increasing from USD 75 million in FY 1984-85 (Yunus & Yamagata, 2014).

2.6 Garments/RMG Industry during the period of MFA

This section discusses the evolution of Bangladesh's garment industry from 1995 to 2004 (before the phase out of the MFA). After the establishment of the WTO, it was expected that the trade among countries, irrespective of the country status, would be non-discriminatory. In view of the above, the MFA received 10 years grace period to be phased out and it was phased out in January, 2005. This arrangement was expected to help the industry to prepare itself to become more productive so as to be able to compete with China and other East Asian garment exporting countries. Hence, in 1995, the compliance issue and the labour standard set by the government became very critical.

The challenges for Bangladesh came in the late 1990s where international buyers began to demonstrate their concerns about the factors related to labour standards, for example, low wages, workplace safety and long working hours (Maurer, 2011). It became a major concern of the US to abolish child labour from the RMG industry of Bangladesh. The US declared that if Bangladesh does not cease its child labourpractices, it would not import garment products from Bangladesh (Quddus & Rashid 2000; Yunus & Yamagata, 2014). To address this issue, the BGMEA announced a deadline to the industry to eliminate child labour from its garment producing work, which is 31 October, 1994 (ILO, 2004). It took Bangladesh almost a year to eradicate child labour with the assistance of the ILO and the United Nations Children's Fund (UNICEF). In July 1995, the BGMEA signed a Memorandum of Understanding (MoU) with the ILO and the UNICEF to address the issue of child labour (Maurer, 2011; Yunus & Yamagata, 2014). Under the auspices of the project, children under the age of 14 years who used to work in the RMG factories were placed in schools, with a monthly stipend of BDT 300, for a three year period. As a result, thousands of children workers were dismissed from their jobs. The ILO (2004) also reported that around 40,000-50,000 children workers had lost their jobs and it was speculated that these children would end up taking on more hazardous jobs such as prostitution. However, the BGMEA claimed that 10,000 child workers who were retrenched had also benefitted from the project (Quddus & Rashid, 2000). Although the move had served as the starting point for Bangladesh to comply with the international labour standards, it is uncertain to what level is Bangladesh able to maintain the international labour standards, in particular, when triggered by the recent industrial accidents and labour unrest.

Going back to the year 1996 when the Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA) were established, the European Union (EU) had also provided the GSP facility to RMG products. However, the country of origin must use locally produced

yarns, fabrics and accessories and this practice is known as the Rules of Origin (ROO) (Maurer, 2011). To address this issue, a group of entrepreneurs came together to work collectively as a result of being motivated by the fact that their interest was distinct from the woven manufacturers (Bakht, Salimullah, Yamagata, & Yunus, 2006). Since the Narayanganj is an adjacent district of Dhaka, it also served as the main hub of Bangladesh's Knitwear firms (Yunus, 2010). Consequently, this instigated the BKMEA to establish their head office there, so as to be able to address the challenges imposed by the EU. As a result of getting the GSP facility from the EU, Knitwear exports began to outperform the woven exports in FY 2007-08, FY 2009-10 and FY 2010-11(BKMEA, 2015).

2.7 After the phase out of the MFA

Bangladesh is a beneficiary of the post-Multi Fibre Agreement (MFA) which was ultimately terminated by the WTO in 2004. The LDC status of Bangladesh has extended opportunities for the country to enjoy preferential access to major markets which had been discussed earlier. In spite of the remarkable growth of the sector that amounted to 27 per cent per year in two decades (FY1983-84 to FY2003-04), researchers and policy makers were concerned about the consequences of the post-MFA period. It was speculated that the country would be challenged by the access to raw materials which are going to be competitively priced (Bhattacharya & Rahman, 2000). In fact, there were two views (optimistic and pessimistic) about the phasing out of the MFA. Several studies used the General Equilibrium Model for their simulations to examine the possible effects of the aftermath of the MFA phase out, on the economy of Bangladesh (Mlachila & Yang, 2004; Nordås, 2004). These studies used the dataset which were provided by the Global Trade Analysis Project (GTAP). The studies were able to project a very dismal future for the Garments industry of Bangladesh (Nordås, 2004; Spinanger, 2001; Yang & Mlachila, 2007).

One study conducted by Spinanger & Wogart (2001) quantified the possible loss; it estimated that after the MFA was phased out, the textile and garments export would decline by 15.5 and 7.9 per cent, respectively. This seems to suggest that the pressure on the suppliers including Bangladesh, was exerted by the quota abolition. Nonetheless, the garments' industry in Bangladesh survived in a remarkable way. Endorsing this phenomenon, Joarder, Hossain, and Hakim (2010) note that Bangladesh did not face serious difficulties after the phase out. In fact, the sector had maintained its performance in the same period of time. It was also pointed out that several factors attributed to this success, for example, the low wage rate, the lower export prices, a stable exchange rate, political stability since 2007 and the GSP facilities. It was further noted that the export volume had grown throughout 2005 upon the phase out of the MFA. This is evidenced by the export value of the RMG industry which increased from USD 6417.67 million in FY 2004-05 to USD 7900.80 million in FY2005-06 (Bangladesh Export Promotion Bureau, 2016). Figure 2.3 depicts the growth of the export volume for the RMG industry since FY1993-94. Before 2005, a time when the whole country had been plagued by the prospects of the garment industry, the minimum wage had remained constant. In 2006, the minimum wage was revised for the first time, in 12 years. Here, the increase had remarkably grown to 78.8 per cent. In 2007 and 2008, an emergency law was implemented in Bangladesh under the auspices of the military. In these two years, restraints were imposed on demonstrations including labour movements. Following the general election in 2008, the Awami League became the ruling party in January 2009. During this time, labour disputes were frequent, partly because of the removal of military control; workers demanded for a higher share of the economic rewards that had been contributed by the growth of the garment industry in the country. The government championed for the workers and the result was that the minimum wage was raised to Tk 3,000 (i.e. 80.5 per cent higher than the previous wage of Tk 1,662.5 set in 2006).

Throughout that time, many LDCs and other developing countries had promulgated and implemented the minimum wage law. Nonetheless, there were still controversies regarding the implementation of the minimum wage law (Asadullah & Wahhaj, 2016). Despite the minimum wage paid to workers in the RMG industry being levelled at USD 68, there were several factories in Bangladesh still paying out USD 39 per month. Clearly, this violated the minimum wage law. Expanding on this, a recent study conducted by the Center for American Progress (2013) was able to show that the average wage in Bangladesh in 2011 was 46 per cent and 51 per cent lower than India and Indonesia which were the third and fourth largest garment exporters in the world. Finally, in December 2013, the Government again revised the minimum wage and fixed it as TK 5300 (USD 68) (65% increase). This served as a stepping stone to close the wage gap with other countries. Unfortunately, this minimum wage settlement had not been implemented effectively, and ultimately, it led to workers' demonstrations and strikes.

The bankruptcy of the Lehman Brothers in 2009 had also affected the country, causing Bangladesh to be engulfed in the economic recession which affected the garments exporting countries in general. Nevertheless, Bangladesh was able to survive this event, it was able to maintain the growth of the industry despite lower prices.

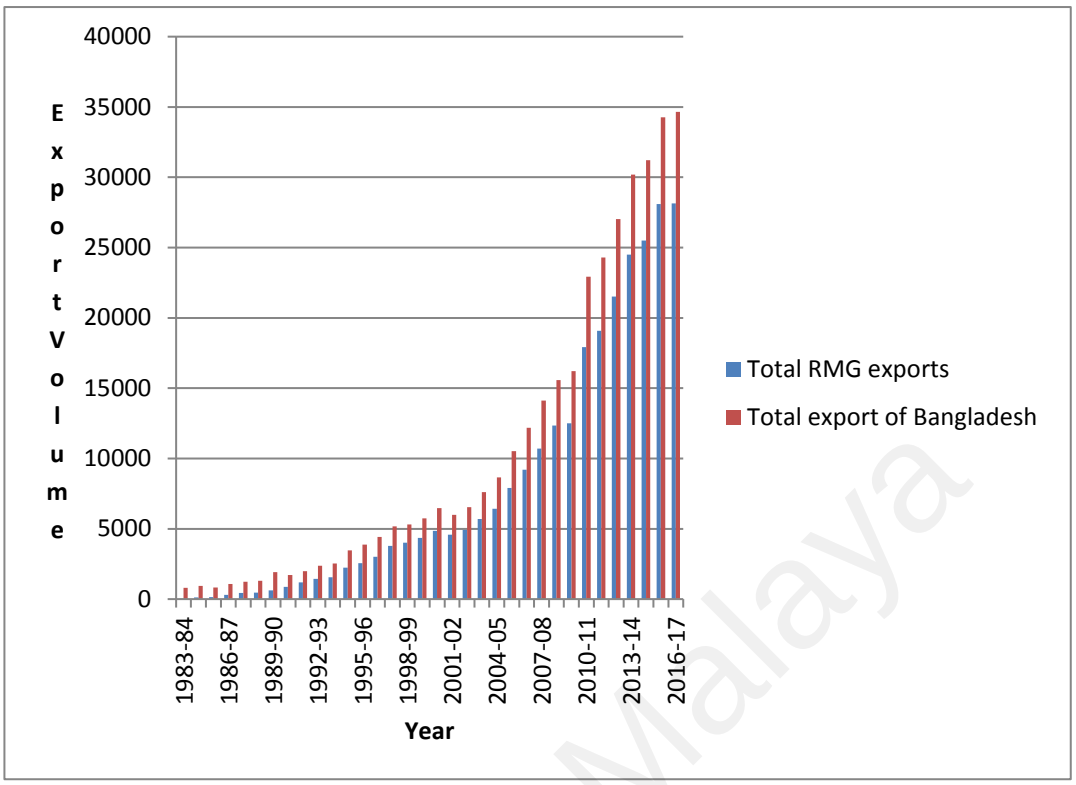

Figure 2.3: Export of RMG and total export of Bangladesh

Source: Bangladesh Garments Manufacturers and Exporters Association (2016)

2.8 Performance of RMG industry after the global financial crisis

It was anticipated that global financial crisis would cause serious effect on the export performance of Bangladesh. But Bangladesh has shown a steady growth in the RMG export. For example: in 2007-08 the total RMG export was 10699.80 Million USD and it increased to 12347.77 million USD in 2008-09 and to 12496.72 million USD in 2009-10. As far as the number of employment is concerned, it also increased from 2.8 million in 2007-08 to 3.5 in 2008-09 and in 2009-10, the number further increased to 3.6 million. In addition, the number of factories also increased in this period from 4743 in 2007-08 to 5063 in 2009-10. It is also important to mention that although the global financial crisis had momentous effect on the world appreal sector, but Bangladesh was able to maintain a stedy growth during this period (Sarker, Khan and Rahman, 2015). However, the global financial crisis greatly influenced the country's export, import, employment, trade,

commerce and remittance, but the performance of RMG sector in terms of export volume, employment generation and growth of RMG sector were unaffected. Cheap labour cost, sound policy and cost advantage were identified as the major reasons of such performance of the RMG sector in Bangladesh (Sarker et. al, 2015).

2.9 Bangladesh RMG industry after the Rana Plaza collapse

The incident of rana plaza is considered as the worst industrial disaster in Bangladesh and one of the deadliest industrial disaster in the world after the Bhopal disaster in 1984 in India. This incident has triggered the global leaders of the supply chain to think again the work place safety and working conditions of RMG workers. Indeed, it has received global attention to rethink about the safety and security of million of workers of RMG industry. As we already mentioned that the disaster has taken away 1,134 lives and left thousand people injured. Bangladesh also faced image problems in the international arena and it also weaked the confidence of the country towards the RMG export performance. As the industry plays a vital role in the export performance of Bangladesh, several initiatives was taken by the international and national level to improve the working conditions in general and work place safety in particular. It was an immediate requirement to safeguard the lives of 4 million workers and regain the confidence of the international buyers. The US government suspended the GSP facility for Bangladesh in June 27, 2013 right after the rana plaza incident. On the basis of National Tripatriate Plan of Action (NTPA) an agreement was issued by the GoB, ILO and EU with time bound actions in July, 2013 to promote imporved labour standards. Additionally, two different programme related to factory inspection were established namely the Bangladesh Accord on Fire and Building Safety in Bangladesh and the Alliance for Bangladesh to make the safer workplace for RMG workers. The initiatives on making the safe workplace has made substantial progress which reflects the achievement of global and national efforts in changing the vulnerability of Bangladesh RMG industry. Among others, the most important action was

to amend the Labour Law, 2006 on July 15, 2013. Afterwards, government issued rules in order to support the amended Labour Law. As a result of this amendment, as many as 464 new trade unions were registered by the end of August, 2015, while it was 131 at the start of 2013 (ActionAid, 2016). In particular, a total of 112 trade unions were registered between January 2013 and February, 2014. In addition, factories where there are no trade unions, a Worker Participation Committee (WPC) has to be elected by the workers of the each factories which will act as the trade union. The government also withdrawn cases aginst trade union leaders and also postponed the suspension orders of the two organizations namely Bangladesh Centre for Workers Solidarity (BCWS) and Social Activities of Environment (SAE). The policy of Occupational Health and Safety (OHS) Policy has put in place and approved by the cabinet, though yet to be implemented. Under the NTPA, 200 labour inspectors were recruited under DIFE.

Right after the disaster, GoB has intervened not only to support the workers but also to facilitate the producers so that a congenial environment can create to boost the confidene of the enterpreneuors and the workers. The government has lowered the advance income tax from 0.8% to 0.3%. and also arranged low-cost credit for the struggling RMG units. Apart from this, initiatives were also taken to safeguard the workers from the hazardous working conditions including work palce safety. A National Tripatriate Plan of Action (NTPA) on fire safety and structural integrity was created in July , 2013. In order to monitor the NTPA, the Natioanl Tripatriate Committee (NTC) was also formed. Bangladesh Employer's Federation (BEF), BGMEA, BKMEA, and trade unions are the members of the committee and the committee is chared by the secretary of the Ministry of Labour and Employment, GoB. However, considerable efforts are still required to be carried out by the stakeholders to improve the working conditions and ensure the collective bargaining of labours. Nonetheless, the performace of the RMG sector in terms of export earnings, employment creation have shown a steady growth. For example: in

2013-14 the total export volume of RMG industry was 24,491 million USD, while it was 25,491 million USD in 2014-15, 28,094 million USD in 2015-16 and 28,194 million USD in 2016-17 (BGMEA, 2016).

2.10 Chapter Summary

This chapter has discussed the evolution of the RMG industry in Bangladesh. As a consequence of opening up the economy in the 1980s, the RMG industry in developing countries as well as LDCs began to grow. The policy changes of the GoB towards export oriented growth had received much attention and the new industrial policy of 1982 was implemented so as to facilitate the export led growth. The growth of the RMG industry was an outcome of such policy changes. Particularly in Bangladesh, RMG products meant for exports began to flourish during the 1990s even though the industry had started in the 1970s. Like other LDCs, the industrialised base of Bangladesh largely depended on its RMG industry. Undoubtedly, this industry is the major employment generating sector in Bangladesh. In sum, the export performance of Bangladesh's RMG industry was extremely good during and after the phase out of the MFA. This was further enhanced by the implementation of the lowest wage rate in the labour surplus country which ultimately caused Bangladesh to flourish in this sector.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

Given the complexities involved in the nature of dependent variables for each aspects of the well-being of RMG workers, we discuss the methodologies and data used in two categories: general and specific. The general framework is discussed in this chapter while the specific frameworks are discussed in the respective individual analytical chapters.

This chapter begins with the basic conceptual framework of the thesis followed by the theoretical underpinnings of three aspects of workers' well-being. It then presents the estimation technique of each chapter and the advantages of these techniques over other methods. Following this, we present the descriptive statistics of the demographic and socioeconomic variables of the data set. In the next section, we discuss the descriptive statistics of demography, socio-economic and other variables of the data set.

3.2 Conceptual Framework

Figure 3.1 illustrates the conceptual framework of the thesis. It dwells upon three important attributes of well-being - earnings, health, and empowerment. In line with the human development literature, three aspects related to human well-being have been chosen. There have been several attempts to define well-being, but most of them not concentrated on the definition rather mainly focused on different dimensions (Dodge, Daly, Huyton, & Sanders, 2012). Moreover, there is a lack of consensus on the definition of well-being and determining factors can capture an individual's well-being (Centre for Disease Control and Prevention, 2016). Nevertheless, the Centre for Disease Control and Prevention (2016) highlights that well-being is dependent upon good health, positive social relationship and availability and access to basic resources.

Considering the lack of a comprehensive definition and indicators of well-being, the study focuses on the three components of well-being. That is, it attempts to find out the determinants/correlates of earnings, health, and empowerment of RMG workers. The study argues that the first and foremost reason for workers to get employed in the RMG industry is to earn money that provides basic necessities to a person. Hence, we investigate the determinants of earnings so that it can provide policy guidelines to find out the areas in which investment should be made that can contribute to enhancing the earnings of the low-income workers. The second important component of well-being in this study is health status. According to ILO (2016), healthy workers are productive and promoting healthy workplace is one of the key factors to increase productivity. Given the uniqueness of the composition of labour force of RMG industry (as 80% of them are women), the third component of the well-being of this study is women empowerment where we only consider the married women workers as the respondents. The reason for doing so is that women empowerment is one of the eight MDGs and being employed in RMG sector can be a means to attain different aspects of empowerment. The detailed aspects of empowerment are discussed in Chapter 6. The first and second components of well-being are important for the sustainability of the RMG sector and retaining workers in the industry and contribute to Bangladesh's economy. The third component is an integral part of sustainable development. The significant expansion of women employment is a vehicle for the empowerment. The conceptual framework is based on the three dimensions of well-being (earnings, health and empowerment).

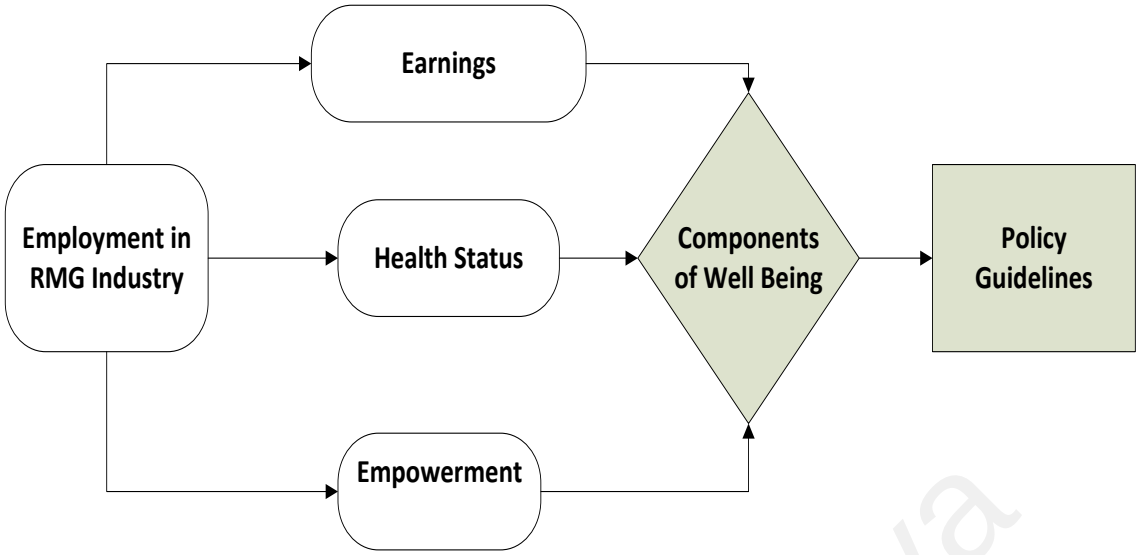

Figure 3.1: Conceptual Framework

3.3 Theoretical Background

3.3.1 Earnings Determination (Objective 1)

Human capital is the most influential theory of wage/earnings determination (Sari, 2000). The human capital theory posits that individuals have an incentive to acquire additional qualifications because the qualifications represent an investment in human capital. Nowadays, individuals work harder to earn and acquire additional qualifications and other relevant skills in order to secure jobs, future prospects and fulfil the demands of employers. These endeavours will lead to an improvement in the quality of labour which employers can use to generate additional output in a manner analogous to an investment in physical capital. Employers recognise the value of higher human capital by rewarding their employees with higher wages (Becker, 1964; Mincer, 1958).

Enhancing individual capacity is an essential component to succeed in the labour market. Therefore, the emphasis is on upgrading the capacity of individuals both at the policy and individual levels. Human capital accumulation is one of the tools employed and developed to achieve this goal. Investment in human capital is indeed the most valuable, among others, to sustain in the labour market of individuals. In labour economics, human

capital is viewed as a combination of characteristics and skills that determine the productivity of workers. Firms also value human capital as it contributes towards maximising profits. Firms tend to pay higher wages to educated workers since they can carry out the order more efficiently and can act as reliable members of the firms (Becker, 1964; Bowles, Gintis, & Osborne, 2001; Schultz, 1961).

Mincer (1974) and Becker (1964) provided the conceptual basis of wage determination based on the human capital theory. They examined investment in schooling and post-investment such as training and work experience as well as other socioeconomic attributes like marital status, nationality, and geographical locations as these are associated with wages or earnings. Becker (2009) pointed out that investment in human beings is the most valuable form of investment. He also mentioned the different kinds of capital related to basic human needs in modern times such as proper education, computer literacy training, and provision of healthcare. These investments are significant and add value to an individual's achievement in the labour market. This research focuses on individual-level human capital and firm-specific human capital.

3.3.1.1 Human Capital Theory

In labour economics, human capital refers to a standard set of characteristics or skills that contributes to an increase in productivity through increased knowledge and skills. Social and economic well-being can be achieved by developing talents, skills, abilities, and gained knowledge (Grundy & Sloggett, 2003). Different scholars developed this theory between the 1960s and 2000s (Becker, 1964; Fitz-Enz, 2000; Mincer, 1974; Schultz, 1961). According to the human capital theory, workers are considered resources for productivity gain. In this study, we consider the Backerian-Mincerian human capital theory as a theoretical motivation that discusses investment in human capital and on-the-job training. This theory argues that both aspects of human capital have significant effects

on the wage differentials. In other words, workers who are highly-educated receive higher wages and similar impact can be found in those who receive on-the-job training. Specifically, it postulates that education contributes to increased productivity. Consequently, higher productivity is rewarded with higher earnings (Becker, 1964; Mincer, 1974). It is believed that there is a substantial link between expected lifetime labour force participation to one's incentive to acquire marketable training (Polachek, 2004). Therefore, education and training are the key determining factors of an individual's economic performance (Bhatti, 2012). Hence, the most important aspects of the human capital theory are investment in human capital and on-the-job training (it can be formal or informal). Therefore, the theory considers human beings as a form of capital for development and seeks to reveal the benefits of education and training.

3.3.1.2 Investment in Human Capital

Becker (1964) formalised the derivation of human capital. Investment in education anticipates that future earnings will be enhanced through the increase and expansion of knowledge and skills. Schultz (1961) defined the term 'human capital' as expansion of the knowledge and skills of individuals through education and training. In line with Schultz's emphasis on education, Becker viewed that an individual receives additional income as much as an investment in the right form of education.

Investment decisions on human capital depend on the current expenditure of investment and predicted earnings in the future at the present value (Bhatti, 2012; Sari, 2000). Investment can be made on a physical object or a human being through formal education and training. According to Thurow (1975), employers believe that persons with proper education, training or schooling are more productive than those with less schooling. Those with proper schooling can be trained more easily in order to reach the desired potential and goals. Investment in human capital is a tool for improving productivity. This

can facilitate firms to detect which workers will be more productive on-the-job and act as a sorting device to choose more productive workers (Sari, 2000).

The anticipated lifetime of a person's work and achievement according to human capital theory is the crucial motivating factor which can result positively in receiving higher earnings (Polachek, 2004). Both Mincer and Becker agreed that the wage profile of individual increases with an increase in the level of education, experiences and human capital. The relationship between earnings and schooling has long been investigated. For example, using different US data with different educational attainment, Walsh (1935) concluded that the attainment of education determines the wages that one receives. In other words, those who attain higher education are expected to receive higher lifetime earnings.

The empirical work of Mincer (1974) on human capital theory has been recognised as a leading empirical work of labour economics. Mincer derived the earning function from Beckers' human capital theory. He developed a simple earning equation by taking into account the individual's acquired human capital (education) and experiences in the labour market (Mincer, 1974). This model is based on the Ben-Porath (1967) schooling model which postulates that people generally invest in schooling or education in ways which can maximise their future earnings in order to have a better life. It shows the statistical relationship between wages, education, and experiences. Based on the theoretical and empirical literature, this model argues that wage is a function of years of education and potential labour market experiences (age minus years of schooling minus six). The assumption behind calculating wage market experiences is that a child starts schooling at the age of six. This equation treats schooling and on-the-job training symmetrically. In the Mincer equation, experience refers to the potential experience and not the actual experience of workers in the labour market.

3.3.1.3 On-the-job Training (OJT)

On-the-job training is the most influential approach to acquiring skills otherwise known as marketable skills. Early research on human capital recognised on-the-job training acquired through formal company-sponsored training programs or informally as workers learn by doing is as important as formal education (Blau & Kahn, 2013). The related literature found that participation in training programs is significantly related to wages or wage growth (Frazis & Loewenstein, 2005; Veum, 1995). Training refers to activities carried out after attaining formal education and can contribute towards increasing the qualifications of an individual in the labour market (Sørensen, 2000).

The two types of on-the-job training are formal and informal (Becker, 1964; Blau & Kahn, 2013). Formal training includes different training and apprenticeship programmes. According to Sari (2000), on-the-job training is often informal, and workers can learn by observing skilled or experienced workers, listening to conversations, or work as a temporary substitution if other workers were absent or went on breaks. He also documented that this training cannot be measured. Since workers attain experience at their workplace through on-the-job training, it certainly helps to maximise their earnings (Becker, 1964). Hence, training is another component of human capital investment. Formal training, on the other hand, occurs when an organisation organises a training course based on the current or future job demands of workers. Hence, the theory of human capital is the main theoretical underpinning to address research question 1 of this thesis.

Nonetheless, there are controversies persist regarding the simplistic approach of the theory of human capital assumimg that level of education is always associated with higher productivity. Because of this, in this study, we also have taken into account the eanrings funcitons of Mincer (1974) where earnings is considered as a function of years of schooling and experience. We have not used the conventional mincerian function and

instead we used the actual experience by combining past and present experience of RMG workers. Hence, HC theory is not the only theory that has been used in this study. It is used despite its simplistic approach , because it helps to capture the predominant factors contributing to eanrings of RMG workers

3.3.2 Health Conditions (Objective 2)

3.3.2.1 The Capability Approach (CA)

The capability approach developed by Amartya Sen is a critical response to the various approaches to measuring well-being. Sen (1992) argued that the capability approach contributes to the field of social science in two ways: (i) it can be used to evaluate the well-being; and (ii) to assess the freedom. It is a normative framework serving as a conceptual basis to evaluate different aspects of well-being as policy guidance to eliminate obstacles (Tao, 2010). These obstacles are responsible for the inability to achieve the quality of life that people have reason to value.

Although Sen recognised earnings/income as an indicator of well-being, he argued that the income is not adequate to ensure the components of well-being as being healthy, food secure or able to choose a job, etc. (Sen, 1992). The capability approach advanced by Sen (1992) addresses three main concepts, namely capabilities, functioning, and freedom. These three components help evaluate an individuals' well-being. Sen's (1992) reference to health ranges from "being adequately nourished, being in good health, avoiding escapable morbidity and premature mortality, to much more complex achievements, such as being happy, having self-respect, and participation in communities" (p.39). Sen (2001) expanded his capability approach by addressing two elements of freedom, i.e. the processes that allow freedom of action and decision-making, and the opportunities that people get from their specific personal and social situations. The capability approach rejects the view to assessing well-being based on the commodities, income or material

resources. Income alone cannot ensure the components of well-being, such as being healthy, being food secure, or being able to choose a job (Sen, 1992). Emphasis should be given to the actual living standard that people manage to achieve rather than focusing on the means that might facilitate living a good life (Sen, 2001). Freedom to a person is "to achieve the types of life they want to live" (Tao, 2015, p.1). Therefore, functioning is the 'being and doings' that people have reason to value, while capabilities are the opportunities or substantive freedoms that people have for comprehending this functioning.

The capability approach distinguishes between the means (goods and services) and capability and functioning (Robeyns, 2005). It also recognises that a person and the environment in which they live are also important for their functioning. The capability to function is very closely related to the concept of functioning. It is a set of vector functioning. It is worth mentioning that no single indicator is able to capture the dimension of human well-being and it is nearly impossible to capture all aspects of well-being in a single study. Sen argued that income is not the only resource of well-being. Other factors such as security, education, and health have to be considered, and these may not be acquired with income (Tao, 2010). Capability in Sen's theory refers to the practical opportunities and functioning including activities as well as desirable states of an individual such as 'being well nourished', 'being healthy', or 'being free of malaria'.

The central concept of the capability approach includes agency and well-being. These concepts are also designed by a number of cross-cutting distinctions. According to the capability approach, well-being refers to the ''effective opportunities to undertake the actions and activities that they want to engage in and be whom they want to be'' (Robeyns, 2003, p. 7). Agency is discussed in terms of the goals and changes a person pursues with regards to his values and objectives. Thus, one may evaluate human

development based on relevant dimensions of well-being freedom (the opportunity to achieve well-being); well-being achievement (the extent that well-being has been achieved); agency freedom (the opportunity to pursue and bring about the goals one values); and agency achievement (the extent to which these goals have been achieved). The measurement of different dimensions of human development depends on which concept is being evaluated (Tao, 2010). Tao provided the following example, "well-being achievement should be measured in realised functioning (what a person is actually able to do), while well-being freedom is reflected by a person's capability set (his/her real opportunities)" (Tao, 2010, p. 2). In this study, we consider the well-being achievement dimension of the capability approach where we consider the health status of RMG workers as a proxy for well-being achievement.

3.3.2.2 Conversion Factors and Capability Approach (Means versus Functioning)

CA distinguishes between the means (goods and services) and capability and functioning (Robeyns, 2005). The relation of commodities and the functioning to achieve 'being' and 'doing' can be classified as conversion factors (Robeyns, 2005). The conversion factors play a role in converting characteristics of the goods to individual functioning. Marketable goods or non-marketable goods can be placed in the criteria of conversion factors when they develop certain interests of individuals for their characteristics. Conversion factors, therefore, capture the relationship between the commodity and achievement of functioning. They are means by which an individual can transform a resource to functioning. Robeyns (2005) categorised three conversion factors: (i) Individual Conversion Factors (for example intelligence, skills, age, gender, and education); (ii) Environmental Conversion Factors (geographical location, logistics, and infrastructure); and (iii) Social Conversion Factors (social norms and gender relations, roles, and identities). In other words, the set of commodities available to a person, the environment in which he/she lives/works, and his/her personal characteristics influence the capability

set, which leads to the functioning, or what the person achieves in being or doing (Mitra, 2006). Therefore, functioning is an achievement of a person. It is what she or he manages to do or be. It reflects as it were, a part of the 'state' of that 'person' (Sen, 1999).

3.3.2.3 Effort–Reward Imbalance Model

The effort-reward imbalance (ERI) model is a well-known theoretical model that deals with the work stress which has an adverse impact on workers' health. It argues that mismatch between high workload (high job demand) and low control over long-term rewards are threating job conditions/working conditions. It has been documented that the ERI model aims to understand the contribution of social and psychological factors to human health and disease. The model is proposed by Siegrist (2002). The theory hypothesised that "failed reciprocity in terms of high efforts spent and low rewards received in turn is likely to elicit recurrent negative emotions and sustained stress responses in exposed people" (Siegrist, 2012, p. 2). On the contrary, positive feelings induced by appropriate social rewards play a vital role to promote well-being, health, and survival. According to the model, the effort is reciprocated by reward as a reward is distributed by three transmitter system such as money, esteem, and career opportunities including job security and each of them matters for health (Siegrist, 2012). The theory posits that when there is an imbalance between high effort and low reward, then it can increase the risk of reduced health.

To determine the factors that affect the health condition of RMG workers, we used the capability framework and incorporated the ERI questionnaire within the framework. The detailed analytical framework based on the capability approach and ERI model is given in Chapter 5.

3.3.3 Women Empowerment (Objective 3)

3.3.3.1 Theoretical Underpinning

The study considers the theoretical perspective of power and empowerment, and the dimensions and relationships that influence women agency. We adopted Sen's (1985) definition of agency as empowerment. The concept of empowerment is closely linked with the expansion of agency and human development (Malhotra & Schuler, 2005; Trommlerová, Klasen, & Leßmann, 2015). A fundamental shift in perception or 'inner transformation' plays a vital role to formulate choices from the perspectives of feminists and human rights (Malhotra & Schuler, 2005). It means that it is not enough for women to be able to make choices but that they should consider themselves entitled to do as such (Kabeer, 2001; Rowlands, 1995; Sen, 2001). As articulated by Hanmer and Klugman (2016), the agency is when individuals independently or collectively overcome barriers. Agency is an important part of the capability approach known as 'process freedom', while the other concept of capability approach is called 'opportunity freedoms or capabilities' and refer to "the various combinations of functioning (beings and doings) that the person can achieve" (Sen 1992, p. 40). Hence, the goal of development relies on the expansion of both processes and opportunities (Samman & Santos, 2009).

The idea of agency is central to the capability approach, and human development as the expansion of freedom facilitates people's ability to help themselves and influence the world. The theoretical underpinning of Kabeer (1999) emphasises the ability to make first-order decisions that desired outcome can be achieved as a consequence of this ability. This can further be incorporated into three interrelated dimensions: (a) Resources; (b) Agency and (c) Achievements. Kabeer also claimed that empowerment is the expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them. Empowerment involves the 'process of change'. It implies that those who exercise a great deal of choice may be called powerful but cannot be regarded

as empowered as they were never disempowered (Kabeer, 1999). Hence, the marginalised group may be the main stakeholder and people who exercise plenty of power fall outside the notion of 'empowerment'. According to the theoretical foundation of Kabeer (1999), available resources, including material, human and social, to individual and communities affect the empowerment. As a result, greater control over economic resources, better education and access to information and social rights are important drivers of women both at individual and communal empowerment levels (Trommlerová et al., 2015). Researchers also claimed that empowerment is control or an ability to influence changes which delineate an increase in power (Oakley, 2001; Uphoff, 2005). Uphoff (2005) distinguished two kinds of power as the 'power to cause radical change' and 'power that includes the ability to do and to attain control'.

Kabeer (1999) defined agency as the ability of individuals to set goals and act upon them or the ability to achieve control over various aspects of one's life. It does not only refer to the observable actions but includes the meaning, motivation and purpose which an individual can bring it into their actions. Social science literature on agency is mostly inclined towards decision-making although it can be operationalised in the form of bargaining and negotiation, deception and manipulation, subversion and resistance and can be practised by both individuals and communities (Kabeer, 1999).

It is Becker (1974) who first introduced the individual preference theory and developed a theoretical model for the marriage market. Later on, Manser and Brown (1980) expanded the theory and compared the bargaining power of a husband and wife to demonstrate the problems related to marriage and household decision-making. This bargaining power has been used in the literature to describe the conflict between family members. Jensen and Oster (2009) used several dimensions of decision-making that denoted the bargaining power of women in relation to their husbands such as household

purchases; personal savings; pregnancy; preferences on children's sex; the number of wanted children; and attitudes towards domestic violence. The theoretical literature posits that women can be empowered by strengthening their threat points resources on which women have control and opportunities outside the household they can exploit (Lundberg & Pollak, 1993; Manser & Brown, 1980; McElroy & Horney, 1981). Work experience is also regarded as a threat point as it endows power and resources that can improve the welfare of women. According to Samarakoon and Parinduri (2015), education is a threat option and can contribute to increasing the bargaining power of women as it provides knowledge, power, and resources to make a life choice that improves their welfare. They also argued that more educated women have some say in their household decision-making. Therefore, education empowers women to choose the best for themselves and to bargain with their husbands on the allocation of resources of the households.

Theoretically, it is anticipated that women are able to make decisions in domestic affairs and she possesses greater bargaining power against their husband compared to other women who do not have substantial bargaining power (Ting, Ao, & Lin, 2014). In that article, they used eight measurements of power on the basis of the bargaining theory: autonomy; financial independence; condom use at last sexual intercourse; use of any method to avoid pregnancy at any time; the ideal number of children; the gap between ideal numbers of boys and girls; births in the last five years; and attitudes towards beating. This bargaining model is in line with the indicators of women agency proposed by (Ibrahim & Alkire, 2007). It is worthwhile to mention that while describing one of the four possible exercises of agency 'power to', reflects the decision-making power in relation to their husband proposed by (Ibrahim & Alkire, 2007).

According to Sen (2001), the notion of agency argues that the ability to take a free decision is an integral part of freedom and does not matter whether the person is

successful in achieving it or not. In this perspective, it emphasises the ability to think independently and freely. When people influence to control their destinies even when it is opposed by the other people or the society, it is called empowerment (Mason & Smith, 2003). Kabeer (1999) asserted that power is related to the ability to make choices of those who are disempowered and denied the opportunity to choose. She clarified it as 'Choice has strong neo-liberal connotations, but some notion of choice is also implicit in the Marxist distinction between the 'realm of necessity' and the 'realm of freedom' (Kabeer, 1999, p. 18).

Another crucial component of empowerment is access to and control over resources in the domain of family, market, and community (Mahmud, Shah, & Becker, 2012). Researchers agreed on the point that since power relation operates at different levels, so does empowerment (Bisnath & Elson, 1999; Mayoux, 2000). However, the definition of these different levels varies. There has been heated debate among scholars regarding the conceptualisation of women empowerment. Literature in sociology and gender have agreed on some theoretical points after the debate of the complexities of conceptualising women empowerment. Firstly, access to resources is different from control over them with the latter constituting an indicator of empowerment (Bradley & Khor, 1993; Mason, 1986). Secondly, it is widely acknowledged that power is multi-locational and exists in multiple domains (Malhotra & Mather, 1997). According to Kishor (1995) and Isvan (1991), women's greater control over their lives can be in the domain of the family, social and political spheres and the locus of the control can be within the house or the communities. It is important to mention that economists differentiate this into micro and macro levels. While discussing the macro levels, they emphasise including empowerment from the perspective of the market and political system. The micro level includes individuals, households, communities and institutions (Pitt & Khandker, 1998; Tzannatos, 1999). As far as sociologist and demographers are concerned, the micro level

includes the individual and household while they refer to the macro level as anything from the community to policy (Jejeebhoy & Sathar, 2001). Thus, there is ambiguity among economist, sociologist and demographers as to what constitutes the micro and macro levels of women control. It has been theoretically argued that as a consequence of cultural devaluation of housework, women who earn cash possess more bargaining power than those who are solely housewives (Agarwal, 1997). According to Agarwal (1997), 'Women's entry into wage labour could thus be one way of increasing their intra-household bargaining power not just directly, but indirectly, by increasing the perceived legitimacy of their claims'. Becker (1981) suggests that women's employment or rise in economic share in the family may increase the allocation of household resources but may not necessarily upgrade their decision-making power.

According to Malhotra and Schuler (2005), theoretically, the frameworks that explain different dimensions can be operationalised at any level of aggregation. Rowlands (1997) distinguished power into four different types: power over, power to, power with and power from within and its relation to four different kinds of empowerment. Ibrahim and Alkire (2007) expanded it and claimed each type of power is a distinct exercise of agency. They also relate each kind of power to different types of empowerment. While 'power over' is related to empowerment as control, 'power to' refers to empowerment as choice. Similarly, empowerment in the community reflects the idea of 'power with' and empowerment as change deals with the 'power from within'. They also proposed indicators to measure each dimension of power and empowerment. In line with Rowlands (1997) types of empowerment, Ibrahim and Alkire (2007) developed the indicators for each distinct kind of empowerment while framing empowerment as an expansion of human agency. Women themselves must act as the significant agent when empowerment is conceptualised as an expansion of agency.

We have considered the definition of 'agency' of Sen (1985) as a measure of empowerment and used the indicators based on the typology of power and empowerment of Rowlands (1995). We have also taken into account the theoretical literature of (Kabeer, 1999) who has shown the relationship between resources, agency and achievement. In line with the objective of the study, we consider the association between resources and agency from a different dimension. Moreover, bargaining power in the household is a kind of power that is relevant. Hence, we consider the bargaining power apart from household decision-making power while measuring empowerment as choice. Furthermore, we have made a few modifications to the questionnaire proposed by (Ibrahim & Alkire, 2007) based on the importance of the context.

3.4 Research Mode and Data

This section explains the research methodology of the study which has been divided into sub-sections. It also discusses the data collection procedures for the purpose of this study. As mentioned, the study aims to investigate three important components of the well-being of RMG workers. It uses the quantitative technique as a research methodology. Moreover, it administers a field survey to the targeted population.

3.4.1 Data

This study uses a primary dataset collected on RMG workers in Bangladesh from fieldwork carried out between May and November 2015, using a structured questionnaire as a primary instrument for data collection.

3.4.2 Questionnaire Design and Pilot Survey

The questionnaire was designed to investigate the aims of the study. A pilot survey was conducted in the Narayanganj District in May 2015. Initially, 40 female and 10 male respondents were interviewed. After the completion of the pilot survey, the questionnaire was carefully tested, and necessary changes were made before the final survey. The

questionnaire consists of four sections. All sections of the questionnaires are the same for all respondents except section 4 which is related to women empowerment where we only consider the currently married women workers. The questionnaires are included in Appendix-A. In the first section of the questionnaire, the demographic profile of all respondents were collected. Each section of the questionnaire is based on each research question, for example first section of the research question is designed and followed the human capital theory (Becker, 1964) and Mincerian wage equation (Mincer, 1974). Similarly, the questions in the second section is based on the research objective two. The dependent variable has taken into account the sickness absence in the past one year and followed (Marmot, Feeney, Shipley, North, & Syme, 1995). In order to measure the phychosocial working conditions, a short version of Effort-Reward Imbalance (ERI) questionnaire was used according to (Dragano, Siegrist, & Wahrendorf, 2010; Steinisch et al., 2013). Questionnare used for measuring physical working conditions also followed the literature. The empowerment measure followed the OPHI questionnaire with slight modification based on the importance of the context. The detail discussion of variables construction is found in each analytical chapters (chapter 4, 5 and 6).

3.4.3 Data Collection

The survey aimed at collecting the respondents' demographics, earnings, the occurrence of absenteeism due to illness and perceived empowerment status and other information related to the research questions and objectives through a structured questionnaire. It elicited information about the age, gender composition and level of education of the respondents' and family members. 'Face-to-Face' survey technique was selected as the method for data collection, and the purpose of collecting data was explained in order to achieve a high rate of response and detect and clarify the problems encountered to understand the questionnaire by the respondents. The questionnaire was translated into the local language *Bangla*, considering the low level of educational attainment and for

convenience. It also helps to get close to the interviewees so that a friendly environment can be created in order to improve the interaction between respondents and the researcher. It is important to mention that we have not included the garment factories located in EPZ area considering several issues. Firstly, in spite of the dominance of FDI in EPZs, the vast majority of Textile and Garments (T&G) are situated outside EPZs and owned by local entrepreneurs (Abras, 2012). In particular, only 1 percent of apparel firms was located in EPZ in 2005 (World Bank, 2005), though until that period the FDI was restricted to other than the EPZs areas. Secondly, according to Frederick and Staritz (2012), the FDI outside EPZs areas was limited. It is also documented that in EPZs the total share of the number of factories and employment is less than 10% of the total number of RMG factories (Ahmed & Nazneen, 2014). Thirdly, wages and working conditions in EPZs are under the strict surveillance of the Bangladesh Export Processing Zone Authority (BEPZA) and a system of councillors (Ahmed & Nathan, 2014).

3.4.4 Sampling Technique

Figure 3.2 illustrates the sampling technique at a glance. The study used multistage random sampling to collect data. Garment factories are located in nine districts in Bangladesh (Department of Inspection for Factories and Establishments, 2015). We have divided Bangladesh into nine homogeneous clusters. After that, we have chosen the districts of Dhaka and Narayanganj randomly through a lottery method following the database of the Department of Inspection for Factories and Establishments (DIFE) under the Ministry of Labour and Employment.

According to the Bangladesh Bureau of Statistics (2013a), Dhaka district has 41 Thanas[2] and six Upazils[3]. We randomly selected five Thanas (namely Mirpur, Gulshan,

[2]Dhaka City Corporation is divided according to the Police Station which is called as Thana. It includes city corporation area declared by the Ministry of Local Government.

Mohammadpur, Tejgaon Industrial Area and Tejgaon) and one Upazilla (namely Savar). In the Dhaka District, there are 1961 factories, and in Narayanganj district there are 734 factories (Department of Inspection for Factories and Establishments 2015). Factories were then chosen randomly based on the database of the DIFE using the lottery method. As a result, we selected seven factories from each administrative unit on a random basis which amounted to a total of 42 factories. In the next stage, using the factory register, we selected ten workers from each factory for a total of 420 workers. We also used an application that can generate a random number using top and bottom numbers of the population without replacement. We collected and completed 400 valid responses by employing the face-to-face interview technique.

The same sampling frame and mode were utilised to choose and obtain samples from the Narayanganj District. According to the Bangladesh Bureau of Statistics (2013b), Narayanganj District has five Upazilas and six municipalities. We have selected five Upazilas randomly (namely Narayanganj Sadar, Bandar, Rupganj, Sonargaon, and Araihazar) and then selected seven factories randomly from each administrative unit for a total of 35 factories. Using the employees' list from the factories, we chose 12 workers from each factory. We could complete 375 valid interviews from the 420 randomly selected respondents. Overall, 775 interviews were completed out of which 560 were female respondents while 215 were male respondents. The computer application named Rossman/Chance Applet Collection was used to generate random numbers for selecting factories and workers.

[3]Upazila is the second lowest administrative unit in Bangladesh. Dhaka District comprises Dhaka City Corporation area and areas other than the city corporation area.

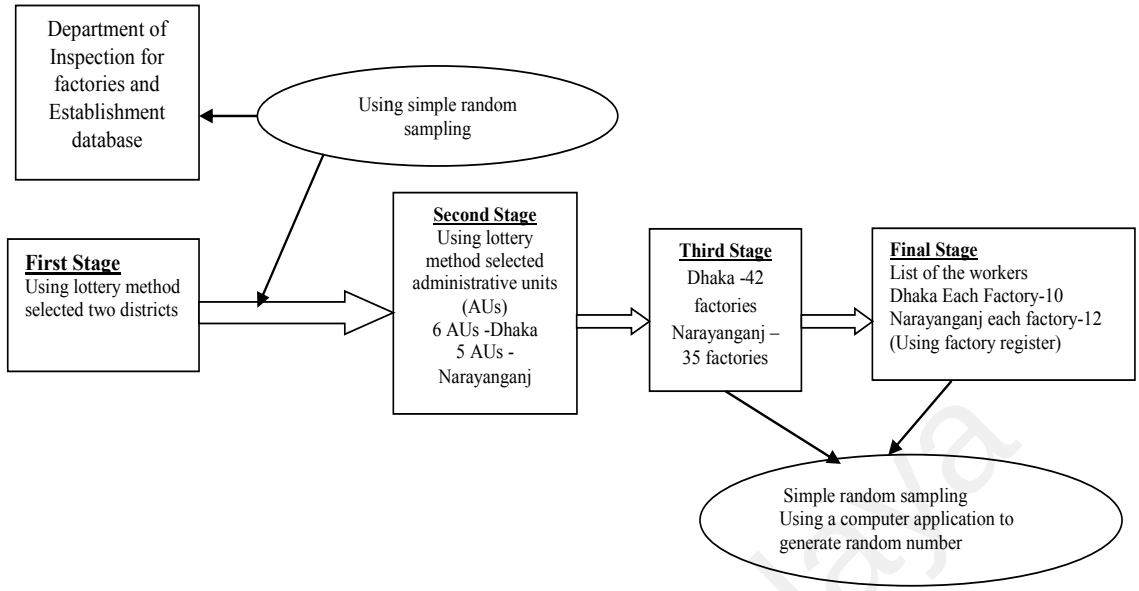

Figure 3.2: Sampling procedure at a glance

3.4.5 Sample Size

According to Hamburg (1979), the objectives of a study may not be achieved if the sample size is smaller than required. Resources are wasted if the sample is larger than required. Sample size plays a vital role in gaining steady, significant approximations and explanations of outcomes (Hair, 2006). In other words, the number of respondents involved help to determine whether the results of a study can be considered valid or invalid. The validity of this study can contribute significantly towards the development of future research in this particular area of study. In order to obtain an appropriate sample size from this population, the following formula was used (Lind, Marchal, & Wathen, 2007).

$$n = \frac{\pi(1-\pi)Z^2}{E^2}$$

Here, *n* is the size of the sample, π (0.50) is the population proportion, Z is the standard normal value corresponding to the desired level of confidence, and E is the maximum allowable error. Based on the formula for a sample size, Z = 1.96 (95% confidence level), π = 0.5, and E = 5%. The above equation is appropriate for infinite sampling. Therefore,

the minimum sample size is 384.16. It means that the sample size should be greater than 385. This sample size is also appropriate as recommended by (Krejcie & Morgan, 1970). It is also confirmed by Gay, Mills, and Airasian (2011) that a sample size of 400 is adequate if the target population size is above 5000. Therefore, it can be argued that the outcome of the study will not cause any concern of bias which may arise due to unsuitable sample size.

Raosoft's sample size calculator can be used to estimate the number of subjects required to obtain valid results. Using an estimated population of 20,000 (sample size does not change much for populations over 20,000), a sample size of 377 would represent the population with a margin of error of 5% and a confidence interval of 95% (Raosoft, 2008). Using a power of 0.95 and an alpha of 0.05, a sample of 210 is sufficient to detect a medium effect size when conducting a two-tailed t-test. Using a conventional power of 0.80 and an alpha of 0.05, a sample of 138 is sufficient to detect a medium effect size when conducting correlational analyses. Therefore, the sample size employed by this study is adequate to address the research questions.

3.5 Descriptive Statistics

This section presents the socio-economic characteristics such as age, education and gender composition of the respondents and their households. It also provides the summary statistics of other variables used in this study such as work experience in the RMG industry, formal on the job training of the respondents.

3.5.1 Age of the Respondents

Table 3.1 shows the mean age, standard deviation (Std. Dev.), and minimum and maximum age of the five categories of respondents. It appears that the average age of the female workers and male workers is 26 years and 25 years respectively. It also suggests that the average age is almost similar for both male and female workers. It is important to

mention that to some extent, child labour is still present in the RMG sector as the minimum age of female worker is 13. The presence of child labour is consistent with the claim of other literature (Asadullah & Wahhaj, 2016). The Labour Act, 2006 and Bangladesh's National Child Labour Elimination Policy, 2010 prohibits the employment of children under the age of 14. It implies that anyone whose age is 14 and above can join in labour employment. However, the Labour Act, 2006 also gives a provision of the employment of children between the ages 12 to 14 under special circumstances. Nonetheless, we found only one respondent who is 13 years old which is negligible. It is also evident that majority of respondents belong to the age group 24-29 years and both female and male workers. This finding concurs with others which showed the overwhelming majority of young workers in the garments industry (Huynh, 2016).

Table 3.1: Age of the Respondents

Gender	Obs.	Mean	SD	Min.	Max	13-18 years (%)	19-23 years (%)	24-29 years (%)	30-34 years (%)	35 & above years (%)
Female	560	25.92	6.77	13	60	9.46	30.54	32.68	14.46	13.02
Male	215	26.67	6.96	15	60	6.98	29.30	35.35	15.35	18.61
Total	775									

3.5.2 Education of the Respondents

Table 3.2 shows the average years of schooling of respondents and the percentage with different level of education. The average years of schooling are higher among male workers than female. In particular, the average years of schooling is 5 years for female and 8 years for male workers. It indicates that on average female workers completed primary education while male workers attained some secondary education. The percentage of female workers with no education is 14.64 while in the case of male workers, it is only 5.12. This is not surprising as according to the Bangladesh Bureau of Statistics (2015), the percentage of women (33.1%) who have not attended schooling is higher than men (22.6%) among the working-age population. Female workers have the higher percentage of attaining primary education (45.71%), and male workers have the

higher percentage of attaining of secondary education (54.42%). The most notable is the percentage distribution of higher secondary (HC) and above level of education among male and female workers. It is 18.6% for male workers who have some higher secondary and above level of education, and in the case of female workers, it is only 2%. It also indicates almost similar kind of picture among the working-age population of Bangladesh as higher secondary and above level of education is higher among male. In particular, the percentage of having higher secondary and above level of education among males is 17.3%, and for females, it is 10.6% in Bangladesh (Bangladesh Bureau of Statistics, 2015).

Table 3.2: Education (Years of Schooling) of the Respondents

Gender	Obs.	Mean	SD	Min.	Max	No Education (%)	Primary (%)	Secondary (%)	HC and above (%)
Female	560	5	3.05	0	15	14.64	45. 71	37.68	2
Male	215	8	3	0	16	5.12	21.86	54.42	18.60
Total	775								

3.5.3 Education of the Household Head

We have some missing values as far as the education of the household head is concerned. With regards to the head of households' education, the average education of female workers is 6 years, and the average education of male workers is 7 years. The percentages of the head of households with no formal education for female workers is higher than the percentage of household head's education of male workers.

Table 3.3: Education of the Household Head

Gender	Obs.	Mean	SD	Min.	Max	No Education (%)	Primary (%)	Secondary (%)	HC and above
Female	430	6	3.41	0	14	14	31.62	49.60	5.34
Male	119	7	3.49	0	14	8.40	42.85	31.93	16.80
Total	549								

3.5.4 Household Size of the Respondents

Table 3.4 presents the size of the household of the respondents. It shows that the average household size is bigger for male workers than female workers. Interestingly, there is a similarity regarding the maximum and minimum number of household size.

Table 3.4: Household Size of the Respondents

Gender	Obs.	Mean	SD	Min.	Max.
Female	549	2.80	0 .04	2	7
Male	119	3.54	0.07	2	7
Total	660				

3.5.5 Earnings of the Respondents

Table 3.5 shows the monthly earnings of the respondents. It is important to mention that the earnings comprise wages and bonuses. The bonus is yearly, and we have divided it into monthly for the convenience of the study. Table 3.5 shows that the mean earnings of male workers are higher than female workers. This could be partly explained by the fact that the female workers earn less than male workers which are in line with (Paul-Majumder & Begum, 2000).

Table 3.5: Earnings of the Respondents

Gender	Obs.	Mean	SD	Min.	Max.
Female	560	7935	2294	3000	24100
Male	215	11659	3979	3983	23388
Total	775				

3.5.6 Work Experience of the Respondents

Table 3.6 shows the working experience of RMG workers. The average working experience of male workers is higher than female workers. It also shows that the majority of male and female workers possess working experience in the RMG industry less than 5 years. It is also to be noted that there is a decreasing trend of work experience as far as percentage of less work experience to more work experience.

Table 3.6: Work Experience of the Respondents

Gender	Obs.	Mean	SD	Min.	Max	0.04-4.83 yrs (%)	5-9.5 yrs (%)	10-15 yrs (%)	16 and above year
Female	560	6	3.41	0	14	54.29	28.57	11.07	6.07
Male	215	7	3.49	0	14	37.21	33.02	18.14	11.63
Total	775								

3.5.7 Marital Status of the Respondents

By marital status, a vast majority were married (58.58%), while 29.16% were unmarried, 6.45% were divorced, and 5.81% were widowed. In particular, 72.14% of women and 23.72% of men workers were married (see Table 3.7). This is consistent with the recent trend in export – oriented sector and also coincides with the marital status of the garments workers of Vietnam where more than 50 percent of female workers are married with children (Fontana & Silberman, 2013). It also indicates that in Bangladesh the share of married women has been gradually increasing, indicating a positive change in socio-cultural attitudes towards women working in the labour market. Previous literature (Kabber & Mahmud, 2004a) on this issue had found that when the domestic responsibilities of women were seen to increase as a result of marriage and having children, then women tended to drop out from working in the garment industry.

Table 3.7: Marital Status of the Respondents

Gender	Obs.	Mean	SD	Unmarried	Married	Divorced	Widowed
Female	560	5.44	0.348	15	72.14	7	6
Male	215	7.11	0.197	66.51	23.72	5.58	4.19
Total	775						

3.5.8 On-the-Job Training of the Respondents

In the study, training is a dummy variable. Table 3.8 shows that the percentage of workers who attended training after joining the RMG industry. It can be observed that the percentage of male workers in attending training is higher than female workers. This is concurs with the Vietnamese garments workers where women tend to have less opportunities to receive training than men (Fontana & Silberman, 2013).

Table 3.8: On-the-Job Training of the Respondents

Gender	Obs.	Mean	SD	Attended training	Do not attend training
Female	560	1.158	0.365	15.71	84.29
Male	215	1.218	0.414	21.86	78.14

3.5.9 Job Category of the Respondents

This study consists of three categories of workers, namely helpers, operators and supervisors. Table 3.9 shows that while the percentage of helpers is the highest among female workers, the percentage of operators is the highest among male workers. It is to be noted that we only found a very few number of supervisors among male and female workers of the RMG industry.

Table 3.9: Job Category of the Respondents

Gender	Obs.	Helpers	Operators	Supervisors
Female	560	63.04	35.89	1.07
Male	215	22.79	69.77	7.44
	775			

3.5.10 Working Hours per Week of the Respondents

Working hours per week of the respondents are shown in Table 3.10. The average working hours per week is balanced with females working only an hour less than males. Our findings are not in line with the findings of a report of ILO conducted by Huynh (2016), which claims that in the garments industry, average working hours per week of females and males is 48.6 hours and 54.9 hours respectively. However, it is not clear whether they have included workers from EPZs area or not, whereas our study excluded the workers from EPZs. This may be partly explained by the fact that as a consequence of the exclusion of EPZs workers, the average working hours of our study differs from this study. Another study found per day working hours for men is 12.4 and for women is 12 (Paul-Majumder & Begum, 2000). Interestingly, all the studies confirm that working hours of male workers are more than female workers on average.

Table 3.10: Working Hours per Week of the Respondents

Gender	Obs.	Mean	SD	Min.	Max.
Female	548	59	9.29	48	84
Male	211	60	8.93	48	84
Total	759				

3.6 Methodological Approach of the study

The study used different estimation techniques based on the nature of the dependent variables. The purpose of using different regression analysis is to determine the relationship between dependent and independent variables in each analyrical chapters. In particular, when the dependent variable is continuous, we have used Ordinary Least Square (OLS) regression, when the dependent variable is binary, we prompted to deploy logistic regression. In addition, when the dependent variables shows a consequential order, we used ordinal logistic model and so on. The procedure of each technique is discussed in the subsequent sections.

3.6.1 Regression Analysis

3.6.1.1 Ordinary Least Square (OLS)

In order to determine the earnings determinants of RMG workers, we deployed Ordinary Least Square (OLS) regression. This is the oldest technique among other statistical techniques used by researchers in modern economics (Pohlman & Leitner, 2003).

There are a number of reasons to employ this method. First, it is a simple and robust method. Second, the interpretation is straightforward and easily understandable, and third as the dependent variable is continuous, OLS is the natural choice. The basic linear model of OLS is as follows:

$$y_i = \beta_0 + \beta_1 x_i + \epsilon_i \ \ldots (3.1)$$

Where β_0 indicates the value of constant, β_1 is the value of coefficients and x_i is the vector of the predictors. ϵ_i denotes the error term. There are several assumptions of OLS regression such as homoscedasticity $E[\varepsilon i2 \mid X] = \sigma 2$, which means that the error term has the same variance σ2 in each observation and normality of the residuals. This assumption has been checked before deploying the method in the respective chapters. Moreover, when this assumptions are violated, we also estimated the coefficients using other methods to see whether there are inconsistencies as far as statistical significance and standard error are concerned.

3.6.1.2 Oaxaca-Blinder (O-B) Decomposition method

Sociologists and economists use this method to decompose the wage and earnings differences based on gender and race. We have decomposed the gaps in earnings between male and female workers. We deployed the Blinder (1973) and Oaxaca (1973) decomposition method to identify the magnitude of gender wage differentials between male and female within the RMG industry. This is a method that is widely used to study the labour outcomes by groups. It is useful to decompose mean difference in log wages/earnings based on a regression model (Jann, 2008). It divides the earnings differentials between two groups into two parts: explained and unexplained. The "explained" part deals with the group differences in productivity characteristics such as education and work experience and a residual part that cannot be accounted for by such differences in wage determinants. The "unexplained" part is often used as a measure of discrimination.

The Oaxaca-Blinder earnings decomposition technique, in general, requires estimating two separate regression functions, in our samples by gender, one for male and one for the female. We estimate the following equations:

$$lnE_{mi} = \alpha_{mi}X_{mi} + \alpha_{mi}Y_{mi} + \varepsilon_{mi} \ldots (3.2)$$

$$lnE_{f} = \alpha_{fi}X_{fi} + \alpha_{fi}Y_{fi} + \varepsilon_{fi} \ldots (3.3)$$

Where X_m presents the endowments or personal attributes including years of schooling, experience in RMG industry and training dummy; Y_m denotes household characteristics such as family size and educational attainment of household head. In addition, a district dummy based on the location of the factories is also added in both the equations. Moreover, *m* and *f* present male and female workers respectively. Simply, we can estimate the log earnings differences between male and female workers by subtracting the second equation from the first equation:

$$lnE_{mi} - lnE_f = \alpha_{mi}X_{mi} - \alpha_{fi}X_{fi} + \alpha_{mi}Y_{mi} - \alpha_{fi}Y_{fi} + \epsilon_i \quad \ldots (3.4)$$

Where $\epsilon_i = \varepsilon_{mi} - \varepsilon_{fi}$.

Hence, according to Oaxaca (1973) and Blinder (1973), we estimate the following equation:

$$\overline{lnE_{mi}} - \overline{lnE_{fi}} = \dot{\alpha}_{mi}\,(\overline{X_{mi}} - \overline{X_{fi}}) + \overline{X_{fi}} * (\dot{\alpha}_{mi} - \dot{\alpha}_{fi}) + \epsilon_i \quad \ldots (3.5)$$

The first term of the right-hand side represents how the earnings differentials between male and female workers changed in response to changes in the male-female gap in endowments or characteristics differences and the second term captures the unexplained earnings gap due to coefficients or returns. While the first term presents the observed gender gap due to characteristics difference, the second term denotes to measure the level of 'gender discrimination'.

3.6.1.3 The Logistic Regression

The logit model is a commonly-used model when the response variable is a dichotomised binary response. The model is a nonlinear model as it forces the output/predicted values either 0 or 1 (Torres-Reyna, 2012). According to Greene (2003), logistic regression is used to predict the probability of an event occurring or not occurring by fitting data to a logit form. The logit function is also known as the link function since it links the values

of the independent variables to the probability of occurrence of the event defined by the dependent variable. The equation for the logit model is as follows:

$$\text{Logit (p)} = \ln\left(\frac{p}{1/p}\right) = \beta_0 + \beta_1 X_1 + \beta_1 X_2 + \ldots + \beta_1 X_j \ldots \quad (3.6)$$

Where p = Prob (Y = 1) is the probability that an individual reports absenteeism due to poor health condition, β_0 is the intercept parameter, β_1 is the regression coefficients of the ith variable in the model. The fundamental equation of the logistic regression suggests that there is a constant increase logit *(p)* for every one unit in independent variable, and so on. They are the maximum likelihood estimate after transforming the dependent into a logit variable (the natural log of the odds of the dependent occurring or not) and can be tested by the Wald statistics which follow χ^2 distribution with 1 degree of freedom. It permits testing the null hypothesis in the logistic regression that a particular coefficient is zero.

3.6.1.4 Probit Model

The probit model is also used when the dependent variable is a binary response. The estimation technique follows maximum likelihood estimation which requires some assumptions about the distribution of error (Moore, 2013). Though it is claimed that the results obtained from both methods yield similar results, based on the distribution of residuals we choose one over the other in our analysis. The probit model can be specified as follows:

$$\Phi^{-1}(\text{Pi} = 1|\text{X}_j) = \beta_0 + \beta_1 X_1 + \beta_1 X_2 + \ldots + \beta_1 X_j \ldots \quad (3.7)$$

Here, P_i is the probability that an event will occur, which is measured by the standard normal cumulative distribution function (CDF) Φ. β_0 is the intercept parameter, β_1 is the regression coefficients of the ith variable in the model.

3.6.1.5 Robust Regression

The robust regression is an alternative to OLS when there is a presence of outliers (Bruin, 2006). It can also be used in any situation where the OLS method is applicable. While employing the least square regression, some outliers can be found in the dataset. In this study, as the dataset comes from a similar group of people, excluding the observations from the dataset may cause bias in the results. Hence, we have decided not to exclude the observations

3.6.1.6 The Ordinal Logit Model

The ordinal logit model is an extension of the binary logit model where the outcome variable is 0 and 1. This model is also known as proportional odds models. This model is based on a parallel regression assumption or proportional odds assumptions. It assumes that the coefficients are identical across all categories of the dependent variables. The mathematical formula of ordered logit model is as follows:

$$logit\ p_1 = \log \frac{p1}{1-p_1} = \propto_1 + \beta'\ x$$

$$logit\ (p_1 + p_2\ ) = \log \frac{p_1 + p_2}{1 - p_1 - p_2} = \propto_1 + \beta'\ x$$

$$logit\ (p_1 + p_2 + \cdots +\ p_k) = \log \frac{p_1 + p_2 + \ldots + p_k}{1 - p_1 - p_2 - \cdots - p_k} = \propto_k + \beta'\ x$$

$$p_1 + p_2 + \ldots + p_{k+1} = 1$$

It is evident from the above equations that there is an arithmetic sequence of these logarithmic form.

In addition to the above-mentioned analytical technique, we also used Exploratory Factor Analysis (EFA) and Principal Component Analysis (PCA) based on the theoretical assumptions. The justification is provided in Chapters 5 and 6.

3.7 Chapter Summary

This chapter discussed the theoretical underpinnings to initiate the settings of the analysis on the three important well-being aspects of RMG workers. A conceptual framework was presented that shows the three concepts of well-being. While the first objective has taken into account the human capital theory, the second and third objectives considered two concepts of the capability approach, namely well-being achievement and agency freedom. This chapter also presented the socioeconomic characteristics and descriptive statistics of other variables. As the analytical techniques, we used OLS, logistic regression, probit model, robust regression and ordered logistic regression throughout the thesis. We have chosen such methods based on the nature of the dependent variables. It is important to mention that in the next analytical chapters, we perform the appropriate tests for each regression analysis. In addition, to check the robustness of the results, we report the results using different methods. The description of the independent variables is discussed in the subsequent chapters. Moreover, the descriptive statistics, particularly of married women workers are shown in Chapter 6.

CHAPTER 4: DETERMINANTS OF EARNINGS AND GENDER EARNINGS GAP AMONG READY-MADE GARMENT WORKERS

4.1 Introduction

This chapter examines the relationship between earnings and human capital variables as well as other labour market variables. Although considerable work has been done to examine such a relationship, this chapter will provide a more innovative way of understanding the earnings determinants of low-pay and low-skilled workers. In the context of low pay workers, enhancing the individuals' capacity to succeed in the labour market is a major objective of their families and the policy makers of the country (Bowles, Gintis, & Osborne, 2000; Bowles et al., 2001) and hence, there is a sense of urgency among those who have been receiving low earnings in recent years. This is because, it is a well-established fact that human capital plays an important role in determining the earnings of the individuals (Becker, 1964; Mincer, 1974).

Absar (2012) opined that in most cases labour earnings is the major source of income and determinant of economic well-being for unskilled workers in developing countries. One's income, salary, pay, wage, or earnings is a fundamental part of one's well-being because the amount that one brings in from one's hard work or labour, can determine how well that individual and his/her family is going to live. By taking part in the labour market, individuals can enhance their economic well-being thus, the quality of the country's human capital is improved. According to Healy and Côté (2001), human capital refers to "the knowledge, skills, competencies, and attributes embodied in the individual and these facilitate the creation of personal, social, and economic well-being for the individual" (p.18). Human capital plays an important role in a country's development and so the

earnings of the individuals who partake in the labour market, can affect their livelihood which can ultimately improve or deteriorate their material living conditions.

In the competitive labour market, the economic progress of the country largely depends on the strong base of its human capital factors such as education, skills, competence, and professional training (Bhatti, 2012). However, people who are low-skilled and possess low level education do not have enough access to resources to acquire the necessary values that can improve their human capital status. As a result, they are not able to generate sufficient financial means to improve their material living conditions. According to Lucas Jr (1993), "The main engine of growth is the accumulation of human capital—of knowledge—and the main source of differences in living standards among nations, is the difference in human capital" (p. 270). Based on this, there should be a move made towards investigating the factors that may motivate or increase investment in human capital, both at the individual as well as firm level. By empirically examining the relationship between earnings and human capital variables, findings may lead to a better utilisation of the scarce resources of the individuals and their households. Indirectly, this can then contribute to an increase in earnings among such workers, thereby enhancing their economic well-being as a whole.

Kapsos (2008) stated that it is the fundamental goal of labour economics to understand the factors that affect the wage an individual receives in exchange for his/her labour. As earning is directly related to material well-being, understanding the factors that influence the earning level is a vital issue for a country and the individual as well (Free, 2010; Kapsos, 2008). More often than not, increased earnings help to improve the material well-being of the individual. This circumstance can act as a stimulus for one to enjoy good health, affordable housing, and most importantly, a better living standard. Furthermore,

the earning determination mechanism can also provide useful evidence for the relevant parties to better understand how investments can be made to boost the earnings of such workers. Kapsos (2008) also emphasised that understanding the determinants of wage is more important for LDCs than for developed countries. This is because an understanding of the earnings determinants is important and essential in reducing and minimising poverty. In addition, as women constitute a major labour force of the RMG industry, it is important to identify whether any earnings or wage differences exist so that governments can initiate proper and suitable policy measures to maintain wage equality for both genders.

The proper allocation of resources can bring out societal benefits through adequate investments which can be used to improve the human capital of poor people, particularly the RMG workers. Existing works (Card, 2001; Hyder, 2007; Nasir & Nazli, 2010) seem to focus mainly on the developed world (Card, 2001) while among the studies that emphasised on Bangladesh as well as other developing countries and LDCs (Hyder, 2007; Nasir & Nazli, 2010), many seem to have overlooked the importance of the RMG industry (Asadullah, 2006; Kapsos, 2008; Kolstad, Wiig, & Moazzem, 2014). These studies (as cited above) have either used the potential experience of the workers being investigated as a measure of their labour market experience or age as a proxy of their experience. These raised questions because when age is used as a proxy to measure the labour market experience, it takes on the assumption that one starts working in the labour market at the age of one. It seems evident that this measurement cannot capture the actual effect of the labour market experiences on the workers' earnings. Moreover, wage employment does not depend on the age of an individual since there are other factors such as education, individual skills and availability of jobs to consider. Therefore, this estimate may yield a biased result in the effort to examine the relationship between earnings and experience.

Studies which have employed the potential experience (Age-years of schooling-6) in line with the Mincer earnings equation, may produce biased results for a number of reasons. Firstly, it is not uncommon in developing countries and LDCs that an individual is not able to start schooling at the age of 6. In this case, the factor of Age-years of schooling – 6, is likely to create a partial estimate of the potential experience of the worker. Secondly, in developing countries and LDCs, compulsory education starts at the age of 6 but many individuals from a low-income background may not necessarily join school at this age. A gap can exist to affect their earnings. It is also noted that when countries, particularly the LDCs, are still lagging behind in their aim to achieve the 100 percent literacy rate, it is not reasonable to assume that the target population had attended school at the age of six (6). Studies that have used the age factor as a proxy and subsequently, potential experience, had mostly relied on national datasets where actual labour market experience was not captured. In the current study, the actual labour market experience of the RMG workers were given emphasis. In doing so, the past and present experiences of the workers were added to measure their actual experience in the RMG industry. It is important to mention that in the samples, not all the respondents had acquired past experience, thus where this occurs, only their present experience was considered as the labour market experience in the RMG industry. Blau and Kahn (2013) had highlighted that using potential experience is problematic because if a person was not employed consistently during his/her adulthood, the gap can cause serious measurement errors which then leads to the production of a biased estimate while calculating return to experience in relation to earnings. It is to be noted too, that in a labour-surplus country, it is not reasonable to assume that people start earning at the age of 18 (considered as an adult). Moreover, the unique dataset of the current study could also be used to measure the respondents' actual experience. This may lead to a biased estimate of the regression results and only few

studies have not taken this problem into consideration (for e.g. Asuyama, Chhun, Fukunishi, Neou & Yamagata, 2013; El-Haddad, 2011; Huynh, 2016). In the current study, the respondents' actual experience which was not computed using age minus years of schooling minus 6, was taken into account.

Therefore, this chapter contributes to the growing body of knowledge by providing empirical evidence that were gathered from LDCs and focused on a particular industry to support the human capital theory. Furthermore, using the actual experience instead of potential experience or age as a proxy for experience extends on the human capital theory as well as the Mincerian earnings function.

4.2 Literature Review

A large number of empirical literatures were reviewed to identify the determinants of earnings or wages, in the context of developed and developing countries. Based on the human capital theory, Mincer (1974) developed the earnings function which is often deployed to examine earnings determinants. By using the human capital theory as an approach for the current study, this section will firstly, focus on the empirical literatures related to the Mincerian wage equation, human capital theory and earnings or wage determinants in general. Secondly, it deals with the human capital theory and wage determinants from the perspective of Bangladesh. Thirdly, it reviews the relevant literature on gender earnings gaps.

4.2.1 Determinants of Earnings

Literature has already documented that earnings may not be dependent on the ability of workers. Other individual characteristics, such as experience and gender have been found to correlate with wages or earnings. The Mincerian wage equation and the human capital theory have been used extensively in literature to identify the determinants of wage or

earnings so as to estimate the return in education. (Ackah, Adjasi, Turkson, & Acquah, 2014). Mincerian wage equation and human capital theory have been used extensively in the literature to identify the determinants of wage and estimate the return to education.

In their study, Behrman, Wolfe, and Blau (1985) found that return to schooling is higher among women than men in Nicaragua. They used the Mincerian wage equation separately for both men and women with three categories of location: urban, rural, and metropolitan areas. Besides the human capital variables, they also included migration, health and nutrition as controlled variables. Their study was based on stratified sampling and the population was randomly selected, focused on the whole labour market.

Using the national representative data of Pakistan male earners and deploying the OLS method, Shabbir (1994) confirmed that earnings act as a function of schooling and potential experience. It also used control variables such as urban and rural area, occupational category, and employment status were added. It was found that there were inter-regional disparities of earnings.

A study carried out by Wannakrairoj (2013) on Thai individuals also deployed the Mincerian wage equation and the outcome revealed that a significantly positive relationship exist between education and potential work experience with wages. It was also revealed that urban labour market was more responsive than rural labour market, when one additional year of schooling and experience was added.

Using data from the Current Population Survey (CPS) of the United States and wage regression for analysis, Constantine and Neumark (1996) observed that various types of training in the 1980s favoured the better educated and experienced workers. It was also observed that training was associated with higher wages. Training was also more

prevalent among the better educated and experienced workers. In contrast, Sørensen and Vejlin (2014) utilised a sample of the Danish male labour force who have full-time employment in the private sector. They found no evidence of the human capital model.

A study of wage determinants was also conducted by (Kawashima & Tachibanaki, 1986) when they examined the wage determinants and wage differentials for Japanese male and female workers. They compared the competitive and non-competitive sectors and found different results based on the workers' sex, occupation, and sector. Their variables include education, length of service, age, and firm size. While the impact of a return to education on earnings was the same for all the groups, treatment of the length of service and age was significantly different for male and female employees. The study also revealed that human capital variables such as education and experience (length of service) were higher for women than for men even though the mean wage for women was lower than for men in the competitive sector. In this study, tenure was treated as a proxy of experience in the labour market. The authors explained that the gender wage differentials was mostly rooted in the workers' characteristics while the sector differentials of wage was caused by firm size.

Using data from the Welfare Monitoring Survey of Kenya and deploying the OLS as an approach, Kabubo-Mariara (2003) came to the conclusion that education was the most influential factor of earning determinants for both males and females in Japan. In addition, demographic factors such as age and marital status also acted as the determinants of earnings, both in the private and public sector.

Tachibanaki (1996) used two kinds of empirical estimation to identify the determinants of earnings. One form of estimation relied on the pure human capital (HC) theory while the other form of estimation did not follow the HC theory strictly, but instead, used the

ad hoc statistical approaches. Likewise, Kabubo-Mariara (2003) also identified the variables used in the ad hoc approach which include gender, firm size, age, tenure, union status, and location. He further added education, working hours and bonus. Consequently, it was observed that sex, age, tenure, firm size, and education determined the wages of the Japanese workers.

From the UK perspective, Coleman (1998) used the datasets of the New Earning Survey gathered from United Kingdom with a view of analysing the effects of tenure on the earnings of male and female workers. The theoretical motivation of the study was human capital theory and Mincer's earning function. It was found that tenure affected the earnings of the women workers more than the men workers.

Using the datasets of the Portuguese Ministry of Employment, Machado and Mata (2001) deployed quantile regressions to examine their outcome. Their variables include gender, education, experience, tenure, firm size, ownership status, and industry indicators. Their study revealed that years of schooling were positively associated with all the quantiles but mode was valued for highly-paid jobs. They explained that wage inequality among workers occurred due to personal attributes such as education, experience, and tenure.

Oliver (2016) used the multivariate analysis with longitudinal datasets taken from Australian workers. The study considered age, tenure, and different levels of education as human capital variables. In addition, agreement type, industry type, and casual employment were also included to examine the effects of these variables along with human capital variables, in determining the wages. The study concluded that the human capital model cannot fully explain and illustrate the earnings determinants of the Australian workers. Instead, industrial institutions played a significant role in determining their earnings.

The human capital theory and the Mincerian wage functions are considered by researchers as a conceptual basis which can be used to identify the relationship between wage determination and return to education. It was revealed in the return to education literature that earnings were used as dependent variables while the number of years of schooling served as the main independent variable (Asadullah, 2006; Peet et al., 2015). While a vast majority of studies (Card, 2001) have focused on the wage determination of developed countries, few studies (Psacharopoulos, 1994; Psacharopoulos & Patrinos, 2004) had focused on developing countries. In an attempt to identify the return to education of 61 developing countries, Peet et al. (2015) noted that the association between years of schooling and income/earnings was almost similar for both the developing countries as well as the developed countries. The study concluded that a return to education varied, depending on the regions, countries and residential location. Return to education was also higher among female employees, especially in the urban areas.

Buchinsky (2001) used the US Population Survey of different years and the quantile regression to examine women's return to education. Although the survey contained the data of working and non-working women, the study used the data of the working women to identify the relationship between earnings and the number of years of schooling. The return to education increased among those in the younger group but not for the older group. In the beginning of the sample period, a return to education was higher for the lower quantiles and higher for the higher quantiles, at the end of the sample period.

Using the Mincerian wage function, Shabbir (1994) merged the datasets of Population, Labour Force and Migration Survey (LFMS) and Household Income and Expenditure Survey (HIES), to examine the earnings of male respondents. Both the 'strict' Mincerian wage function and its 'extended' form were applied. The 'strict' function considered the

number of years of schooling and relevant experience along with the square form as independent variables. This revealed that return to education was at eight percent. In the extended form, dummies such as urban and rural areas, different residential areas of Pakistan, employment status as well as different occupational groups were included. This form revealed that after controlling the variables for provincial dummies and occupational groups, the return to education decreased by about 12 percent and it was noted that there was a positive and significant relationship between earnings and living in urban areas.

Another study looking at Pakistan's labour force was conducted by Nasir and Nazli (2010). Likewise, they supported that the number of years of schooling and relevant experience have profound and significant effects on the individuals' earnings. They also illustrated that males earned more than females and that earnings were higher in the urban areas than in the rural areas. The study concluded that higher earnings were associated with higher levels of education, the effects of literacy and numeracy skills, technical training, and private schooling. These aspects were associated with one's earnings positively and significantly.

Barnet-Verzat and Wolff (2008) employed the Mincerian function to examine gender-based wage differentials and they focused on French executives working in a French company. Using mean and quantile regressions, they revealed that the level of education, experience (they used age as a proxy), and job position were positively and significantly related to wage determination. They also showed that women earned less than men.

Baffour (2013) carried out a study to ascertain the determinants of wage by using the datasets of the Urban Household Workers Survey of Tanzania and Ghana. The study applied the OLS and quantile regression method. The instrumental variable technique and Hackman's sample selection correction were used to resolve the endogeneity issue that

arose from the omitted sample selection and variable bias. The study concluded that there was a convex relationship between education and earnings, particularly in the private sector. It appears that more educated persons earn more than those who were less educated. The study also revealed that tenure has a significant relationship with earnings for both countries although these were not significant in all the quantiles. Firm size was also found to be significant in the OLS and in all the quantiles for both countries. Nonetheless, this study had divided the education level into three different categories: primary, secondary, and tertiary. While all the three levels of education were found to be significant for Tanzania in all estimations, only the primary level education was not found to be significant except for 75 percent of the quantiles. It was further shown that the effect of education was considered as a continuous variable (number of years of completed schooling) and it was significant for those in the self-employed, public, and private sectors of Ghana and Tanzania (using the OLS and quantile regression). Using females as a reference category in the case of Ghana, the outcome showed a significant relationship but not for Tanzania. Therefore, the context of a country plays a vital role in wage determination.

Ackah et al. (2014) used the Household Survey data of Ghana. They found a non-linear relationship between earnings and experience. The study also showed that return to education was higher among those who had completed their secondary schooling and that females earned seven 7 percent less than their male counterparts.

Focusing on the urban informal sector and using a sample size of 325 respondents, Gillani, Khan, and Faridi (2013) revealed that the number of years of schooling, age, training, marital status, weekly working hours, and the household value of assets, were positively and significantly associated with earnings. Moreover, using ‘males’ as the

reference category, they concluded that there was a positive and significant relationship between males and earnings, in the informal sector.

Blau and Kahn (2013) used the longitudinal data of the Michigan Panel Study of Income Dynamics and Westat Survey (a survey conducted to supplement the PSID data) to investigate the feasibility of including actual labour market experience in the National Datasets. The study revealed that the data retrieved from actual experience is useful for the purpose of analyzing the gender-based earnings gap so as to understand the other dimensions of the gap which include race, education. The study considered the population of those above 18 years old to measure their actual work experience for both men and women. It was found that the return to actual experience is higher when compared to using potential experience in relation to wage determination.

4.2.2 Determinants of Wage/Earnings in Bangladesh

As stated earlier, Becker (1964) and Mincer (1974) provided the analytical foundation for others to apply when identifying the determinants of wages/earnings. Variables that have been widely used to examine the wage determinants include age, education level, schooling quality, work experience, and occupation, among others. (Psacharopoulos, 1994) note that literature emphasising on wage determinants in the context of developing and LDCs are scant. Therefore, this study aims to minimise the gap in knowledge and to make significant contributions towards the current literature of wage determinants by focusing on the context of developing countries and LDCs.

Rahman (2004) utilised the Labour Force Survey of Bangladesh to examine earnings determinants. He found that age was positively associated with earnings. However, this association diminishes over time. Further to this, human capital variables such as education and skills were also found to be positively related to earnings but the returns

were greater in urban areas than in rural areas. The study also noted a significant relationship between land ownership and regular employment. As far as the sector dummies were concerned, only professional services showed positive and significant coefficients.

Adopting the Becker-Mincerian human capital earnings function, data collected from the Household Income and Expenditure Survey were also examined by Asadullah (2006). The study discussed that an additional year of schooling increases labour market earnings by seven percent. The study estimated the return to education separately for the urban and rural areas and for males and females. It was able to come to the conclusion that return to education was lower in the rural areas and higher among females.

Using a unique dataset and deploying a two-stage least-square method with two instrumental variables such as father's and mother's education background, Kolstad, Wiig, and Moazzem (2014) revealed that return to education was higher when fathers' education background was used as an instrument. This study used the Mincerian function as a conceptual basis but it used the log profit as a dependent variable since the objective of the study was to identify the return to education among entrepreneurs and firms in Bangladesh.

In another study, Al-Samarrai (2007) used data from the Household Income and Expenditure Survey of 2000 and 2005 to estimate the wage determinant function for males and females. The dependent variable was the hourly-log wages. The study documented that experience (used age as a proxy for labour market experience) in the labour market increased wages in both years. In 2005, it was found that males and non-Muslim workers received 13 percent less earnings than Muslim earners. Interestingly, this study also found that employees from urban areas earned less than those from rural areas,

in contrast to previous findings (Asadullah, 2006). In his deduction, Kapsos (2008) note that previous studies of Bangladesh had identified education, age (experience), occupation, geographic location, skill level, and land ownership as determinants of earnings.

To summarise, this section has presented the empirical works of earnings determinants in the context of developed and developing countries. As discussed, there is only a small number of literature that had focused on earnings determinants in the context of the LDCs while to date, no study had examined earnings and its determinants in the context of RMG workers. There is also a scarcity of empirical works focusing on the implications of the human capital theory and wage determination of low-wage workers while existing works that have studied the relationship had mainly considered experience as age minus six minus schooling which may not be true for most RMG workers as there are workers who had never attended formal schooling in their entire life. Further, previous studies had used potential experience or age as a proxy for experience while a few studies have taken into account the actual experience (Blau & Kahn, 2013)(Blau & Kahn, 2013)(Blau & Kahn, 2013)(Blau & Kahn, 2013)(Blau & Kahn, 2013) for the US population (Blau & Kahn, 2013) and for the Garments.

4.2.3 Gender Earnings Gap

This section discusses the literature of gender earnings gap.

Looking at the US labour market, Blau and Kahn (1994) revealed that the earnings gap had dropped between 1975 and 1987. They concluded that this happened either due to the unmeasured characteristics of the female workers or there was a decline in the gender based discrimination.

As the pioneer, Mincer (1958) showed that occupations that offer higher earnings had shorter working life as these kinds of occupations require more schooling and training. It was thus concluded that time spent on education and training varied among occupations. Literature reviewed seem to carry different views on the causes of gender earnings differentials. For instance, Becker (1985) mentioned that married women generally look for a job that is less demanding than what their human capital qualifies. This is because motherhood is effort intensive. Heckman (1998) suggested that discrimination may not be the sole reason that contribute to the earnings differentials. It was suggested that other human capital variables may be responsible.

According to Macpherson and Hirsch (1995), the gender earnings differentials could be lower if job tenure, part-time proportion, occupational training requirements, hazards and physical and environmental conditions were included in the model. Tam (1997) also suggested that the duration of a specialised training in different occupations and industries along with some human capital and demographic variables may be suitable to explain the earnings gap that exist between genders and races.

According to the devaluation theory, occupational segregation based on gender is one of the characteristics of gender inequality (Bergmann, 1974). It was also argued that women's lower social status, when compared to men tend to create that crowding out effect against female workers in the labour market. There are two reasons that could cause female workers' earnings to be lower than male workers. Firstly, the over representativeness of females in certain occupations had created a surplus of female workers. Secondly, females were forced to engage in jobs that were unrepresentative of their qualification which resulted in lower earnings than what they were entitled to.

Over the years, researchers have investigated the problems of earnings discrimination and the causes that attributed to the gender differentials in the labour market. Webb (1891), however, noted that gender earnings differences happened not because males produced more than females but because the labour market usually underestimates the importance of females. He mentioned that this inequality can be eliminated by improving women's level of education. The rational expectation model of Mincer (1958) used for predicting inequality had shown how the individuals' differences in human capital investment affected income inequality. Becker (1971) modelled the discrimination based on personal tastes, either in favour of a particular group of people or against a group of people. This is known as the taste-based discrimination. This model is able to show that as a result of the preference of white people against black, some whites preferred white labour. Consequently, black people were forced to take up the jobs which were lower in pay but the tasks involved were equal (Becker, 1971).

Fuchs (1971) analysed the US census data of 1960 and it documented that on average, female workers earned only 60 percent of the male workers' wages. It was observed that the wage differentials was highest among self-employed workers and lowest among government servants. It was further noted that in the male dominated industries, females earned more than what the males tend to earn. Fuchs (1974) pointed out that the main reason for the gender wage gap was not because of discrimination but due to the different roles played by the male and female workers in the sector.

Nakavachara (2010) found that gender earnings gap declined from 1985-2005 in Thailand. It was further revealed that an increase in female education and changes noted in unobserved factors were the two main reasons behind the decline of the gap in Thailand. Both the parametric and non-parametric approach were used as the analytical

method and both the results corroborated with each other. The findings indicate that gender earnings gap had declined over the period of time in Thailand.

Kolesnikova and Liu (2011) observed that the gender wage gap had decreased significantly over the last 30 years. It was also pointed out that the mere comparison of median weekly earnings of men and women cannot provide a complete picture of such gaps for two reasons. Firstly, women tend to work fewer hours than men. This would result in earnings gap even though their hourly earnings may be similar. Secondly, educational attainment and attachment to labour force can also lead to such wage differences. Researchers (Kolesnikova & Liu, 2011) have argued that the actual gap could be much lower than the raw wage gap when comparisons are made between male and female workers who possess similar characteristics

A similar study conducted by Ñopo, Daza, and Ramos (2011) discovered that job characteristics and socio-demographic factors were the two major reasons contributing to gender wage difference. Their data comprised the household survey of 64 countries. While earnings gap is prominent in South Asia and Sub-Saharan Africa, the unexplained gap was most visible among part-time workers and workers with low level education.

The status of women workers in terms of labour force participation, educational attainment and earnings in relation to men were examined by Hossain and Tisdell (2005). The study revealed that even though women were largely engaged in low skilled jobs, their involvement in high skilled jobs were also increasing. The study thus conclude that in general, the wage differentials had actually reduced in many industries and countries but gender earnings gap still persist in mainly South Asia.

Kapsos (2008) utilised the dataset of the Bangladesh Occupational Wage of 2007. It was found that women earned an average of 21 percent less per hour when compared to men. The largest wage differentials were noted in the hotels and restaurants and construction industries and among workers with low education level. It seems that the gender based occupational segregation tend to increase the gender wage gap in those industries which encompass construction, financial intermediation and manufacturing industries. Nonetheless, this mitigated the gender wage gap in the education sector, hotels and restaurants and other services industries. The study concluded that the largest gender gap appeared among illiterate workers while the second largest gap was observed among workers with less than primary school education.

Akter (2005) attempted to analyse the occupational segregation and gender discrimination in the rural labour market of Bangladesh. It was documented that job discrimination within the sector was the prime cause of wage gap (70%). Using the dataset of Labour Force Survey (LFS) of Bangladesh from 1999-2000, S. Ahmed and Maitra (2010) examined the extent of gender earnings gap, for rural and urban areas in Bangladesh. The authors observed that gender wage differences was larger in urban areas than in rural areas. A substantial amount of such differences was the outcome of discrimination. Nonetheless, they stated that without the sample selectivity correction, this can lead to a significant under estimation of gender earnings gap in the urban as well as rural areas in Bangladesh.

Vecchio, Scuffham, Hilton, & Whiteford, (2013) utilized the sample of 10,066 Australian full-time employees in Australian health sector. The study deployed OLS and O-B approach to identify the gender wage gap. The study was revealed that adjusted wage gap of 16.7 percent.

Using the B-O method, Ahmed and McGillivray (2015) deployed the Bangladesh LFS dataset of 1999, 2005, and 2009 to observe the wage gap decrease during this period of time. They also used the wellington method of decomposition to examine whether the gap had been reduced at the mean wage/earnings in the same period of time. It was revealed that the discrimination against women had declined more in the lower income quantiles than in the upper quantiles which had increased, in contrast. In this particular study, the gap in the productive characteristics of the upper quantiles group had narrowed over the years. It was also observed that the wage gap in the manufacturing sector had also decreased in the same period. However, the main factor that had contributed to the decline in the gap was the female workers increased educational attainment. Clearly, the pattern of occupational distribution between males and females, had caused the gender wage gap.

An attempt was made by Abras (2012) to investigate the textile and garments (T&G) industry trends before and after the MFA in regard to gender wage differentials in Bangladesh, India, Pakistan and Viet nam. The study revealed that the return to education increased in all countries except India in post MFA period. Moreover, while the gender earnings gap increased in Bangladesh and India, the gap decreased in Pakistan and Viet nam. The study concluded that in Bangladesh women received 15.8 per cent wage premium in relation to men and in other countries a relative wage penalty that ranges from 21.5 per cent in Viet Nam (2008) to 40.3 per cent in India (2007) to 63 per cent in Pakistan (2008) was found.

Robertson (2011) used the household data from the Cambodia socio-economic survey and examined the changes in wages in Apparel industry from 1996 to 2007. He used Mincerian wage function as an analytical method. The study found that sex, age,

education and hours of work are strongly correlated with wages and showed there was a substantial development in female earnings in that period. Moreover, it also revealed that there was a considerable increase in wage premium in the garments sector. While it was 6.4 per cent in 1997 and it became 41.2 per cent in 2007.

Asuyama et al., (2013) used a survey dataset collected in 2003 and 2009 to examine the dynamics of firms in garments industry in Cambodia. The study reported that the relative wage of operators and helpers (low skilled) increased compared to high skilled workers. It also revealed that marginal female wage penalty of only less than 4 per cent in 2008. This study also used actual experience rather than potential experience.

Fontana and Silberman (2013) used a sample of 2,578 garments workers from 98 factories in Viet nam. While tertiary education appeared as a strong predictor of wages, lower education had a weaker effect. Using the *t - test,* the study concluded that work experience in the factory, training and hourly payment are the prominent determinants of earnings.

A study was carried out by Akram and Kashmir (2015) on textile and clothing sector of Pakistan and found that as a consequence of lower output produced by women workers due to poor working environment, women earn less than men. And in garment sector, the payment rate is dependent on the number of piece produced which consequently forces workers to work excessively. Therefore, long working hours make them fatigue and require reworking in most cases which is not compensated by the employers. Hence, this study concluded that there is an inherent disadvantageous position of women in terms of pay scheme. This study is a based on the reviews and interviews of experts in textile and clothing sector.

El-Haddad (2011) utilized a dataset comprises of 275 enterprises and 5,383 workers of textile and clothing (T&C) sector in Egypt. The study revealed a 29 per cent gender wage gap. While 70 per cent of this wage differences attributed due to differences in education and experience, women's segregation in lower paid jobs and lower paid firms were also found as the causes of such wage gap.

It has already been documented in the literature that in Bangladesh women garment workers earn only 58 per cent of a male worker's earning (Paul-Majumder & Begum, 2000). Particularly, a female worker could earn about 66 per cent of an average male worker's earnings in 1990, and about 59 per cent in 1997 (Paul-Majumder & Begum, 2000). Another study found that women in the RMG industry earn significantly lower than men even though possess the same education and experience (Paul-Majumder & Zohir, 1993). In addition, men earn 41 per cent higher than women.

Huynh (2016) examined the gender pay gap in the garments, textile and footwear (GTF) industry in Bangladesh, Cambodia, India, Indonesia, the Lao People's Democratic Republic, Pakistan, the Philippines, Thailand and Viet Nam. Interestingly, it also revealed that men earn more than women in garments industry in Bangladesh and vice versa for other eight countries. The study also found that the adjusted wage gap is lower in garments industry than the economy as a whole except in Cambodia, India and Pakistan. As an analytical techniques, the study used O-B decomposition method. They used actual experience for Cambodia, Indonesia and Viet Nam for the GTF industry.

To summarize, this section has presented the empirical works of earnings determinants and gender earnings gap in the context of developed and developing countries. As discussed, there is only a small number of literature that had focused on earnings determinants in the context of the LDCs while to-date, a few studies had examined

earnings and its determinants in the context of RMG workers. There is also a scarcity of empirical works focusing on the implications of the human capital theory and wage determination of low-wage workers, while existing works that have studied the relationship had mainly considered experience as age minus six minus schooling which may not be true for most RMG workers as there are workers who had never attended formal schooling in their entire life. Further, most of the previous studies had used potential experience or age as a proxy for experience while a few studies have taken into account the actual experience (Blau & Kahn, 2013)(Blau & Kahn, 2013)(Blau & Kahn, 2013)(Blau & Kahn, 2013)(Blau & Kahn, 2013)for the US population (Blau & Kahn, 2013) and for the GTF industry (Huynh, 2016) and the garments industry (Asuyama et al., 2013). However, it can also be said that discrimination based on gender is prominent in South Asian and Sub-Sahara African countries. In Bangladesh, it seems evident that women commonly engaged in low skilled jobs and in different industries; they also tend to earn less than men (Ahmed & McGillivray, 2015). Their surplus supply was one contributing factor but this wage gap seems to be declining on a gradual and consistent pace.

Despite the claim that there was a gender earnings gap in the RMG industry (Paul-Majumder & Begum, 2000), we found only one study by Huynh (2016) based on the RMG sector and hence, there is a lack of literature that provides the empirical evidence on the gender earnings gap. Moreover, while studies based on the whole labour market of Bangladesh (Ahmed & Maitra; Ahmed & McGillivray, 2015, Kapsos, 2008) and a study based on the T&G sector of Bangladesh (Abras, 2012) found that men earn more than women and there is a gender earnings gap, the latest study found the opposite (Huynh, 2016). Therefore, the literature also produced mixed results which is not conclusive. Therefore, it is still uncertain if a gender earnings gap still prevails in the

RMG industry as of today and if so, to what extent is the gap caused by discrimination or any other factors.

4.3 Analytical Framework

The analytical framework used for this study is based on both the theoretical backgrounds derived from the human capital theory, the Mincerian wage equation and empirical literature. The framework is illustrated by Figure 4.1.

According to the analytical framework, the basic Backerian-Mincerian earnings functions where earnings is a function of years of schooling and experience and experience square, were estimated first. Following this, the other labour market variables derived from the literature, such as training dummy, working hours per week and job category were added. After this, the demographic characteristics such as gender, age and marital status were added as control variables. In the next equation, the household characteristics including years of schooling of the household head and family size were added as control variables and the district dummy used was based on the location of the factory.

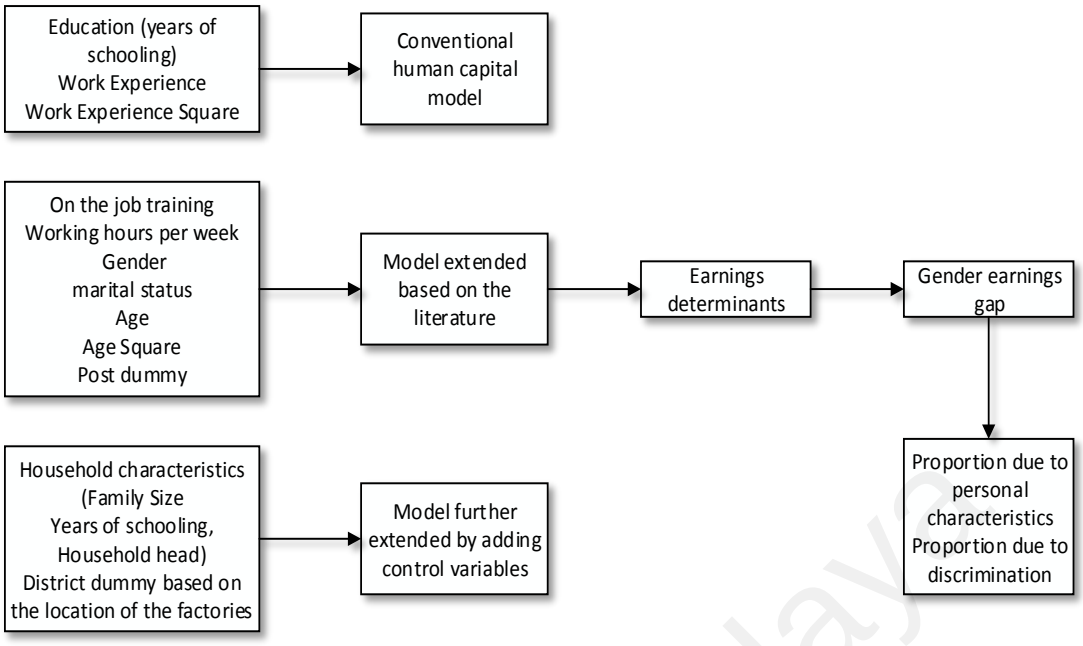

Figure 4.1 : Analytical Framework

4.4 Methodology

The OLS method was deployed to examine the earnings determinants of the RMG workers. To do this, the diagnostic test was run first to check the distribution of the residuals. The Shapiro-Wilk *W* test (see Appendix-B) rejected the null hypothesis of the normal distribution. The distribution of residuals was also checked by plotting a histogram and it was found that the residuals were normally distributed (Appendix-C). Therefore, the OLS regression was used throughout the analysis.

In the next stage, the concern of a possible heteroscedasticity was addressed as it violated the assumption of the OLS. Although heteroscedasticity did not cause bias or inconsistency in the OLS estimators, it caused inefficiency. However, one of the important assumptions of the OLS is that the variance of the error term should be constant (Williams, 2015). Hence, it posits the idea of homoscedasticity where it implies that if the variance of the error term was not constant, the heteroscedasticity could arise. The

presence of the heteroscedasticity violates the classical assumption of the OLS, that is, the estimates are no longer Best Linear Classical Estimator (BLUE). Thus, the heteroscedasticity was checked via the Breusch-Pagan/Cook-Weisberg test (see Appendix-D) which showed the evidence of the presence of heteroscedasticity. The Breusch-Pagan/Cook-Weisberg test was used to assess the null hypothesis which state that the error variances are all equal versus the alternative that the error variances are a multiplicative function of one or more variables. This test showed a chi-square of (*Chi2=6.01*) and the *p*-value was less than 0.05 (*p=0.014*) which further indicate that there is a problem of heteroscedasticity in the model. Hence, to obtain the unbiased coefficients, the robust standard error was then used for the estimation.

It was estimated that the traditional Mincerian earning function where the years of schooling were considered as education and experience and experience square would be taken as labour market experience in the RMG industry. Studies looking at developed countries in recent years have focused on the issue of endogeneity problem, with schooling noted as a variable that may arise due to some observed and unobserved covariates of the earnings, such as innate ability, motivation and individual taste for education. Other studies, in particular, have focused on resolving the endogeneity issue of schooling. In order to resolve the issue, the instrumental variable (IV) such as average years of schooling in the family or schooling of father and mother, were used in non-experimental studies (Bhatti, 2012; Trostel, Walker, & Woolley, 2002). In these studies, various institutional reforms or features of the education system were used as instruments since these changes play a role in determining the minimum school-leaving age (Harmon & Walker, 1995). This study did not use the IV strategy. Instead, it relied on the OLS estimation because studies that had overcome the endogeneity problem using the IV technique had suggested that the direction of bias in OLS is mostly downward (Baffour,

2013; Card, 2001). In addition, some studies (Asadullah, 2006; Richard, 2007) used the Hackman selection model to correct the sample selection bias which would consider the sample as a non-random one. It also takes the assumption that non-working population is included in the sample concerned. The sample for the current study comprise the RMG workers and those who are involved in wage employment. Sampling was selected following the random sampling method which have been justified in previous sub-sections.

4.4.1 Specification of Model

The natural logarithm of earnings was taken into account in line with Mincer's earnings function. It is important to mention that the Mincerian potential experience formula, which is age minus years of schooling minus 6 (X = A - S - 6) and where it is assumed that a person starts school at age six, finishes S years of schooling in exactly S number of years was not used in this study. However, the past and present experiences of the RMG samples were added and used as a measure of their actual experience.

$$lnearnings_i = \alpha_i + \alpha_1 edu_i + \alpha_2 exp_i + \alpha_3 exp^2 + \varepsilon_i \ldots. (4.1)\ i = 1, \ldots, n$$

Where $lnearning_i$ represents the monthly wages and bonus of the workers. Wages were distributed on a monthly basis and the bonus given were also included as yearly festive bonus, a yearly occurrence. This was divided into 12 monthly segments. edu_i is the completed years of schooling of the male and female workers. $exp_i\ and\ exp^2$ denote the working experience in the RMG industry and square of the experience. Equation (4.1) is estimated using the OLS regression method. The aim was to see the effects of other labour market variables that have been used in previous literature. Thus, the equation was expanded as follows:

$$lnearnings_i = \alpha_i + \alpha_1 edu_i + \alpha_2 exp_i + \alpha_3 exp^2 + \alpha_4 ojt_i + \alpha_5 wh_i + \varepsilon_i \ldots (4.2)$$

In the above equation, ojt_i is a binary variable that equals to one if workers received training after joining the RMG industry and otherwise as 0. *wh* represents working hours per week.

In addition, the equation was controlled by adding the categorical variable that represents the job category in the RMG industry and thus again expanded the equation as follows:

$$lnearnings_i = \alpha_i + \alpha_1 edu_i + \alpha_2 exp_i + \alpha_3 exp^2 + \alpha_4 ojt_i + \alpha_5 wh_i + \alpha_6 job\ category_i + \varepsilon_i \ldots (4.3)$$

Here, job category is a categorical variable where helper = 1; Operator = 2 and Supervisor = 3. α_i and ε_i are the constant and error terms of the equation.

In the next stage, the demographic characteristics were added, in line with previous literature and they include gender, marital status, age and age2 (Bhatti, 2012). According to Bhatti (2012), including other explanatory variables such as social, demographic, and regional factors with the wage equation has now become popular. Hence, the equation is expanded as follows:

$$lnearnings_i = \alpha_i + \alpha_1 edu_i + \alpha_2 exp_i + \alpha_3 exp^2 + \alpha_4 ojt_i + \alpha_5 wh_i + \alpha_6 job\ category_i + \alpha_7 gender_i + \alpha_8 age_i + \alpha_9 age^2 + \alpha_{10} ms_i + \varepsilon_i \ldots (4.4)$$

Other variables such as family size, highest educational attainment of the household heads were also added and a district dummy was used, based on the location of the factories as shown in equation (4.4). These were used as controlled variables. Therefore, the equation (4.3) was further expanded as follows:

$$lnearnings_i = \alpha_i + \alpha_1 edu_i + \alpha_2 exp_i + \alpha_3 exp^2 + \alpha_4 ojt_i + \alpha_5 wh_i + \alpha_6 job\ category_i + \alpha_7 gender_i + \alpha_8 age_i + \alpha_9 age^2 + \alpha_{10} ms_i + \alpha_{11} fmsize_i + \alpha_{12} hedu_i + \varepsilon_i \ldots (4.5)$$

In addition, the interaction terms among level of education, experience and OJT were also added to equation (4.5).

$$lnearnings_i = \alpha_i + \alpha_1 edu_i + \alpha_2 exp_i + \alpha_3 exp^2 + \alpha_4 ojt_i + \alpha_5 wh_i + \alpha_6 job\ category_i + \alpha_7 gender_i + \alpha_8 age_i + \alpha_9 age^2 + \alpha_{10} ms_i + \alpha_{11} fmsize_i + \alpha_{12} hedu_i + \alpha_{13} edu * exp_i + \alpha_{14} edu * ojt_i + \alpha_4 exp * ojt_i + \varepsilon_i \ldots (4.6)$$

4.5 Description of Variables

4.5.1 Dependent Variable

The dependent variable comprise the monthly earnings of the RMG workers. While Mincer (1974) used annual earnings as the dependent variable, there were a number of other studies (Bhatti, 2012) that considered monthly earnings as the dependent variable. In the current study, the data of the monthly earnings were collected directly from the respondents in order to yield better and more valid results. Moreover, in line with Mincer (1974), the study used natural logarithm of monthly earnings.

4.5.2 Independent Variables

Education

The major determinant of the human capital theory is the educational attainment of each individual. Education is considered as an important determinant of wage/earnings and a number of studies (Castex & Dechter, 2014; Lorenz & Wagner, 1993; Mincer, 1974) have used the number of years of completed schooling as an indicator for educational attainment.

Experience

The current study also added the past and present experiences together to measure the actual experience of the labour market particularly of those in the RMG industry. The labour market experience in the RMG industry was used in both the linear and quadratic forms. The multicollinearity problem of experience and experience square was also taken into account and hence, the variable experience (experience-mean experience) and the square term of the variable experience square had been centered. It should be noted that the working experience gained through apprenticeship and industrial training also play a significant role in determining the wages and earnings that individuals receive.

On the Job Training (OJT)

On-the-job training is another key variable of the earning function. The current study asked the question: 'Have you received training after joining the factory?' Here, training is considered as a formal on-the-job training provided by the Bangladesh Garments Manufacturer and Exporters Association (BGMEA) to enhance the productivity of the workers (BGMEA, 2016a). Workers who have received training from BGMEA are coded as 1 and otherwise as 0. This has been used as a dummy variable in the literature (Gillani et al., 2013; Kuckulenz & Zwick, 2000).

Gender

In terms of monetary differences in the labour market, gender has played a critical role. Bhatti (2012) documented that most studies of earning regression used gender to control the equation. The gender dummy has been extensively used in the previous literature on (Baffour, 2013; Bhatti, 2012; Kapsos, 2008) earnings equation. Due to biases or discrimination of a particular gender in the labour market as well as the skill differences between male and female employees, gender may affect earnings in an undesirable

manner. To determine whether there is a correlation for being a male or female worker in the RMG sector, the gender dummy [female = 1 and male = 0] was considered. For the purpose of this study, 'male' is used as the reference category.

Working hours

The number of working hours can affect the earnings of workers based on the assumption that the more the working hours, the higher the probability of earning more. Bhatti (2012) utilised this variable to estimate the wage equation for both the French and Pakistani workers and it was found that the number of working hours is an important determinant of wage. In this study, the number pf working hours per week was taken as an explanatory variable.

Marital Status

Several studies used this as one of the demographic variables that has an effect on earnings (Ahmed & McGillivray, 2015; Vecchio et al., 2013).

Job Categories

The sample of the current study comprise three sets of workers: Supervisors, Operators and Helpers. The term, 'job category' was used as a categorical variable based on the post in the factories.

Age and Age square

The current study further included a linear form of age and its quadratic form to control the equation. It is important to mention that the age was centred by using the formula (age-mean age) and the square of this was taken to see whether there is a concavity of age and age squared.

Control Variables

Household characteristics such as size of the family and completed years of schooling of the household head were used as controlled variables. In addition, district dummies were used to control the equation where factories were coded according to their locations with Dhaka as 1 and Narayanganj as 0.

Table 4.1 presents the definition and measurement of the dependent and independent variables. It also shows the expected signs of the independent variables.

Table 4.1: Definition of dependent and independent variables

Independent Variables	Definition	Expected Sign
Learnings	Natural logarithm of monthly wages and bonuses in Bangladesh Taka	
Education	Years of Schooling	+
Experience	Experience in the RMG industry in years	+
Experience2	Square of the main experience variable	-
Training	Dummy if received training = 1, otherwise =0	+
Gender	Dummy if female =1, male =0	-
Working Hours	Working hours per week	+
Age	Age in years	+
Age2	Square form of the main variable	-
Marital Status	Unmarried=0, married = 1; divorced = 2; widowed = 3	+
Job Category	Supervisor =3, Operator = 2 and Helper =1	+/-
Family size	Number of family members	+/-
Educational attainment of Household head	Years of schooling of the household head in years	+
District	District dummy Dhaka = 1; Narayanganj = 0	+/-

4.6 Results and Discussion

4.6.1 Full Sample Results

The study calculated the earnings function of the RMG workers. It estimated five equations to see the effect of other variables with the standard Mincerian earnings function. The multicollinearity issue was addressed before estimating the equations (4.1), (4.2), (4.3), (4.4), (4.5) and (4.6). Multicollinearity is a problem in a regression model. In the presence of multicollinearity among independent variables, it is difficult to distinguish the separate contribution of the explanatory variables (Willis & Perlack, 1978). The Variation Inflation Factor (VIF) and Tolerance Statistics (TS) were calculated. This can be found in Appendix - E. The pairwise correlation among the independent variables (see Appendix - F) were then computed. It is important to mention that we have deployed the centered approach in case of experience and experience square and age and age square to remove the multucollinearity.

The empirical strategy started with the estimation using the OLS method. The earnings functions for males and females were both estimated separately along with a model that comprises a pooled sample. The earnings functions were also estimated through the quantile regression method to show the robustness of the results. Baffour (2013) states that estimation yields acquired through the quantile regression are more informative as the effects of years of schooling and other covariates are shown to vary along the distribution of the dependent variable. It also examines how earnings vary with education, experiences and other labour market variables. Hence, to show the robustness of the results, the earnings functions in different quantiles (0.25, 0.50, and 0.75) were also estimated. It is noted that the 0.50 quantile provide the results of the median distribution of the dependent variable.

Table 4.2 shows the results obtained from equations (4.1), (4.2) (4.3) (4.4), (4.5) and (4.6). The first column shows the results acquired from the standard Mincerian equation where no controlled variables were used. The second column include variables that were derived from the literature. The third column includes the job category. The forth column includes demographic characteristics and fifth column includes controlled variables such as years of schooling of the head of a household, the number of family members and district dummies based on the location of the factories. The sixth column shows the results obtained after using the interaction terms among HC variables. The final model eventually shows a reasonably good fit of the data and the R square was found to be consistent with other studies (Al-Samarrai, 2007; Asadullah, 2006).

Interesting results were derived from the regression analysis. The first variable considered was education measured by the number of years of completed schooling, which has been used widely in wage determinants and return to education literatures. It was found that the expected sign of the years of schooling (education) variable was significant at the one (1) percent level in all the three models. Based on this, the standard human capital model found that one percent increase in years of schooling increases three percent earnings of the RMG workers. The equation was expanded by adding the labour market variables and it was observed that the coefficient value had not changed much. This implies that a one percent increase in the years of schooling increases earnings by about three percent. When the equation was controlled by using the categorical variable, job category, the coefficient value changed although it remained highly significant. It showed that earnings can increase by two percent when the education of the individual worker increases by one percent. In other words, the return to education is two percent for male and female workers in the RMG industry. The return to education variable was further reduced when the demographic variables were added as control variables. The outcome showed the

return as one percent with regard to the earnings of the workers. Finally, after the addition of the household characteristics and the district dummy, the results suggest that a one percent increase in years of schooling increases the earnings of the RMG workers by two percent. Thus, the coefficient of education decreases after controlling the equation. The interaction terms were then included among the human capital variables to see whether any joint effect persists with earnings. The return to education remained almost the same, that is, one percent increase of education contributes to a two percent increase in earnings. Although the expected sign of the education variable was obtained, it was found to be highly significant, the coefficient was lower than previous studies (Asadullah, 2006) which had mainly estimated the coefficients by considering the total labour market of the specific country. In contrast, the current study focused on a particular industry of a particular country. The findings noted from the current study also indicate that the coefficient was different from the earlier estimates of similar studies done in Bangladesh (for e.g. Asadullah, 2006). In the context of this study, the outcome did not imply that the return to education in Bangladesh has declined over the past ten years. While the main focus of other studies was to seek the return to education on earnings, the current study seeks to identify the earnings determinants among the RMG workers. The relationship between education and earning has been investigated and was found to be consistent with the findings of earning determinants of Tanzanian households (Teal & Quinn, 2008) and Korean labour markets (Lee & Lee, 2006). Based on this, it can be concluded that education plays an important role in determining the earnings of the RMG workers.

As mentioned earlier, this study used actual experience in the RMG industry. In the basic Mincerian equation model 1 and other models, the experience coefficient showed the expected sign. It also depicted the usual concavity of the experience-earning relationship. In particular, the coefficient of the original experience variable was positive while the

squared form showed a negative relationship. This suggests that the earnings of a worker increases as his/her experience increases and after a certain point, it starts to decrease. It further suggests that a one unit increase of experience will lead to a four percent increase of earnings in the conventional Mincerian earning function. However, it remained the same in the expanded equation when the labour market variables were added to the equation (4.2). After controlling the equation using job category, the result suggests that a one percent increase of experience increases the earnings by two percent. The return to experience became one percent when the demographic and household characteristics were added. This result is consistent with previous literature that focused on the Indonesian labour market (Purnastuti, Salim, & Joarder, 2015), the UK labour market (Bhattarai & Wisniewski, 2002), and the Tanzanian households (Teal & Quinn, 2008).

Formal on-the-job training dummy showed a positive and significant relationship with earnings. The positive coefficient suggests that workers who attended on-the-job training earned more than those who did not. This finding supports the human capital model (Becker, 1964, 2009) and the case of the Pakistan labour force (Hyder, 2007). However, it contradicts the findings of the German labour force (Kuckulenz & Zwick, 2003). Further, it is worthwhile to mention that after the addition of the training dummy with the standard human capital model (Becker, 1964; Mincer, 1974), the result remained significant at the one percent level, even when the equation (4.2) was controlled.

As expected, a positive and significant relationship was found between earnings and working hours per week. This suggests that the one percent increase of working hours will lead to a 0.02 percent of earning in Model-5 and Model-6. The small coefficient also indicates that the effect of working hours per week is not much stronger when compared to other human capital and labour market variables. This finding is consistent with (Bhatti,

2012). As mentioned, the samples of this study comprise three categories: supervisors, operators and helpers. In the regression model, helper was used as the reference category. The result suggests that operators and supervisors earned more than the helpers; this is not unusual as helper is the entry post of the RGM industry. We have used this variable to control the earnings function.

Among other notable results, the negative coefficient of the gender dummy showed a gender gap in the earnings of the RMG workers. The result suggests that the earnings of female workers were significantly lower than their male counterparts. The female workers faced and experienced an earning disadvantage despite the fact that they make up 80 percent of the labour force. One possible reason could be the lower educational attainment that prevails among women workers. The results obtained were also in line with previous studies conducted in Pakistan (Bhatti, 2012), Indonesia (Purnastuti et al., 2015), and China (Qian & Smyth, 2008). Additionally, there is a labour market discrimination towards women. These assumptions require a detailed study and further investigation. In line with this, the Oaxaca decomposition was applied, as shown in section 4.6.2 of this chapter.

The age also highly and positively correlates with earnings (at the 1% level). It suggests the concavity of the age-earning profile. This result is consistent with previous literature noted of the Indonesian labour market (Purnastuti et al., 2015), the UK labour (Bhattarai & Wisniewski, 2002), and the Tanzanian households (Teal & Quinn, 2008). While other studies used age as a proxy of labour market experience, the current study considered age as a separate factor in the analysis.

The results of the current study was also found to be consistent with other studies (Ahmed & Maitra, 2010; Baffour, 2013; Vecchio et al., 2013) where married workers were shown

to earn more than unmarried/divorced/widowed categories. This is a positive sign for the female workers.

Consistent with other studies (Ahmed & Maitra, 2010; Baffour, 2013; Vecchio et al., 2013) married workers earns more than unmarried/divorced/widowed categories as it showed a positive sign. Other controlled variables including family size showed a negative sign and highest educational attainment of a household head found significant and positive with earnings of RMG workers. In the fourth equation we used district dummy on the basis of the location of factories to control the equation and found it significant.

As can be seen in Table 4.2, the interaction terms was also added as the human capital variables. The result of model-6 further reconfirms that the sign and value of the coefficients remained largely the same for most of the variables, from Model-1 to Model-6. However, there was a slight change in the significant level for the working hours variable. Further, in model-6, the joint effect of experience and training showed a positive sign and it was significant at the five percent level. This implies that the joint effect of experience and training was slightly higher than the effect of experience alone, since the coefficient value of experience had decreased.

Table 4.2: Results of Earnings Function (OLS)

Explanatory Variables	Dependent variable : natural logarithm of monthly earnings					
	Model-1	Model-2	Model-3	Model-4	Model-5	Model-6
Human capital Variables						
Education	0.035***	0.034***	0.016***	0.011***	0.015***	0.019***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)	(0.007)
Experience	0.042***	0.038***	0.019***	0.014***	0.011***	0.009***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)
Experience2	-0.003***	-0.003***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
OJT : Do not attend OJT		RC	RC	RC	RC	RC
Attend OJT		0.222***	0.149***	0.142***	0.150***	0.133***
		(0.027)	(0.018)	(0.017)	(0.023)	(0.025)
Labour Market Variables						
WH		0.001	0.001	0.001**	0.002**	0.002**
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Job Category: Helper			RC	RC	RC	RC
Operator			0.405***	0.375***	0.405***	0.402***
			(0.014)	(0.013)	(0.018)	(0.017)
Supervisor			0.896***	0.795***	0.831***	0.829***
			(0.045)	(0.048)	(0.060)	(0.062)
Demography and household characteristics						
Gender : Male				RC	RC	RC
Female				-0.152***	-0.171***	-0.176***
				(0.023)	(0.029)	(0.029)
AGE				0.005***	0.008***	0.008***
				(0.001)	(0.001)	(0.002)
AGE2				-0.000**	-0.000***	-0.000***
				(0.000)	(0.000)	(0.000)
Marital Status: Unmarried				RC	RC	RC
Married				0.049**	0.028	0.030
				(0.022)	(0.025)	(0.024)
Divorced					-0.066*	-0.061
					(0.036)	(0.039)
Widowed					-0.061*	-0.053
					(0.036)	(0.039)
Years of schooling Household Head					0.014***	0.013***
					(0.003)	(0.003)
Size of family					-0.037***	-0.039***
					(0.008)	(0.008)
District dummy	No	No	No	No	Yes	Yes
OJT*education						-0.006
						(0.007)
Education*Experience						-0.000
						(0.001)
Experience*OJT						0.011**
						(0.004)
_cons	8.893***	8.765***	8.681***	8.807***	8.768***	8.765***
	(0.023)	(0.069)	(0.048)	(0.048)	(0.068)	(0.081)
N	775	759	759	759	532	532
F	99.255	84.47	235.91	168.492	121.175	88.69
Adjusted R2	0.294	0.359	0.697	0.730	0.777	0.786

Source: Author

Note: Robust Standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, RC = Reference Group

In addition to the OLS method, quantile regression was also estimated to see whether the earnings determinants would be different or the same at different points of the earnings distribution. Table 4.4 reports the results of the quantile regression for the full samples at different quantiles, along with the OLS results, for the purpose of comparison. The earnings function at 0.25, 0.50 and 0.75 quantile was estimated in line with (Baffour,

2013). The result shows a stable pattern; earnings distribution was slightly different points in the conditional distribution of earnings. It can be seen from Table 4.3 that all the variables showed similar kinds of statistically significant results at all quantiles, similar to the OLS although the values of the coefficients change across the quantiles. However, the working hours variable was not significant in any of the quantile, unlike the OLS estimation. All the human capital variables (education, experience and training) were found to be higher among the median quantiles as compared to the bottom and top quantile even though the coefficient values remained almost the same. Specifically, return to education remained fairly constant at all quantiles. Thus, it can be concluded that the effect of education is relatively consistent across all the earnings quantiles. It is also important to mention that the return to education of the RMG workers was lower when compared to the international literature. The effect of the OJT on earnings at all quantiles was the highest among the other human capital variables. A remarkable finding of the analysis is traced to the gender variable. It seems evident from Table 4.3 that this variable changed at all quantiles and it showed an increasing trend starting from the bottom quantile to the top quantile. This implies that gender difference was the highest in the top quantiles. Therefore, even though the level of significance is similar when compared to the OLS, the coefficients and standard error changed slightly. Likewise, this also confirms the robustness of the results achieved.

Table 4.3: Comparison of OLS and Quantile Regression Result

Explanatory variables	Dependent variable : natural logarithm of monthly earnings			
	OLS	**25%**	**50%**	**75%**
Human capital variables				
Education	0.015***	0.014***	0.015***	0.013***
	(0.003)	(0.003)	(0.004)	(0.004)
Experience	0.011***	0.014***	0.014***	0.009**
	(0.003)	(0.004)	(0.004)	(0.004)
Experience2	-0.001***	-0.002***	-0.001***	-0.001**
	(0.000)	(0.000)	(0.000)	(0.000)
OJT				
Do not attend OJT	RC	RC	RC	RC
Attend training	0.150***	0.149***	0.185***	0.167***
	(0.023)	(0.029)	(0.035)	(0.028)
Labour market variables				
WH	0.002**	0.002*	0.002	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Job category				
Helper				
Operator	0.402***	0.421***	0.359***	0.324***
	(0.018)	(0.029)	(0.030)	(0.022)
Supervisor	0.831***	0.844***	0.759***	0.717***
	(0.060)	(0.069)	(0.083)	(0.077)
Demographic and household characteristics				
Male	RC	RC	RC	RC
Female	-0.185***	-0.160***	-0.193***	-0.252***
	(0.028)	(0.032)	(0.039)	(0.038)
Age	0.007***	0.006**	0.006**	0.005*
	(0.002)	(0.002)	(0.003)	(0.003)
Age2	-0.000***	-0.000***	-0.000**	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Marital status: Unmarried	RC	RC	RC	RC
Married	0.029	0.033	0.058	0.036
	(0.022)	(0.027)	(0.036)	(0.036)
Divorced	-0.066*	0.000	-0.045	-0.059
	(0.036)	(0.046)	(0.056)	(0.051)
Widowed	-0.062*	-0.108**	-0.021	0.020
	(0.036)	(0.044)	(0.056)	(0.049)
Highest educational attainment of	0.014***	0.013***	0.011***	0.007**
Household Head	(0.003)	(0.003)	(0.003)	(0.003)
Size of family	-0.037***	-0.028**	-0.030***	-0.034***
	(0.008)	(0.011)	(0.011)	(0.008)
District dummy	Yes	Yes	Yes	Yes
_cons	8.768***	8.616***	8.808***	9.089***
	(0.068)	(0.089)	(0.104)	(0.087)
N	532	532	532	532
R2	0.783	0.529	0.510	0.559
Adjusted R2	0.777			

Source: Author

Standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

We further estimated the earnings function by gender. Vecchio et al. (2013) mention that there are differences in the earnings determinants between males and females but they insist that using only a dichotomized gender variable is not enough in capturing this difference. Table 4.4 presents the results of the OLS which have been stratified by gender. After controlling all the other variables, the result showed that return to education is higher for male workers than for female workers although the outcome was almost similar (female 1% and male 2%). This finding contrasts with the outcome noted in international literature since the return to education was found to be higher for females than males, but similar to the findings of Australian health sector workers (Vecchio et al., 2013). One reason that can partly explain this is that the sample gathered for the current study came from a specific industry while the participants of other studies were derived from all sectors of the economy. Moreover, as a consequence of the females' lower educational attainment, the return was thus higher for the males. It can be seen from Table 4.4 that the effect of training is the highest for both male and female workers, 0.15 for female and 0.11 for male workers. It appears that female workers enjoyed a higher return of experience than their male counterparts. Further, working hours per month was also found to be significant for male workers. It appears that a one percent increase of working hours can lead to an increase in earnings by 0.05 percent for male workers. Among others, the earnings - experience relationship showed concavity, both for male and female workers. The return to experience outcome was higher for female than male workers. Additionally, married men received higher earnings than unmarried/divorced/widowed males, consistent with previous findings (Vecchio et al., 2013)

Table 4.4: Earnings Functions by Gender

Explanatory variables	Pooled	Female	Male
Human capital variables			
Education	0.015***	0.011***	0.022***
	(0.003)	(0.003)	(0.005)
Experience	0.011***	0.014***	0.006
	(0.003)	(0.003)	(0.005)
Experience2	-0.001***	-0.001***	-0.001**
	(0.000)	(0.000)	(0.001)
OJT : Do not attend OJT	RC	RC	RC
Attend OJT	0.150***	0.150***	0.106***
	(0.023)	(0.025)	(0.033)
Labour market variables			
WH	0.002**	0.001	0.005***
	(0.001)	(0.001)	(0.002)
Job category: helper	RC	RC	RC
Operator	0.402***	0.386***	0.422***
	(0.018)	(0.020)	(0.044)
Supervisor	0.831***	1.305***	0.592***
	(0.060)	(0.128)	(0.070)
Demographic and household characteristics			
Age	0.007***	0.007***	0.005
	(0.002)	(0.002)	(0.004)
Age2	-0.000***	-0.001**	-0.000
	(0.000)	(0.000)	(0.000)
Marital status : Unmarried	RC	RC	RC
Married	0.029	-0.024	0.172***
	(0.022)	(0.025)	(0.038)
Divorced	-0.066*	-0.053	-0.296***
	(0.036)	(0.038)	(0.077)
Widowed	-0.062*	-0.062	-0.182***
	(0.036)	(0.040)	(0.069)
Highest educational attainment of	0.014***	0.016***	0.002
Household Head	(0.003)	(0.002)	(0.004)
Size of family	-0.037***	-0.062***	0.041**
	(0.008)	(0.008)	(0.017)
Gender: Male	RC		
Female	-0.170		
	(0.025)		
District dummy	Yes	Yes Yes	Yes Yes
_cons	8.768***	8.755***	8.310***
	(0.068)	(0.071)	(0.165)
N	532	420	112
R2	0.783	0.721	0.876
Adjusted R2	0.777	0.711	0.847

Source: Author

Standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

4.6.2 Results of the Decomposition Analysis

In this section, the puzzle that was revealed in the OLS regression earlier is revisited. It was observed that gender earnings gap exist and female workers earned less than male workers. In order to test this formally, the decomposition analysis was performed.

The issue of choice of the reference group in the decomposition analysis has received much attention in literature. Decomposition analysis is often seen as the choice as reference groups can affect the outcome of the decomposition; it can also arbitrarily dictate the values in the coefficients on all the other dummy variables (Gardeazabal & Ugidos, 2004; Jones & Kelley, 1984; Oaxaca & Ransom 1999; Yun, 2005). To avoid the potential identification problem caused by the choice of reference groups, the categorical and binary variables were normalized. Therefore, no group was omitted from the analysis. In this way, no identification problems should emerge due to the choice of reference groups (Yun, 2005). Another approach to the decomposition analysis was recommended by Neumark (1988) and Oaxaca and Ransom (1994). They claim that the approach proposed by Jann (2008) can inappropriately transfer some of the unexplained parts of the differentials into the explained part. Nonetheless, this did not get any attention in the literature except by Fortin (2006). Hence, the analysis was retained based on the approach of Jann (2008).

Table 4.5 reports the results of the Oaxaca decomposition output of the mean predictions by groups and their differences. The mean monthly earnings for males is BDT 9.392 and for females is BDT 8.914, yielding an earnings gap differential of 0.478. From this gap, it is noted that 64.22 percent was due to endowments or characteristics differences and 36 percent was unexplained.

Table 4.5: Oaxaca Decomposition of male-female Gap earnings Gap

	(1)	(2)
Mean Earnings of male	9.392***	9.392***
	(0.036)	(0.036)
Mean Earnings of female	8.914***	8.914***
	(0.015)	(0.015)
Raw Mean Difference	**0.478****	**0.478****
	(0.039)	(0.039)
Explained variation	0.309	0.307
	(64.64%)	(64.22%)
Unexplained variation	0.169	0.171
	(35.35%)	(35.77%)
N	532	532
Control for job category, age, age square, marital status, educational attainment of household head and family size	Yes	Yes
District Dummy	No	Yes

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

In addition, Table 4.6 presents the detailed estimates of the Oaxaca decomposition. Column 1 of Table 4.6 provides the difference in productive characteristics (the explained portion). The positive sign of a given factor shows the difference between females' and males' relative endowments as well as the factors which are responsible for increasing the gender earnings gap. At the same time, the negative sign will incline to lessen the gender earnings gap. It can be seen in column 1 of Table 4.6 that among the human capital variables used, the difference in education and experience, are the factors that had increased the gender earnings gap in the RMG industry of Bangladesh. Although the difference in age, on the job training and the highest level of educational attainment of the household heads had also increased the gap, the effects were not as much when compared to other human capital variables. The most notable findings of the decomposition analysis is that the differences in occupational distribution between females and males increased the gender earnings gap. This implies that women tend to be engaged in lower paying positions in the RMG industry. Specifically, it can also be seen

that working in the position of helpers and supervisors, further increase the earnings gap. This also suggests that occupational segregation plays an important role in shaping the earnings outcome. In addition, it is also evident that being married and family size decrease the gender earnings gap.

Table 4.6: Detail decomposition of male-female earnings gap

Total difference	**0.478**	
Overall	**Explained**	**Unexplained**
Total	0.307*** (64%)	0.171*** (36%)
	(0.037)	(0.028)
Education	**0.043*** **	0.098**
	(0.009)	(0.042)
Experience	**0.023*** **	-0.005
	(0.008)	(0.007)
Experience2	-0.004	0.000
	(0.006)	(0.015)
Do not attend OJT	0.011***	0.017
	(0.004)	(0.015)
Attend OJT	0.011***	-0.007
	(0.004)	(0.005)
WH	-0.001	0.239**
	(0.002)	(0.110)
Helper	**0.189*** **	0.111***
	(0.021)	(0.022)
Operator	-0.003	0.114***
	(0.007)	(0.018)
Supervisor	**0.051*** **	-0.022***
	(0.014)	(0.007)
Age	**0.013***	-0.004
	(0.007)	(0.006)
Age2	-0.002	0.004
	(0.005)	(0.010)
Unmarried	0.009	0.026
	(0.008)	(0.016)
Married	**-0.018*** **	0.098***
	(0.006)	(0.018)
Divorced	0.001	-0.010*
	(0.001)	(0.005)
Widowed	0.001	-0.003
	(0.001)	(0.003)
Educational attainment of HH	**0.011***	-0.091***
	(0.005)	(0.031)
Size of family	-0.030***	0.364***
	(0.008)	(0.056)
District dummy	Yes	Yes
_cons	-0.782***	
	(0.152)	
N	532	

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

4.7 Chapter Summary

In this chapter, we have investigated the earnings determination among RMG workers in Bangladesh. Using the human capital theory and Mincerian wage function, we revealed that while return to education is higher without adding additional labour market variables, it declined after the addition of variables and even when we controlled the equation. Although our results yield 2% return to education, it does not necessarily mean that investment in education among RMG workers is ineffective. As a result of lower level of education, return to education may be lower compared to other studies in the contexts of Bangladesh and other countries. We also found that the earnings of RMG workers increase as experience in the labour market increases and after a certain point in time, it starts to decrease and hence showed the concavity. Formal on-the-job training was found positive and highly significant in all estimation.

A notable finding is the negative and highly significant relationship between gender and earnings when we used 'male' as the reference category. This finding suggests that the earnings of female workers are 17% less than male workers' after controlling the occupational status. As a consequence, we investigated the puzzle by deploying Oaxaca decomposition method to see whether it is explained by the superior characteristics of male workers over female workers. We revealed that 64% of earnings gap happens due to differences in endowments and 36% remains unexplained. We further investigated this dilemma and revealed that while differences in education, experiences are important factors that are responsible for this earning difference, the major factor is related to occupational segregation as women are working in RMG industry in relatively lower earnings positions or lower position in rank. In addition, the separate earnings functions for both male and female revealed that the effects of on the job training is the highest among other human capital variables and return is higher for female than male workers.

It is not surprising as RMG industry belongs to the manufacturing industry, the requirement of skill development programme might be more important than other human capital variables. While the return to education is almost similar for male and female, the return to experience is higher for female than male.

The study supports the human capital theory and contributes towards the growing body of literature by showing empirical evidence on the determinants of earnings among RMG workers in a LDC. Furthermore, decomposition of the earnings function revealed that occupational segregation (being a helper and a supervisor) is the major contributing factor to the overall gender earnings gap in RMG industry in Bangladesh. However, it is evident that differences in education, experience and training between male and female workers are not playing a major role towards gender earnings gap.

The study used a unique dataset that provided data on the actual working experience in the RMG industry rather than potential experience or age as a proxy of experience which is new in the Backerian-Mincerian Earnings function. Moreover, we also used a training dummy which was rarely been used in the previous literature, although the importance of this variable is well recognized. In addition, we also fill the gap in the literature by providing empirical evidence from a LDC while the most of literature on the earnings determination is based on the experience of developed countries.

CHAPTER 5: DETERMINANTS OF HEALTH FUNCTIOING AMONG READY-MADE GARMENT WORKERS

5.1 Introduction

This chapter investigates the factors that affect the health status of the RMG workers. While the contribution of the RMG industry to the national economy is enormous, and indeed it has prompted the government of Bangladesh to promote the industry widely, adverse working conditions including low wages, long working hours, intensely tiring workloads and exposure to workplace violence, have undermined the reputation of the industry (Yardley, 2012). Workers' safety, security and health have become a serious concern following the collapse of a factory building located in the Rana Plaza, Savar[4] in April 2012.

The RMG manufacturing industry is an export-oriented industry that is under intense pressure to ship products on time and to achieve high standards quality for its overseas clients. Hence, workers are frequently overloaded with stressful work in order to complete their designated tasks on time. For example, ILO (2012) found that the RMG workers in Cambodia had complained that their health conditions worsened during the busiest manufacturing periods. The study also found that poor nutrient intake, stress, and overwork had led to a decline in fertility among young Cambodian female workers. Working conditions have become increasingly diverse and complicated in the current era of industrial development. Several studies showed that worker satisfaction has a positive impact on their physical health (Segerstrom, Taylor, Kemeny, & Fahey, 1998; Stone & Shiffman, 1994). It was also documented that individuals' well-being depends largely on

[4] Savar is a sub district of the capital city of Bangladesh

the nature of the work and work environment (Warr, 1987). Workers with good health are more likely to be productive than workers with poor health. Thus, there is a positive relationship between good health and productivity. According to Boyd (1997), poor health and well-being of the workers in the workplace may lead to less productivity and this can lower quality decision making abilities and promote absentism from work (Boyd, 1997). This suggests that workers who enjoy good health can contribute to improving the productivity of the RMG manufacturing sector. It is important to stress that the quality of work is a vital indicator of whether work is a cause of well-being or ill-being (Kahn, 1981). Hence, it is necessary to identify the factors that can critically enhance the health status of the garment-industry workers. In other words, identifying the factors that hinder good health is critical since the elimination of such factors can improve workers' health and good health increases productivity.

Working with the RMG companies can be physically very demanding. According to the U.S. Department of Labor (1997), workers in the apparel sector have to spend long hours on their feet, leaning over tables to operate machineries. Furthermore, it has been recognised that workers in the RMG sector have low level education and skills when compared to workers in other industries. Hence, the RMG workers have limited access to better quality work opportunities. Their only choice is to sell their labour cheaply. The emergence of the RMG manufacturing industry had opened a new window for employment generation in the LDCs, particularly through the offering of conditional quotas by developed countries, following the end of the Multi-Fiber Arrangement (MFA) in 2004 (Rasiah, 2012; Rasiah & Myint, 2013). Due to this employment generation that opened up opportunities for the less skilled and poor workers, it is imperative that good health be promoted among these workers so that they can contribute to the productivity of the RMG manufacturing industry.

According to Steinisch et al. (2013), the association between psychologically adverse working conditions and health outcomes has not been addressed sufficiently in the RMG industry. They also emphasised that work stress is a culturally embedded phenomenon and this aspect needs to be explored among individual cultural settings. There is, at present, considerable work done on the physical and occupational health problems faced by garment workers at the workplace in Bangladesh (see Ahmed & Raihan, 2014; Gupta, Nag, Debashish, Saikat, Sriporna & Aziz, 2015; Islam, Sultana & Ferdous, 2014). These studies showed that overcrowded work environments, verbal and physical abuse, long working hours, high noise levels, inadequate ventilation, and the overall sub-standard physical environment of the workplace, have seriously affected the health of the workers. While these accounts are rich, they have not taken into account the psychosocial working conditions' effects on the workers' health. Only one study had broached on the psychosocial working conditions of workers but the focus was on workers from one firm only (Steinisch et al., 2013). Moreover, the physical working conditions and health outcomes of these workers were not explored.

Aiming to address this gap, the current study applied the Capability Approach (CA) as a framework. The framework was advanced by Sen (1992) who mooted the idea to analyze the well-being of workers as outcome variables (Mabsout, 2011). Since the term, functioning refers to a notion that is "constitutive of a person's being" Sen (1992) it is apt to examine this gap further from the perspective of the workers' health. This is because health is one of the basic functioning variables. Robeyns (2005) had expanded the CA framework of Sen (2001) by discussing the conversion factors that are essential for workers to achieve this functioning. In that regard, all the conversion factors would play important roles, either in hindering or in promoting the capabilities of human beings. The relationships between the variables are shown in the conceptual framework. All three

conversion factors (environmental, individual and social) have been included to examine whether or not they influence the workers' health outcomes. In other words, the main aim of this study is to examine the effect of the conversion factors as expounded by the CA, on the health outcomes of workers in the RMG industry in Bangladesh.

Using the CA as a framework, the findings may provide alternative policy interventions for the relevant authorities to improve the working conditions of the RMG workers in Bangladesh. Improvements in the health of these workers will also improve the image of the garment factories in Bangladesh, which largely export their products to European and North American markets (Ahemd & Ahmed, 2011). The total number of people working in the RMG industry in Bangladesh is four million in 2015. This makes the RMG industry of Bangladesh one of the largest employers in the country (Bangladesh Garments Manufacturers and Exporters Association, 2016). Clearly, the long-term sustainability of garment employment depends very much on the workers' health. Therefore, research looking into the relationship between the conversion factors and their effects on the health of these workers is of paramount importance.

5.2 Literature Review

In this section, the empirical literature is discussed and the review is divided into three parts. First, the general determinants of health are discussed. Second, the effects of the working conditions and the conditions of the employees/workers are emphasised. Finally, the health conditions of the garment industry workers in other countries and Bangladesh are discussed.

5.2.1 Determinants of Health

Cultural, social and economic conditions, rather than medical care inputs, have been identified as the prime determinants of health, both at the population and the individual

level (Frank, 1995). Several articles published in the medical journals have established a strong association between low levels of education and household income, and poor health status (Choinière, Lafontaine, & Edwards, 2000; Huff & Gray, 2001; Winkleby, Jatulis, Frank, & Fortmann, 1992).

Employment is an important determinant of health; it can offer financial security, social status, personal development, social relationships, self-esteem and protection from physical and psychosocial hazards. In addition, the employment conditions and the nature of the work itself can determine the worker's health. According to Benach and Muntaner (2007), flexible work, such as contingency work, part-time contracts, unregulated underground work or home-based work, have adverse effects on worker's health. A study carried out by Kim, Muntaner, Khang, Paek, and Cho (2006), using data from the 1998 Korean National Health and Nutrition Examination Survey, found a positive and significant relationship between poor mental health and precarious working conditions. This relationship was found to be stronger among women than men.

Contextual conditions (such as governance and policy), socio-economic position, healthcare systems and life circumstances can also affect health and health inequalities (Starfield, 2007). The places where workers live and work have been recognised as factors that had influenced workers' health and well-being. A study by Benavides, Benach, Diez-Roux, and Roman (2000) which employed a European survey of the respondents working conditions using multivariate regression, found that there was a positive and significant relationship between precarious employment and job dissatisfaction. They also noted that there was a negative relationship between precarious employment and absenteeism and stress. Their findings also suggest that full-time precarious employment is positively associated with fatigue, back-ache and muscular pain. The authors categorised

employment into different categories such as small employees, full- and part-time permanent employees, full- and part-time fixed-term employees, full- and part-time sole traders, and full- and part-time temporary employees. Employment categories were used as the main independent variables while health outcomes such as absenteeism due to poor health, job satisfaction and stress, were taken as response variables. Physical working conditions (vibration, noise, extreme temperature, breathing in vapours or fumes, performing short repetitive tasks and repetitive hand or arm movements) were used as independent variables and it was emphasised that there was an association between physical working conditions with health outcomes. Mikkonen and Raphael (2010) did not use empirical data; they focused on identifying the social determinants of health and they provided the social determinants of health (SDH) model in order to determine the relationship between social inequality and health status. Wanless, Mitchell, and Wister (2010) found a strong relationship between the health status of urban older women and their socio-economic status and social-capital status.

5.2.2. Workplace conditions and Health of workers

Roelen et al. (2014) identified the psychological job demands of workers as one of the important psychosocial risks in work that require mental and emotional efforts. This can provoke strain and stress. They mentioned that long term exposure to demanding and stressful jobs and conditions may result in poor health for employees. Karasek (1979) identified that workers working in the garment industry particularly those involved with stitching, to be a highly straining job that leads to high levels of mental and physical illness. In addition to this, rigidity and inflexibility in the work environment can also result in the workers' poor health status.

According to Karasek and Theorell (1990), discomfort and stress arise from the noise in the work environment, thereby leading to increased job related stress. In the RMG setting, noise arises from the machines when all the workers work together with a number of machines. This creates a noisy workplace which is the major cause of hearing impairment among the workers (Mehta, 2012). Workplace crowding has also been identified as another major factor at the workplace that can cause several health problems including increased stress levels, high blood pressure, social withdrawal, decreased satisfaction, turnover intentions and low task performance (Evans & Johnson, 2000). Therefore, noise and crowding have been identified by a number of researchers as the potential stressors of the workplace which can cause adverse effects on workers' health and well-being.

According to the Labour Department of Hong Kong (2003), rest breaks play a vital role in keeping workers in good health. Longer rest breaks lead to reduced strain and injury for both the meat-processing employees and the poultry inspectors (Dababneh, Swanson, & Shell, 2001; Van Dieen & Vrielink, 1999). Taylor (2005) also identified the provision of rest breaks as a potential determinant of health among the US population. Nurses of Nigeria identified inadequate rest breaks during the work day as one of the risk factors which causes work related discomfort and injury (Tinubu, Mbada, Oyeyemi, & Fabunmi, 2010). Therefore, adequacy of rest breaks can play an important role for the health and well-being of workers at the work place and vice versa.

5.2.3 Working in the RMG/garment industry and health conditions

The mass wage employment of women in the export-oriented garment industry is a phenomenon that started in the late 1990s in developing countries. Indeed, such employment had brought a new dimension to the lives of rural women through earnings

and empowerment. In this section, the existing literature on the health conditions of workers in the RMG/garment industry is reviewed.

Attanapola (2005) used a qualitative research method to study the workers in the Sri Lankan EPZ. In her narratives on garment factory workers, Attanapola (2005) stated that garment factory workers complained about hostile working environments including overwork and undue pressure from supervisors. However, Attanapola (2005) did not focus extensively on the garment industry. Chaiklieng, Suggaravetsiri, and Puntumetakul (2014) Found that work posture and work-station designs are the main factors that contribute to shoulder pain among the Thai garment-industry workers. The work posture was measured in a binary manner and three indicators were used: repetitive movement, change of posture each hour and prolonged sitting for more than two hours. Work stations were assessed in terms of the seat width, table height, table depth and table width to identify whether they were appropriate or not appropriate. This study concentrated on just one physical problem of the garment-industry workers; it did not capture the overall impact of the physical working environment on the workers' health.

Loscocco and Spitze (1990) found that working conditions such as job demands (overtime and job strain), job deprivations and rewards, physical environment (noise and design of work station) and work-related social support can affect the well-being of both male and female manufacturing workers in Indiana. This study was conducted in a developed country and it is possible that the outcome may not be applicable to workers in developing countries and in LDCs, where the violation of labour laws and regulations are very common. According to Yu et al. (2012), work injuries among factory workers have a significant correlation with work stress, working hours per week and the history of previous injuries. Yu et al. (2012) focused on work injuries rather than the health

conditions of workers. Finally, it must be noted that all the studies mentioned above focused on the manufacturing-industry workers rather than the garment producing industry workers.

Using a random sample of garment workers located in a free-trade zone (FTZ) area in Sri Lanka, De Silva et al. (2013) deployed both the focus group discussions and the descriptive statistics to reveal workers' health functioning. It was revealed that majority of the workers (63.8%, n = 676) were satisfied with their health. The researchers, however, did not use any statistical analysis to investigate the relationships between the variables and their samples. It is a well-known fact that laws and regulations in the FTZ areas are strict and health care facilities are easily accessible as compared to the non-FTZ areas and this might be the reason of reporting good health conditions among workers. Another study revealed that high work pressure forced the garment-industry workers in an FTZ area of Sri Lanka into conditions of overwork and long shifts (Busser, 2005).

To date, women have achieved a higher socio-economic status as a result of working in the RMG industry in Bangladesh (Zohir & Paul-Majumder, 1996). However, the health condition of these workers seemed to have deteriorated rather than improved and the industry has done little to improve the health conditions of its workers. Paul-Majumder (1996) found that working hours are strongly related to the deteriorating health conditions of the RMG workers in Bangladesh. Multivariate regression was used to determine the association between health conditions and work length and socio economic variables. While this was the first quantitative study of the health conditions of garment-industry workers in Bangladesh, the study did not take into account the important variables related to the physical and psychosocial working conditions of the workplace.

The RMG industry workers of Bangladesh frequently suffer from skin rashes and dermatitis, breathing complications, coughing and fever (Islam et al., 2014; Paul-Majumder, 1996). Islam et al. (2014) had also identified severe work pressure, overcrowded work environment, verbal and physical abuse, and poor wages as the main causes of the workers' poor psychological health and depression among the female workers. They also noted that the health of the garment-industry workers was worse than the health of other occupational groups. However, they did not use any robust statistical analysis to demonstrate the relationship between employment in the garment-industry and the health of the workers. In addition, their sample size was very small (N = 60 RMG workers and 50 control group). Because of this, there is possible bias in drawing inferences of the mentioned relationship.

Occupational hazards such as long working hours, congested and overcrowded working conditions, absence of leave, health facilities, safe working environment or psychological counselling, lack of safe drinking water, first aid boxes or proper safety measures, and poor staff amenities, are the root causes of many diseases that are prevalent among female workers (Ahmed & Raihan, 2014). Although Ahmed and Raihan (2014) identified diseases and occupational hazards, they did not use robust statistical analysis or a proper sampling frame and sample size thereby, resulting in the study being potentially biased. Another study was carried out with a sample of 145 female workers. Using bivariate analysis, a positive and significant relationship was found between suffering from headaches (used as a proxy of physical health condition) and noise, inadequate ventilation, and the overall physical environment of the workplace (Gupta et al., 2015). It was also revealed that majority of the workers were satisfied with the healthcare services provided by the factories. The study used purposive sampling, which is a non-probability sampling technique that suffers from selection bias, making it unsuitable for quantitative

analysis (Saumure & Given, 2008). Another epidemiological study found that high work-related demands and poor interpersonal resources were important determinants of poor health and the key determinants of work stress among the RMG industry workers in Bangladesh (Steinisch et al., 2013). While physical demands, time pressure, worries about making mistakes and exposure to abusive languages made up the work related demands, items included in the interpersonal resources were support, recognition, adequate payment and trust. The study did not include variables related to the physical working environment. The sample size was also small (n=332) for statistical inferences to be made. More importantly, the study was based on only one RMG factory. Using descriptive statistics and focus-group discussions with 100 female garment-industry workers, Mridula and Khan (2009) found that severe headaches, eye irritation, back-ache, body-ache, respiratory problems and stomach-ache were prominent health problems among the female RMG industry workers. The researchers also identified working hours, inadequate rest periods, an absence of weekly holidays, an inadequate physical working environment and a lack of occupational health and safety measures as the main reasons behind the workers' poor health. However, they did not clarify the purposes of their study or what constitutes a physical working environment.

5.3 Methodology

5.3.1 Analytical framework

In this study, the capability framework proposed by Robeyns (2005), who drew on the principles of the capability approach that was advanced by (Sen, 2001), was adapted. This framework allows capabilities to be expanded or constrained depending on the conversion factors (Tao, 2010). According to Robeyns (2005), capabilities or capability sets consist of a combination of potential functioning, which could either be potential or achieved. She categorised three conversion factors: (i) individual conversion factors (e.g.,

intelligence, skills, age, gender and education), (ii) environmental conversion factors (geographical location, logistics and infrastructure) and (iii) social conversion factors (social norms and gender relations, roles and identities). The role of the conversion factors is critical in converting the characteristics of the goods to individual functions. Conversion factors, therefore, capture the relationship between the commodity and the achievement of the function; they are a means by which an individual can convert resources to function. Figure 5.1 illustrates how the conversion factors shape the capability set of the workers with information gathered from three distinct kind of indicators such as Individual (age, education and earnings), Environmental (psychosocial, physical workplace conditions and work load) and Social (marital status). Here, the conversion factors are positioned before the capability. The Capability Approach in development planning for health implies the promotion of the conditions which enable people to have the freedom to achieve good health. A priority for health planners is the ability to identify factors promoting these freedom as well as those acting as barriers to improvement. It is noteworthy to mention that until now, most efforts to measure capabilities have focused on measuring functioning (what people actually do) as proxies for what people can potentially do (Chiappero-Martinetti, Egdell, Hollywood, & McQuaid, 2015). This study also followed this approach.

In the current study, the health condition of workers is considered as functionings or outcomes. The proxies to measure the conversion factors were chosen in order to determine the relationships between conversion factors (environmental, individual and social) and health functioning. Capabilities is considered to be modulated by the conversion factors as discussed above hence, workers will achieve functionings. Capabilities here are considered as the freedom or opportunity to attend the work that affects their motivation as a result of feeling healthy. Conversely, these conversion factors

may restrict capability, which, in turn, will inhibit the achievement of good health. Hence, capabilities here are considered as the potential functioning. In this framework, the environmental, individual and social conversion factors are considered as either restricting or expanding the capability. As a result, workers may feel healthy or unhealthy. Therefore, on the one hand, the psychosocial and physical working conditions will contribute to the workers' illness; the psychosocial and physical working conditions can also affect their choices/freedoms, thus resulting in poor health. On the other hand, the psychosocial and physical working conditions which make up the environmental conversion factors in this context, can contribute to the accomplishment of good health. Similarly, individual conversion factors such as earnings, education, age, and social conversion factor like being married can facilitate the good health of the workers. In this study, the determinants of health functioning are the conversion factors. Conversion factors can have an effect on health functioning directly. Thus, this study attempts to find out the conversion factors which contribute to the accomplishment of the health functioning of low wage workers.

It is important to note that Sen's CA framework does not provide any particular capabilities for evaluation. The approach is, instead, regarded as providing a broad framework for evaluating policies. It provides a framework that considers the respective roles of the resources of the context and the factors which will enable a worker to use these resources to enjoy good health.

5.3.2 Conversion factors and Effort-Reward Model

The prominent theoretical models used in the context of measuring the health condition of workers is the job demand control model (JDC) developed by Karasek (1979) and the Effort-Reward Model (ERIM) developed by (Siegrist et al., 2004). The JDC model posits

that high job demands (e.g. intense work) and low control (reduced control over work, social support, skills and tasks) cause work stress and affect the health of employees. The ERIM posits that when efforts (e.g. pressure to finish work on time) are not sufficiently rewarded by an adequate salary, good promotion prospects, job security, and recognition, it may cause distress in the working environment and eventually, weaken the health of the workers. The ERIM is based on two components – effort and reward. Adverse working conditions that affect the physical and psychological health of workers are considered to be important determinants of workers' health (Nieuwenhuijsen, Bruinvels, & Frings-Dresen, 2010). The ERIM is based on two aspects - effort and reward. Both the models emphasise on work stress and its association with health outcomes (Siegrist, Wege, Pühlhofer, & Wahrendorf, 2009). Adverse working conditions that affect the health of the workers, both physically and psychologically, are considered as important determinants of their health conditions. Factors identified in the ERIM emphasised the environmental factors in the workplace. The main argument is that when these factors are favourable, workers can enjoy reasonable levels of health, but when they are hostile or unfriendly, they could have adverse effects on the workers' health. However, the model did not take into account individual and social factors which a person can possess.

Hence, this study is based on a broad normative framework – the Capability framework that (Robeyns, 2005) adapted from Sen (2001) and Tao (2010). As pointed out by Tao (2010), this framework could serve as a conceptual basis for evaluating different aspects of a person's well-being which can provide policy guidance that helps to eliminate obstacles that hinder workers' health. These obstacles are responsible for the inability of workers to achieve the quality of life which they are entitled to and have reason to value. Although the conceptual framework of this study was mainly based on the capability approach, it also incorporated some questions from the ERM questionnaire to use a more

comprehensive set of proxies on the environmental factors that may affect workplace settings. Both the efforts and rewards model conceptualised the psychosocial working conditions which are part of the environmental factors.

According to Danielsson, Bodin, Wulff, and Theorell (2015), the workplace constitutes two factors: the first is the psychosocial environment and the second is the physical environment; both contribute to stress at the workplace. Researchers have identified workplace noise (Jahncke, Hygge, Halin, Green, & Dimberg, 2011) and crowding (De Croon, Sluiter, Kuijer, & Frings-Dresen, 2005) as environmental factors that create stress at the workplace. These have been used as measures of the physical working environment (Loscocco & Spitze, 1990). Excessive noise is detrimental to health and could pose a threat to the quality of life for workers (Chauhan & Pande, 2010). Noise causes stress in the workplace (Evans & Johnson, 2000). Given the importance of both the psychosocial and physical working conditions in the RMG industry in LDCs, both variables were then used in the conceptual framework of this study as environmental conversion factors. The individual conversion factors used here are in line with how they have been used by others (Otto & Ziegler, 2006). In life, marriage is a social institution and Robeyns (2005) consider social institutions as a social conversion factor too. Therefore, in the conceptual framework, the environmental conversion factors comprised psychosocial factors as well as the physical workplace environment while the individual conversion factors comprise age, gender, education and earnings. Marital status was also considered as the social conversion factor.

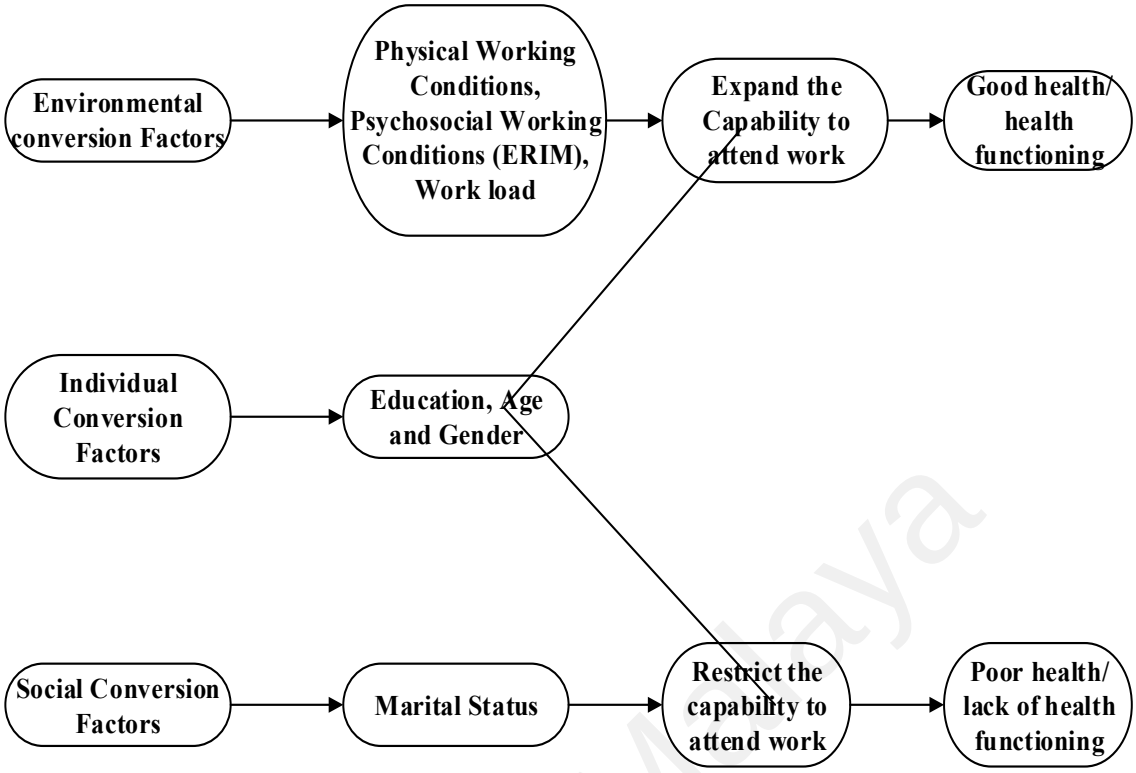

Figure 5.1: Analytical Framework

5.4 Analytical Technique

5.4.1 Dependent variable

Sickness absence or absenteeism due to poor health is a global measure of health status; it is considered as an indicator of one's social, psychological and physical functioning at the workplace (Marmot et al., 1995). It is evident that the longer the period of sickness absence the poorer the health status. Several work related factors may cause the occurrence of sickness absence (Niedhammer, Chastang, Sultan-Taïeb, Vermeylen, & Parent-Thirion, 2013). Therefore, the occurrence of sickness absence happens as a consequence of poor health status; it is one of the proxies to gauge the health status of workers. According to Lindberg, Josephson, Alfredsson, and Vingård (2006), attendance at work, by definition, indicates healthy functioning in a stable job. Based on this, absenteeism due to sickness/poor health shows a lack of healthy functioning and it can

arise due to several factors such as psychological, social or physical. Therefore, in this study the respondents were asked whether they were absent from work due to illness in the past one year of their work.

This measure was dichotomised by grouping the response scores into (i) health absenteeism occurrence as a category of poor health and (ii) health absenteeism non-occurrence as a category of good health. Therefore, the dependent variable is as follows:

Y = 1, if a worker is absent due to poor health; $Y>0$

Y = 0, otherwise; $Y = 0$

5.4.2 Independent variables

Measurement of psychosocial working environments

As mentioned earlier, the *psychosocial working environments* is one of the environmental factors in the capability framework. Work stress have been classified into two categories - psychosocial and physical working environments because both were considered as stressors of the workplace and can have influence on workers' health outcomes.

Psychosocial working conditions

For this measure, the shortened version of the ERI questionnaire that had previously been used for analyzing the health outcomes of RMG workers (Dragano et al., 2010; Steinisch et al., 2013) was used. Effort was measured based on the perceptions of the workers including the physical demands and time pressures of their work. Reward was measured through five aspects: social support, salary, recognition, promotion prospects and job security. All the affirmative answers were recorded on the range of 'strongly agree' to 'strongly disagree' to maintain the consistency of the respondents' scores. The questions related to promotion and job security as used by (Steinisch et al., 2013) were modified

slightly. Respondents were asked to give a score of five if they considered promotion and job security as good. A five point Likert scale (1= strongly disagree and 5 = strongly agree) were used for this purpose.

Physical Working Conditions

The five point Likert Scale was used to measure the physical working environment as the stressors of workplace which encompass noise and crowdedness. Respondents were asked to rate their workplace noise levels and the degree of crowding with categories ranging from 1 for 'very low noise' to 5 for 'very high noise' and the same range was applied for 'very low crowding' to 'very high crowding'. In addition, workers were also asked whether the rest breaks provided by the factories were adequate or not. In this regard, providing a dichotomous variable where 1 indicates 'sufficiently adequate' and 0 indicates 'not adequate at all' is accepted.

Paul-Majumder (1996) stated that long working hours in the RMG industry was the most adverse factor affecting the health status of workers. It has also been noted that the RMG industry has often been criticised for its long working hours (Yunus & Yamagata, 2012) and studies had identified this aspect as a cause of the workers' psychosocial illnesses (Padmini & Venmathi, 2012). Based on this, industry specific working condition (workload) was also included in this study as environmental conversion factors, besides the psychosocial and physical working conditions.

Individual and Social Conversion Factors

While education, gender and age were used as categorical variables and individual conversion factors, marital status was considered as a social conversion factor and this acts as a binary variable.

5.4.3 Exploratory Factor Analysis

An exploratory factor analysis (EFA) was conducted in order to find out the potential elements of the psychosocial working environment. The orthogonal rotation (Varimax) which allows for correlation between potential factors was used. Further, additional analyses based on oblique rotation (Promax) where both indicated the correlation of potential factors were used to test the sensitivity of the analysis.

At the beginning, factors based on the eigenvalue exceeding 1 were identifed. The EFA had suggested two factors: four items as factor one and two items as factor two. Importantly, the items that belonged to particular factors had loadings of more than 0.5 or higher (Table 5.1). The first factor was labelled as *job-related rewards* that comprised four factors: support, recognition, adequate salary, and promotion prospects. The second factor was labelled as *job-related demands* which consisted of two items: physical demands and time pressures. The factors identified after the EFA were found to be very similar to those identified by (Steinisch et al., 2013) who had identified three factors. It appears that the loadings of the items of the current study did not allow for three factors. One possible reason to explain this could be that the sampling used by Steinisch et al. (2013) was based on only one garment factory. The Cronbach alpha computed showed that each of the identified factors with job-related rewards was at 0.616 and with job-related demands was at 0. 552.

Table 5.1: EFA of the 7 items on psychosocial working conditions or work stress

Psychosocial working conditions items (work stress)	**Factor Loading (Eigen value)**	
	Job-related rewards (1.91)	***Job-related demands (1.40)***
Physical demand	0.080	**0.821**
Time pressure	0.044	**0.817**
Support	**0.605**	-0.116
Recognition	**0.670**	-0.068
Promotion	**0.682**	-0.061
Job security	-0.311	-0.196
Salary	**0.726**	-0.007

Model Specification

According to the capability framework, the health status equation was estimated per the following form:

$$H_i = \beta_1 + \beta_2 JR_i + \beta_3 JD_i + \beta_4 noise_i + \beta_5\, crowd_i + \beta_6\, restp_i + \beta_7\, wl_i + \beta_8\, education_i + \beta_9\, age_i + \beta_{10}\, gender_i + \beta_{11}\, ms_i + \varepsilon_i \ldots (5.1)$$

JR and *JD* denoted job-related demands and job-related rewards that were derived from the EFA respectively; $noise$, $crowd$ and $restp$ represented the level of noise, crowding and adequacy of rest breaks respectively; wl denoted working hours per week (proxy to measure workload); *education*, *age and ms (marital status)* were measured as categorical variables. Gender was denoted as a binary variable where female was coded as 1 and male coded as 0.

5.4.4 Results and Discussions

The VIF and TOL also showed that there was no multicollinearity problems among the independent variables (see Appendix G). The correlation matrix of the independent variables is shown in Appendix H.

Table 5.2 presents the percentage distribution of all the categorical variables .The analysis was not able to make the percentage distribution of earnings and *JR and JD* with the health conditions as both are continuous variable. Chi-square test was used to test the significant differences among the various categories and the sub groups of the variables. Table 5.2 shows that majority of the workers who reported high levels of noise, crowdedness and inadequacy of rest period were in poor health. It can be seen from Table 5.2 that majority of the workers who reported poor health status (61.66%) had very high levels of workload (working hours per week is 63 hours – 84 hours). While exploring the effect of education, it can be seen that those who had no education had reported poor

health status more (69.23%). Of the group, 39.71 percent of the lowest age category (13-18) reported poor health with 37 percent of those in the highest age category (68%) saying so. Marital status was found to be an important factor for determining health conditions. A higher percentage of the divorced workers reported poor health as compared to other categories. It was also observed that gender difference exists among those who reported poor health; 54.11 percent female workers and 33.95 percent male workers respectively reported poor health status. A previous study that examined the association between poor health and psychologically adverse working conditions had reported that 67.9 percent of female workers and 56.6 percent of male workers were in poor health (Paul-Majumadar, 2003). This is also in line with the health conditions of the garments workers of Viet nam as a majority of male workers (71%) reported good health conditions, while it is 63 percent for female workers. The outcome of our study may partly be explained by the impact of some recent developments that had occurred in the RMG industry, for example, minimum wage law (which was amended three times) and continuous international pressures on health and safety issues of the RMG industry. These factors appear to have made wages and working conditions more favourable than the past.

Table 5.2: Percent distribution of categorical variables and poor health of RMG workers

Variables	Poor health (%)	P value
Environmental Conversion Factors		
Psychosocial Working Conditions		
Job Related Rewards (JR)		
Job Related Demand (JD)		
Physical Working Conditions		
Noise level		
Very high Noise	73.08	
High Noise	58.21	
Average Noise	54.47	<0.001
Low Noise	44.77	
Very Low Noise	36.15	
Crowdedness		
Very High Crowdedness	55.64	
High Crowdedness	55.37	
Average Crowdedness	49.40	<0.001
Low Crowdedness	32.05	
Very Low Crowdedness	21.31	
Adequacy of Rest Break		
Adequate Rest Break	46.24	<0.005
Not Adequate Rest Break	58.22	
Workload		
40 – 53 (low workload)	41.18	
54 – 59 (high workload)	44.59	
60 – 62 (Average workload)	45.98	< 0.001
63 – 84 (very high workload)	61.66	
Individual Conversion Factors		
Educational Attainment		
No Education	69.23	
Some Primary	58.09	<0.001
Secondary	38.79	
Higher secondary and Above	17.65	
Gender		
Female	54.11	
Male	33.95	<0.001
Age		
13 – 18	39.71	
19 – 23	45.30	<0.005
24 – 29	46.72	
30 – 34	47.37	
35 and above	68.00	
Social Conversion Factor		
Marital status		
Unmarried	43.56	
Married	46.37	<0.001
Divorced	72.00	
Widowed	68.89	

Source: Author

In the current study, 48.52 percent of the respondents reported that they were absent from work during the previous year due to illnesses. This implies that poor health was a factor for nearly half of the workers. Based on the diagnostic test of the logistic regression

(Hosmer and Lemeshow tested with a *p-value* 0.758), it can be deduced that the model of this study fitted the data well.

Table 5.3 presents the results of the multiple logistic regression analysis against all independent variables using a dummy dependent variable (1, 0) for the question that asks whether respondents were absent or not absent from work due to poor health. The first and second columns present the estimates of the equations (5.1) with coefficient values and Odd Ratio (OR) values. The logistic regression revealed a negative and statistically significant relationship between job related rewards and poor health of the RMG workers. It suggests that a one unit increase of job-related rewards decrease the log odds of being in poor health by -0.354 per unit. This is in contrast with the study that focused on 332 workers of a garment factory that was located in the capital city of Dhaka (Steinisch et al., 2013). It appears that different sampling frames might yield different results. It is worthwhile to mention that high work-related rewards were found to be an important component in other studies that looked at high-income countries (Lau, 2008; Leineweber et al., 2010). In this study, the OR of job related rewards was observed to be 0.701.

The results indicate that there was a positive and significant association between high job-related demands and poor health According to equation (5.1), a one unit increase of job-related demands increases the log odds of poor health by 0.200 per unit. In this study, the OR was 1.222 and this suggests that those who reported high job-related demands were more likely to have poor health status. This finding is consistent with another study of the RMG industry in Bangladesh (Steinisch et al., 2013) where they found a positive association between poor health and high job-related demands.

Focusing on noise levels, a very low level was used as the reference category. This study found that noise levels of average, high and very high levels, was highly significant and

positive in relationship to absenteeism due to poor health. This indicates that higher noise levels affected the health conditions of the RMG industry workers. It was further observed that the coefficients and the OR increased when noise level was moved from average to high and high to very high ($OR_{average\ noise\ level} = 2.211$, $OR_{high\ noise\ level} = 2.541$, $OR_{very\ high\ noise\ level} = 5.463$). This outcome suggests that higher noise levels was positively and significantly associated with workers' poor health. Therefore, it can be concluded that the higher the level of noise, the higher the probability of being in poor health. This result is consistent with previous findings which revealed that industrial noise was an underlying cause of poor health among workers in American manufacturing companies (Cohen, 1974) and European blue-collar workers (Melamed & Green, 1991).

Workplace crowding also showed a positive relationship with poor health. Very low crowding was used as the reference category. It was found that crowding in the workplace was consistently significant, starting from very low level to very high levels. It should be noted that when workplace crowding shifts from very low to low levels, from low to average levels, from average to high levels, or from high to very high levels, both the coefficients of crowding and the adjusted OR would increase simultaneously. The OR of crowding at high and very high levels were 4.727 and 5.029 respectively. This finding is consistent with the outcomes of other studies (Lamminpää, Kuoppala, Väänänen-Tomppo, & Hinkka, 2012; Pekkarinen, Ukkola, Tolonen, & Hassi, 1979) that noted crowing as a contributing factor of detrimental health

Adequacy of rest breaks was found to be significant, at the 5 percent level. This implies that a one unit increase of the adequacy of rest breaks decreases the log odds of being in poor health by 0.554 per unit. This outcome has been endorsed by Taylor (2005).

Working hours per week was used as a proxy in order to estimate workload. The results suggest that workload influenced the health conditions of the RMG workers. Workload was positive and it was statistically significant in the relationship between workload and poor health conditions of workers. The low workload was used as the reference category. The results imply that comparing the aspect of low work load average, and high workload can increase the probability of being in poor health. The OR also indicates that the chances of being in poor health were 2.351 higher for those who have very high workload in contrast to those with low workloads. The findings are similar to those of Bannai and Tamakoshi (2014) and Paul-Majumder (1996).

From the analysis, this study revealed that individual conversion factors such as education, age and gender are associated with poor health. From Table 5.3, it can be seen that the adjusted OR for no education, primary education and secondary education stood at 5.855, 4.955 and 3.248 respectively, against the reference category that represents the highest level of educational attainment (higher secondary level and above). The effect was found to be the highest among those with no education in contrast to those with highest level of education. In addition, the group with some primary education and secondary level of educational attainment also reported a higher probability of being in poor health when compared to the group with the highest level of education. This finding is also consistent with the previous literature of (Adams, Hurd, McFadden, Merrill, & Ribeiro, 2003; Ross & Wu, 1995).

In looking at gender where male was used as the reference category, the results suggest a positive and significant association. It implies that the risk of reporting poor health was 2.227 times higher for a female worker in comparison to a male worker. This is consistent with the previous finding of Paul-Majumder (1996).

In the case of the 57 countries covered in the World Health Survey 2002–2004 (Hosseinpoor et al., 2012), age was found to be an important factor. The current study noted that those who were in the highest age category had a 3.061 times higher chance of reporting poor health condition than those who belonged to the lowest age category. This finding is consistent with existing literature (Khan & Flynn, 2015).

Turning to marital status, being unmarried was used as the reference category for this study. While the status of being married decreases the logarithmic probability of being in poor health, it was found to be statistically significant at the 10 percent level. Hence, the effect is not that much stronger when compared to the effects of other significant variables. This finding is also consistent with the findings of previous studies (Khan & Flynn, 2015; Rahman, 1993).

Table 5.3: Results of Multiple Logistic Regression

	Logit Model	
Explanatory Variables	Coefficients[1]	Adjusted OR (95% CI)
Environmental Conversion Factors : *Psychosocial working conditions*		
Job related rewards	-0.354***	0.701
	(0.083)	(0.590- 0.834)
Job related demand	0.200**	1.222
	(0.088)	(1.023-1.459)
Physical working conditions		
Noise level : very low level of noise	RC	
Low level of noise	0.273***	1.313
	(0.249)	(0.806 - 2.140)
Average level of noise	0.793**	2.211
	(0.260)	(1.334 - 3.663)
High level of noise	0.932***	2.541
	(0.367)	(1.240 - 5.205)
Very high level of noise	1.698	5.463
	(0.564)	(1.871-15.947)
Crowdedness level: very low level of crowdedness	RC	
Low level of crowdedness	0.968**	2.633
	(0.434)	(1.089- 6.366)
Average level of crowdedness	1.423***	4.148
	(0.341)	(1.977- 8.699)
High level of crowdedness	1.553***	4.727
	(0.376)	(2.130-10.480)
Very High level of crowdedness	1.615***	5.029
	(0.338)	(2.425- 10.428)
Adequacy of Rest Break : Adequate Rest Break	RC	
Not Adequate Rest Break	-0.554**	0.574
	(0.231)	(0.369-0.895)
Workload (40 – 53:low workload)	RC	
54 – 59 (average workload)	0.168	1.183
	(0.253)	(0.718-1.948)
60 – 62 (high workload)	0.427*	1.532
	(0.227)	(0.969- 2.422)
63 – 84 (very high workload)	0.855***	2.351
	(0.249)	(1.441- 3.835)
Educational Attainment: Higher secondary and above	RC	
No Education	1.767***	5.855
	(0.490)	(2.130- 16.094)
Some Primary	1.600***	4.955
	(0.441)	(1.940-12.593)
Some Secondary	1.178***	3.248
	(0.435)	(1.305-8.086)
Age : 13 - 18	RC	
19 - 23	0.481	1.618
	(0.323)	(0.852-3.070)
24 - 29	0.537	1.710
	(0.325)	(0.903-3.237)
30 - 34	0.569	1.766
	(0.376)	(0.852-3.656)
35 and above	1.119***	3.061
	(0.387)	(1.413-6.634)
Gender : Male	RC	
Female	0.801***	2.227
	(0.259)	(1.355-3.659)
Marital Status : Unmarried	RC	
Married	-0.438*	0.645
	(0.247)	(0.401-1.037)
Divorced	0.568	1.765
	(0.425)	(0.730- 4.212)
Widowed	0.123	1.130
	(0.446)	(0.488-2.619)
_cons	-4.102***	0.017
	(0.658)	(0.004-0.065)
N	736	736
Hosmer-Lemeshow Test	0.758	

Source: Author. [1] Robust Standard errors in parentheses; CI = Confidence Intervals; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010.01$

5.5 Chapter Summary

This chapter examined the relationship between health status and the conversion factors of the RMG workers' namely environmental, individual and social. This study had used a cross-sectional data comprising 560 female workers and 215 male workers who were in the RMG industry that were based in the Dhaka and Narayanganj districts. The capability framework developed by Robeyns (2006) was adapted as the conceptual framework for this chapter. The dependent variable looks at whether the respondents were in good health or poor health. This study considered those who were absent from work due to illness as being in poor health. To identify the causes, this study attempted to look for the factors that were responsible for the RMG workers' poor health or that had hindered their achievement of good health. The multiple logistic regression was used for data analysis.

The results showed that various conversion factors had constrained the capability and choice of the workers in achieving good health. They include: high job-related demands, high noise levels, high crowding in the workplace, very high workload, and low level educational attainment. Further to that, this study also observed that high job-related rewards and being married expanded the workes' capability to achieve a level of good health. Furthermore, it was also revealed that being a female worker increased the probability of having poor health conditions. In addition, poor health was more prevalent among the oldest age group of the workers, clearly due to the consequence of aging. Based on the outputs of this study, it can be concluded that all the conversion factors (environmental, individual and social) played a crucial role in supporting the RMG workers' health functioning.

CHAPTER 6: WOMEN EMPOWERMENT AND EMPLOYMENT IN READY-MADE GARMENT INDUSTRY

6.1 Introduction

This chapter attempts to examine the correlates/determinants of the empowerment of female RMG workers in Bangladesh. The empowerment of women is of particular interest as the RMG industry is the first of its kind that provides a large scale employment generation for women who were traditionally not allowed to work outside their homes (Heath & Mobarak, 2015). The rapid growth of the export sector in Bangladesh typifies the overwhelming expansion of low skill manufacturing jobs in developing countries over the past fifty years (Mammen & Paxson, 2000). Atkin (2009) identifies this employment expansion as a consequence of globalization, with an increase in the demand for women labour in the manufacturing industry. With widespread employment generation and with large scale women employment typically in the RMG sector, the global scenario is now projecting a picture that shows an increasing number of women participation in today's labour market. The textile and clothing industry which requires low skill manufacturing skills have a preference for women workers over men.

Wage employment is a means to improve the economic conditions of women. Recent phenomenon of women employment in the manufacturing industry in general, and the RMG industry in particular, provide a remarkable job expansion to the poor, low educated and distressed women. Undoubtedly, it plays an important role in empowering women, it increases their mobility, it offers greater freedom and choices in their lives as women employment offers wages, something that had not been available to low educated women living in the LDCs. The RMG industry is one of the few formal, export-oriented manufacturing sectors that has seen a large influx of rural women migrant workers.

Women who work outside their households now have an impact on society through economic independence. They can earn their own money, something that may not have been possible while working at home. In addition to the economic benefits, women employment allows more women to increase their roles in society; it is argued that women's increasing role in the household economy will lead to their empowerment. Furthermore, the improvement of the economic well-being of women can help to improve their bargaining power, thereby, their decision making capability at the household level.

Women working in the domestic spheres are usually deprived of empowerment because they remain under the control of male guardians hence, losing their autonomy and mobility (West, 2006). In his study, Kantor (2002) found that there was no connection between mobility and economic success but it was observed that women working outside other than their homes, is crucial to the economic outcomes and empowerment of women. According to Malhotra and Schuler (2005), "whether any empowerment indicator or form of agency (such as exercising control over decisions or resources) really amounts to empowerment in a particular context will always be an empirical question" (p. 9). In light of the above, this study attempts to see the effects of women employment in the RMG industry on the different dimensions of empowerment.

Women empowerment is one of the development goals stipulated in the SDGs. Since the Beijing Women's conference in 1995, women empowerment has been considered a primary policy or goal, particularly for developing countries. No doubt, there is still a great deal of ambiguity and dispute regarding the definition, measurement and criteria of achievement for women empowerment (Goldman & Little, 2015), nevertheless, empowerment has been conceptualised based on the shifts related to political, social and economic power, between and across individuals and social groups although it is

considered as a socio – political process (Batliwala, 2007a). According to Batliwala (2007b) the evolution of 'empowerment' and its transfer to the development arena has made the notion somehow different than that of its original theorizing. This is not surprising as 'magic bullets' are often used to address the complex social, political and economic problems in the arena of development activities (Goldman & Little, 2015).

Empowerment is an important goal of development in its own right, it increases female autonomy and it has been acknowledged to provide other benefits too such as long-term reduction in fertility, higher child survival rates, and allocation of resources in favour of children in households (Anderson & Eswaran, 2009). Literature on women and development has also argued on the ways to empower women, and one common way is usually women' participation in economic activities and their access to financial resources. In particular, greater labour market access for women has become a stylized fact in developing economies which can contribute to increasing women's autonomy (World Bank, 1995). Women empowerment literature has documented that women's participation in the labour market is necessary if women want to be emancipated from the enslavement of the patriarchal society (Engels, 1972). In addition to the substantial anecdotal evidence on women's autonomy, several case studies suggest that a woman's access to employment outside the home can enhance her domestic decision-making power as well as her control over financial resources (Anderson & Eswaran, 2009). In the literature of sociology, Blumberg and Coleman (1989) serves as two main advocates of this proposition. Other literature emphasises on the role of women's access to resources such as land and credit. In this context, ownership of asset has been shown as an important component that can increase the female autonomy and empowerment (Agarwal, 1994; Allendorf, 2007) in developing countries. A number of studies (Kabeer et al., 2011; West, 2006) have demonstrated the link between access to employment and women

empowerment. Other studies (Hashemi, Schuler, & Riley, 1996) have revealed some evidence linking access to micro credit programmes and women empowerment. Although an important, the term, women empowerment has been used in literature focusing on women empowerment almost in tandem with other terms such as female autonomy, women agency and empowerment. This implies that the term may be viewed differently by others. Most literature appear to consider empowerment as an increase in household decision making power and women's mobility in the public domain (Allendorf, 2007; Hashemi et al., 1996; Jejeebhoy, 1997; Kabeer et al., 2011, Mahmud et al., 2012). Nonetheless, studies have not ceased to try to find out what constitutes the drivers of women empowerment. This study will take into account the four different aspects of power and empowerment, following (Rowlands, 1995, 1997) whose typology has also been modified by Ibrahim and Alkire (2007) who proposed a set of indicators where were based on Rowlands' work. These indicators were considered as an improved set of agency and empowerment measures (Trommlerová et al., 2015) because these measures consider empowerment as an expansion of the agency, an essential aspect of the capability approach founded by Sen (2001). In this study, the indicators proposed by (Ibrahim & Alkire, 2007) were used with some modifications, taking into consideration that women empowerment can be context specific (Malhotra & Schuler, 2005). To the best of the researcher's knowledge, this is the first study that has taken into account all four aspects of empowerment within a single frame.

6.2 Women empowerment and the importance of context

This section discusses the importance of context when analyzing the issues of women empowerment. It is one of the challenges while measuring women empowerment since women empowerment can be viewed by different societies differently based on their specific norms and beliefs (Lausch, 2011). Thus, it was found to be difficult to measure

empowerment as the behaviours and attributes that signify empowerment in one context may not be important in another context (Malhotra & Schuler, 2005). For example, an increase in women mobility to visit a health care centre without needing the permission of a male household member may symbolize the empowerment of women in rural Bangladesh, but not in urban Peru. According to Mahmud et al. (2012), context is very crucial while measuring empowerment as the pathways of changes may vary from context to context or even from women to women living in the same . It was highlighted that an indicator of female mobility is relevant in a patriarchal society, but the same indicator may not be considered as an empowerment in a western society. Hence, it is evident that indicators differ from context to context. This study uses the indicators which are relevant to the context of Bangladesh. In addition, it also considers the effects of a particular kind of employment that can enhance the different kinds of power and empowerment. Over the years, a number of studies (Hashemi et al., 1996; Jejeebhoy, 1997; Mason & Smith, 2003) have attempted to emphasise on the importance of context because context is very crucial when one is trying to define and measure empowerment.

6.3 Patriarchy and women empowerment

The country of Bangladesh is a patriarchal and class-conscious society (Cain, Rokeya, & Nahar, 1979). Patriarchy governs the economic mobility of women in Bangladesh. Being one of the countries which support the system of traditional society with few exceptions, the social and cultural norms tend to restrict the autonomy of women (Anderson & Eswaran, 2009). '*Purdah*' is one of those cultural norms that prohibits women from the inclusion into the public spaces. It has been documented that '*purdah'* determines the work pattern of women outside home and it curtails the opportunities for women to work outside their homes (Amin, 1997). In particular, the country is a male dominant society and the unequal treatment between men and women starts from the family and it goes up

to different sectors (Habib, 2014). The RMG sector of Bangladesh was identified as a sector where unequal treatment of women persists (Habib, 2014). This practice is prevalent even though women desire to join the garment industry where they are prohibited from working outside their homes by their family members. Consequently, these women, particularly those in the rural areas, face several challenges in joining the workforce such as the garment sector (Cain et al., 1979).

The past twenty years have witnessed a great deal of women participation in the formal labour market, mainly due to increased participation in the garment sector and an NGO-led microcredit revolution that targeted women (Rahman, 2015). In the domestic spheres, women's mobility is greatly limited and their decision-making power is often restricted. For instance, about 48 per cent of Bangladeshi women say that their husbands alone make decisions about their health, while 35 per cent say that their husbands alone make decisions regarding visits to families and friends (UNICEF, 2007).

6.4 Literature Review

This section will focus on the empirical literature of women empowerment. Specifically, it will discuss the drivers and determinants of women empowerment. Recent literature of women empowerment had mostly focused on developing countries and LDCs. Most literature (Malhotra & Schuler, 2005) had also considered empowerment as an outcome or as the effects on the social, economic, political, policy or programmatic of development outcome

A study conducted by Samarakoon and Parinduri (2015), using the Indonesia Family Life Survey (IFLS) of 2007, found that education contributed to a decrease in the number of live births, it increased the use of contraceptives and it also promoted reproductive health practices. All these variables were also used in the current study as a measure of women

empowerment. Moreover, Samarakoon and Parinduri (2015) had also used another measure of women empowerment by relating it to the decision making power of women within the household. Interestingly, they did not find any relationship between decision making power and educational attainment, asset ownership and community participation. Samarakoon and Parinduri (2015) found an association between savings decision among all other aspects of intra-household decision making and education. They used a number of indicators including decisions related to expenditure, children's education, health and clothes, savings and employment and contraceptive use. Hence, the insignificant relationship can partly be explained by the fact that majority of the women in Indonesia had some say on expenditure and children's education, thereby contributing to the difference. Their findings confirmed the argument that the determinants of empowerment is context specific (Malhotra & Schuler, 2005).

Using the Household Survey data of Gambia conducted in 2008, Trommlerová et al., (2015) revealed that age, gender, marital status, nationality, economic activity, and health are the main drivers of communal and individual empowerment. While self-reported capabilities (for e.g. health status, accommodation, happiness, treated with respect and treated unfairly) appear to have an effect on the desire to change things in their lives, younger people, foreigners, and males enjoyed a higher level of individual empowerment. It is possible that this study is the first attempt that operationalises the indicators of Ibrahim and Alkire (2007) which are in line with the definition of the agency Sen (1985, 2001). Nonetheless, the mentioned study did not consider the importance of context in their analysis. Previous literature had emphasized on the importance of context to uncover the determinants of women empowerment.

Goldman and Little (2015) also attempted to investigate the empowerment status of a village (Massai) in Tanzania where NGOs have different programmes to empower women. It was found that the involvement of grassroot NGOs increased the personal agency in the household and an increased political participation at the societal level of the Massai village. A relationship between increased personal agency and changes in beliefs regarding gender norms at the societal level was also noted.

Gupta and Yesudian (2006) conducted a study on the married women of India using the Indian Demography and Health Survey (DHS) data. They created four indices to measure women empowerment namely: household autonomy index, freedom of mobility index and attitude towards domestic violence index. Using multiple logistic regression, it was revealed that education level, age, media exposure and living standards are significant determinants of women empowerment within the household. Drawing a sample of 3500 rural married women from 128 villages of rural Bangladesh, Mahmud et al. (2012) found that years of schooling is significantly associated with the domain of self-esteem indicators and freedom of mobility. In addition, exposure to media was also observed to be positive and significant with the indicators of control over resources, one of the self-esteem indicators (beating not justified) and mobility. Allendorf (2007) measured empowerment through women's participation in household decision making. They used the DHS data of Nepal of married women. The estimation derived from the OLS and the logit model revealed that ownership of land or livestock and cash employment fostered empowerment. Additionally, it was observed that age, education, ethnicity and caste also had an effect on empowerment. The effect of being a head of the household also carried positive and significant effects on the empowerment of the married women of Nepal in terms of household decision making. Majority of the literature focusing on Asia examined the impact of micro credit intervention on women empowerment in the developing

countries and the LDCs. Hashemi et al. (1996) surveyed 1300 married women in six villages of Bangladesh to find out whether the access to micro credit empowered women. They used eight domains of empowerment including mobility, economic security, ability to make large and small purchase, household decision making power, relative freedom of domination by the family, awareness on legal and political matters and involvement in political campaigning and protest. It was found that the duration of involvement with the micro credit program and the relative contribution of women in the family were the two important determinants of women empowerment. Using a qualitative study comprising in depth interviews and focus group discussions, Mayoux (2001) revealed that the traditional way of channeling micro credit restricted the benefits of empowerment. Three indicators were used to measure the empowerment as a process -- income, control over income and development of collective social and economic activities. In another study, Kabeer, (1997) used the retrospective interviews of 60 women and 30 men garment factory workers to focus on their intra household relationship. The study revealed that wage employment, particularly in the garment factory, brought a higher status to women in terms of decision making in the household, domestic violence and appreciation although the men did not perceive it as a factor that can improve the status of women. It was further found that money contributed by women to the household increased their participation in household decision making and reduced domestic violence. Kabeer's (1997) study examined the psychological and emotional state of factory women so as to understand their perception of self-worth and their value to others.

Allendorf (2012) engaged the data of Indian Women's Reproductive Histories Survey (WRHS) that were derived from currently married women to conceptualise empowerment as an agency expansion. Here, agency was defined as the ability to make choices and used EFA to create the agency index. The study used mobility and decision on spending as a

measure of women empowerment/agency. It also used the OLS regression to reveal that in both joint and nuclear families, better relationship with husband and in joint family better relationship with in –laws have greater agency. The study also revealed that education, age, residing in urban areas, women working outside the domestic spheres are the correlates of the married women in India. Acharya, Bell, Simkhada, van Teijlingen, and Regmi (2010) focused on empowerment as an outcome on the domain of household decision making, decision on own health care and mobility. They used the DHS data of the married women of Nepal (2006). Through the multivariate logistic regression, they found that age, employment and number of living children were positively and significantly associated with women's autonomy. A higher level of education was also found to be significant with the decision of the women's own health care. Samari Samari and Pebley (2015) investigated the impact of individual, household and community variables on the empowerment/autonomy of married women. Using the OLS regression and the logit model, they found that household wealth and region were associated with all four autonomy outcomes. No education was negatively associated with only mobility when primary education was used as the reference category.

Garikipati (2008) used seven different indicators to measure the empowerment of Indian women such as control over household asset, role in household decisions, work time allocation, control over major finance, control over minor finance, sharing of domestic chores and a composite empowerment index coded as one if a women had a positive score on three or more decisions on the above mentioned indicators. Using the logit model, it was revealed that the secondary education of women was a correlate of household decision making; it also identified the income of household as a correlate of all indicators except for household decision making and control over major finance. This is one of the studies which found a negative relationship between the micro credit programme

participation and women autonomy. In that regard, the effect of micro credit intervention on women empowerment will not be included in the current study.

Another kind of study on women empowerment considered incidences of domestic violence as a measure of women empowerment. The occurrence of violence is treated as a measure of disempowerment and non-occurrence as a measure of empowerment. Salway, Jesmin, and Rahman (2005) examined the women empowerment of 502 married women who lived in the slum neighbourhoods of the capital city of Bangladesh. They used both quantitative and qualitative methods to compare the empowerment of working and non-working women. In the group of working women they included women who worked for wages such as domestic workers, garment factory workers and construction workers. As a measure of empowerment, they used access to financial services and mobility of women. Three indicators were used to measure the access to financial services such as involvement in money management, putting money aside and having savings of their own and requirements on taking permission to visit family and friends from husbands and whether they visited alone in the public domain in last one year. It was revealed that working women reported more involvement of managing money in the household and they possessed their own savings. In looking at the mobility of women in the public domain it was found that working women could move on their own. As far as domestic violence is concerned, there was little difference in the verbal abuse noted between working and non-working women although working women reported less violence. This indicates that there is little difference between working and non-working women. The qualitative evidence of this study also suggests that monetary contribution of women to the family helps them to escape the physical abuse of their husbands. Heath (2014) investigated the impact of paid work on the domestic violence of women by using a unique dataset taken from sixty villages adjacent to the capital city of Bangladesh. It is

to be noted that a vast majority of their sample consists of female workers of the garment industry. Heath (2014) reported that domestic violence was higher in the household where women were involved in paid work as compared to households of non-working women. Interestingly, the positive relationship between domestic violence and women involved in paid work was only found among those who were less educated and married at an early age. It also noted that among the working women, those working in the garment factory faced less violence. This does not mean that working in garment industry is the main reason for reduced domestic violence; rather it could be the higher level of education gained by the women workers instead as compared to other factors. The above mentioned two studies of Bangladesh clearly provided contradictory results. Kabeer (2016) says that such a contradiction may be due to the measurement applied to domestic violence. For instance, the former had focused on whether women had experienced violence in the past year while the latter asked the respondents whether they had ever experienced violence. It is possible that women who reported violence have been engaged by paid employment after the incidence of violence as noted in the latter study whereas in the former study, violence may have reduced after the engagement of paid work (Kabeer, 2016).

A study carried out by Kabeer et al. (2011) focused on the effect of paid work on women empowerment with a sample of 5198 Bangladeshi women working in five categories of work including formal/semi-formal work, informal paid work outside the home, informal paid work within the home, subsistence production work with 22 percent of economically inactive women. While majority of the sample belonged to the category of informal paid work within the home, 35 percent were engaged in the category of formal work in garment factories. As a measure of women empowerment, four indicators were included: control over income (as a measure related to women agency), mobility in the public domain or freedom of movement, participation in public life and attitudes and perception of social

norms. The bivariate and multivariate analyses revealed that empowerment of economically active women appeared to be significant in relation to the decision making of their own health care. In contrast, engagement in formal paid employment has a positive and significant relationship with savings or insurance in their own name and asset buying from their own income. As far as freedom of movement is concerned, economically active women were better as compared to inactive women. Only women who were involved in formal paid work were likely to participate in public life. The last indicator, attitude and perception of social norms, and watching television appeared to be the most significant variable in all the items. It is important to mention that regular and formal paid work has the potential for women to raise their voice and agency along with their level of education and media exposure.

Using the DHS data of India which was analysed through the OLS regression and propensity score matching, Ting et al. (2014) found that exposure to television was correlated with greater awareness of autonomy, greater financial independence, less unwanted pregnancies (birth control), negative attitude towards beating, lower tendency of giving birth, smaller families, and lower preference for sons. All the above mentioned variables were used as the indicators of women empowerment. In another study, Jensen and Oster (2009) explored the impact of cable TV on the status of women in India. It was uncovered that after the introduction of cable TV to the villages, respect towards women from the family increased. Specifically, while son preference, acceptability of domestic violence and fertility have decreased, the autonomy of women had likewise, increased. Using a non-probability sampling sample of 150 women from a region of Oman, Varghese (2011) found that women‘s work status, income, education and employment were positively associated with women empowerment within the household. In addition, Varghese (2011) found a negative relationship between women empowerment and media

exposure. However, it is not clear from the study what kind of media was being referred to as a proxy to measure media exposure. Thus, the result could be attributed to the sample selection bias or cultural context differences. It was further observed that the association between women empowerment in the household with exposure to media was inconclusive.

A qualitative study was conducted by Schuler, Islam, and Rottach (2010) to validate their quantitative study which was done previously. In light of the in-depth interviews conducted, their study noted that access to media, mobile phone, economic security, education, legal and political awareness, self-efficacy and social support were the indicators that represent the resources and capacities of women. Further, other indicators revealing women agency were found to include engagement in paid work outside the home, involvement in major household decisions, management of family assets, participation in micro credit or savings programme and political participation.

Using the data of the National Family Health Survey (NFHS) from India, Lee (2009) found that mobile phone decreased the acceptance of domestic violence and increased women's autonomy in mobility and economic independence. They used all the mentioned aspects as a proxy to measure women's bargaining power.

Some studies include household structure or women's place in that structure such as whether she resided with a joint family or in a nuclear household (Keera Allendorf, 2012). These studies emphasised that women who lived with older in-laws or other members of husband's family can exercise less agency than women who reside in nuclear households or are at the top of the generational hierarchy of a joint household (Keera Allendorf, 2012).

Sivasankaran (2014) investigated the relationship of employment duration with women empowerment, fertility and the marriage decisions of 985 textile workers in India. It was revealed that longer employment duration can decrease desired fertility and also delay marriages. The duration of employment also had an effect on women empowerment and autonomy.

To summarise, it has been noted from literature that most studies (as mentioned above) used educational attainment, media exposure, employment dummy and age as the explanatory variables to examine the correlates/determinants of women empowerment. Few studies used family types, husband education and years of marriage as the main explanatory variables and controls as well. Only one qualitative study (Schuler et al., 2010) had emphasised that using a mobile phone has an effect on women empowerment. Furthermore, most of the literature concentrated on empowerment as choice (household decision making) and empowerment as control (control over resources) and only one study (Trommlerová et al., 2015) had empirically examined the correlates/determinants of empowerment in the community and empowerment as change. Most studies (Kabeer et al., 2011; West, 2006) used different categories of working status of women as proxy to measure employment and to compare the empowerment status across different groups. Due to this, it is important to take into account the employment experience of women and to consider a broader range of empowerment indicators so as to look deeper into the complex relationship between employment and empowerment (West, 2006). In light of the above, four different kinds of empowerment indicators were used including employment experience (work experience in RMG) and other variables that are considered as resources, in line with the theoretical argument of (Kabeer, 1999) so as to uncover the effects of employment in the RMG industry.

6.5 Methodology

6.5.1 Analytical Framework

Figure 6.1 shows the basis of the theoretical background and the empirical literature on women empowerment. First, in line with the theoretical approach of Kabeer (1999), work experience in the RMG industry (proxy of employment in RMG industry), earnings compared to husbands, watching television, use of mobile phone, educational attainment and age were anticipated to affect empowerment as all of these were considered as 'resources' that are required to affect control over personal decisions, specifically control over income, household decision making and household bargaining power, changes in the community and in one's self-respect. In addition, types of family, educational attainment of husband and years of marriage could be relevant too. It is important to note that all of these variables have not been explored so far although they are very closely related to 'resources' for empowerment.

In terms of empowerment as control, empowerment as choice (measured by decision making power in the household and bargaining power), empowerment in the community and individual empowerment, it is expected that employment in the RMG industry, earning as much as husband and more than husband, watching television, use of mobile phone, educational attainment and age are very likely to be relevant. Additionally, types of family, educational attainment of husbands and years of marriage may also have some effects in determining the empowerment. It was also expected that the effects of some of these variables might not be the same for the all kinds of empowerment.

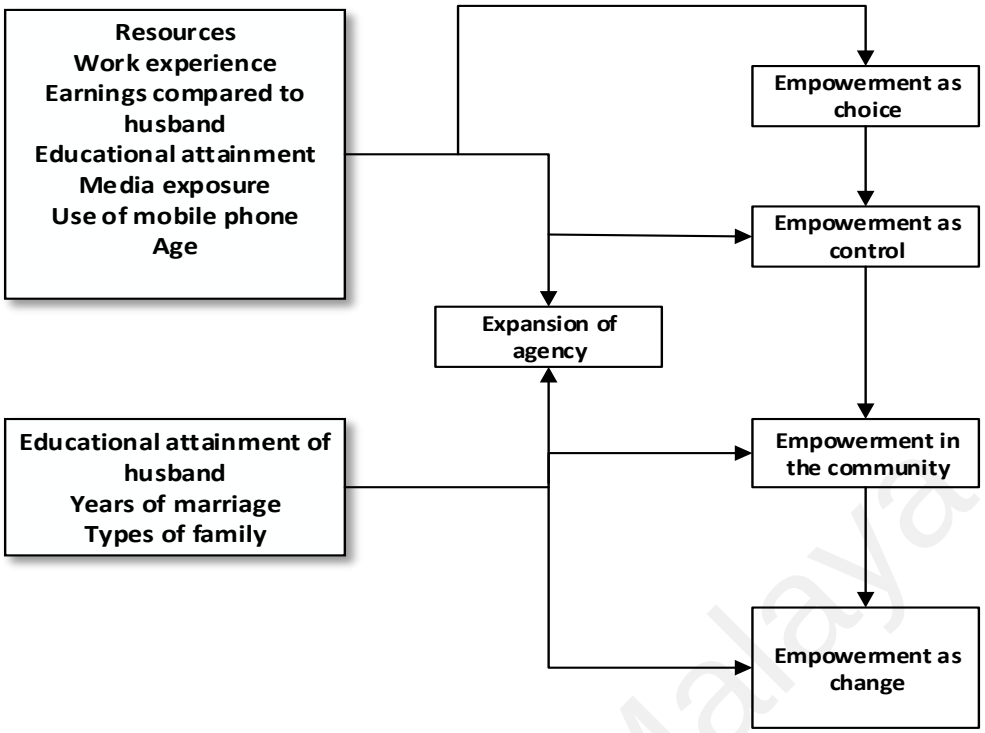

Figure 6.1: Analytical Framework

As conceptualized earlier, empowerment was deemed as an expansion of agency in line with the definition of Amartya Sen (2001). Hence, indicators used were also related to the expansion of agency. There have been a considerable complexities and methodological challenges regarding the comparability of empowerment in different contexts (Narayan, 2005). In spite of the problems, Ibrahim and Alkire (2007) and Oxford Poverty and Human Development Initiatives (OPHI) proposed a set of internationally comparable indicators, in line with the typology used by Rowlands (1997) and the definition of agency of Sen (1985) which were used in the current study. However, this study modified the indicators related to 'individual empowerment' that also fall into the category of '*power within*'. This study considers the importance of the context and it followed the typology proposed by Rowlands (1997). According to Goldman and little (2015), power within refers to ''think differently about a husband's right to beat them and

to question other gendered societal norms'' (p.773). Each indicator was investigated in a different model based on the nature of the dependent variable.

6.5.2 Empirical Results of Empowerment as Choice

6.5.2.1 Measurement

In order to find out the correlates of women empowerment when the focus is on the household decision making power, two variables were used. The first variable is the household decision making power and the second variable is the bargaining power between husband and wife. Decision making within the household is very closely related to the concept of agency (Allendorf, 2007). Here, the empowerment in household decisions making which deals with 'empowerment as choice' (Ibrahim & Alkire, 2007) was measured. In line with the types of empowerment, Ibrahim and Alkire (2007) have categorised it as '*power to'* (generative or productive power) which is a kind of power related to agency within the household. From the empowerment within decision making factor, the indicator is drawn from four questions, following (Allendorf, 2007). Respondents were asked who in their household usually takes the following decisions (1) own health care; (2) making large household purchase; (3) making household purchases for daily needs; and (4) visits to family, friends, and relatives. The possible answers were ranged from 1 to 4 (1 = someone else; 2 = respondent's husband alone; 3 = respondent and husband jointly 4 = respondent alone). Based on the above mentioned questions, two measures of empowerment were created. The first measure of empowerment was created by simply adding the number of decisions a respondent can make either by herself or jointly with her husband. Hence, the first resulting dependent variable is a continuous variable. Cronbach's alpha was calculated to see the internal reliability of this scale, the value of 0.76 shows an acceptable reliability. This then supports the assumption of a

single underlying concept of empowerment based on the four questions of household decision making.

A dummy variable was created to measure the second variable denoting whether the respondent usually has the final say alone, on at least one of the four decisions, following the decision making model of (Mabsout & Van Staveren, 2010) who argued that women who are empowered make more decisions than their husbands. It is also presumed that women who can make decisions on their own are more empowered than those who share decisions. Therefore, the second variable represents the women's bargaining power in the household as it represents the ability of women to make decisions on their own.

Model Specification

Based on the theoretical and empirical literature, empowerment as choice was estimated in the following equation:

$$HD_i = \dot{\gamma}_1 + \dot{\gamma}_2 experiecne_i + \dot{\gamma}_3 ECH_i + \dot{\gamma}_4 media_i + \dot{\gamma}_5 mobile_i + \dot{\gamma}_6 edu_i + \dot{\gamma}_7 age_i + \mu_i \ldots\ldots (6.1)$$

$$bargaining_i = \dot{\gamma}_1 + \dot{\gamma}_2 experiecne_i + \dot{\gamma}_3 ECH_i + \dot{\gamma}_4 media_i + \dot{\gamma}_5 mobile_i + \dot{\gamma}_6 edu_i + \dot{\gamma}_7 age_i + \mu_i \ldots\ldots (6.2)$$

In the above equations HD represents the cumulative number of decision making, women can make in the realm of the household. Experience denotes the work experience in the RMG industry, combining both present and past experiences, as mentioned in the earlier chapters. In this chapter, work experience was grouped into four categories. *Ech* represents the comparison of earnings between the respondents and their husbands. *Media exposure* refers to the frequency of watching television and use of *mobile phone* is a dummy coded as 1 if a respondent uses a mobile phone or coded as 0 if a respondent does

not use a mobile phone. *Edu* represents the educational attainments which are divided into four categories: no education, some primary education, some secondary education and some higher secondary education and above. *Age* is divided into five categories. $\gamma_1 \dot{and}\ \varepsilon_i$ is constant and the error term respectively.

In order to see the effects of other variables derived from the literature on the empowerment as choice or personal agency, three control variables such as husband's education, family type and years of marriage were added, thereby, expanding equations (6.1) and (6.2) as follows:

$$HD_i = \dot{\gamma}_1 + \dot{\gamma}_2 experiecne_i + \dot{\gamma}_3 ECH_i + \dot{\gamma}_4 media_i + \dot{\gamma}_5 mobile_i + \dot{\gamma}_6 edu_i + \dot{\gamma}_7 age_i + \dot{\gamma}_8 familytype_i + \dot{\gamma}_9 husedu_i + \dot{\gamma}_{10} yrsmarriage_i + \mu_i \ldots\ldots (6.1.1)$$

$$bargaining_i = \dot{\gamma}_1 + \dot{\gamma}_2 experiecne_i + \dot{\gamma}_3 ECH_i + \dot{\gamma}_4 media_i + \dot{\gamma}_5 mobile_i + \dot{\gamma}_6 edu_i + \dot{\gamma}_7 age_i + \dot{\gamma}_8 edu_i + \dot{\gamma}_9 familytype_i\ \dot{\gamma}_6 husedu_i + \dot{\gamma}_6 yrsmarriage_i + \mu_i \ldots\ldots (6.2.1)$$

6.5.2.2 Descriptive Statistics

The definition, measurement and classification of the independent variables are showed in Table 6.1.

Table 6.1: Definition of explanatory variables

Explanatory Variables	Variables	Measurement
Employment Related	Work experience	Nominal
	Earnings compare to husbands	Nominal
Socio - demographic	Age	Nominal
	Family type	Dummy
	Marriage duration	Years
	Husband education	Years
Socio - economic	Education	Nominal
Media exposure	Watching TV	Nominal
Mobile phone	Using mobile	Dummy

The VIF and TS are exhibited in Appendix – I. The correlation matrix among the independent variables is also shown in Appendix – J. Table 6.2 presents the cross tabulation of both the dependent variables (household decision making power and bargaining power) with all other categorical variables and the nominal independent variables. Cross tabulation was not presented for whoever that can make only one decision and whoever that cannot make any decision at all. This is because the percentage distribution was very low in both cases. The cross tabulation showed that 92 percent of the workers with work experience of more than 15 years (15–26 years) were able to make decisions in all four aspects of the household decision making, while 25.91 percent of those with less than 5 years working experience (0.04 – 4.83 years) claimed the same. This implies that having more work experience in the RMG industry has an impact on the household decision making power of female workers. It can be seen from Table 6.2 that 76.47 percent of those who reported earning more than their husbands and 51.15 percent of those who reported earning as much as their husbands also participated in household decision making either jointly with their husbands or alone. This is the case for only 24.27 percent of the married women who earned less than their husbands. It is important to mention that a very low number of women (8.42%) reported that their earnings were more than their husbands, while 32.43 percent earned as much as their husbands and 59.16 percent earned less than their husbands.

This study used watching television as a proxy to measure media exposure as this is the most popular media particularly in the urban areas of Bangladesh. According to the Bangladesh Bureau of Statistics (2014), about 90.94 percent of households watch television in the urban areas of Bangladesh. Although the majority of women RMG workers are from rural areas, they reside in the urban areas as the RMG factories are situated only in major cities of Bangladesh. A majority of the respondents or 46.78

percent watch television at least once a week, while 33.66 percent watch every day and 19.55 percent do not watch at all. According to the crosstab, of those who reported watching television every day, 52.94 percent of them were able to make all four decisions. Only 30.69 percent of those who watch TV once a week and 29.11 percent of those who do not watch TV at all were the decision makers for all four decisions either jointly with their husband or alone on their own. Women who owned a mobile phone were also likely to have the decision making power on all four decisions (47.09%). This indicates that they are more empowered than those who do not have a mobile phone.

In the samples of married women who were RMG workers, 14.11 percent reported having no formal education, 49.01 percent have some primary level of education and 36.89 percent have some secondary education or above. Among the respondents who have some higher secondary education and above, 66.67 percent reported that they can make all four decisions in the household, either jointly with their husbands or alone by themselves. Similarly, 37.06 percent and 39.39 percent of the married women workers who possess some secondary education and some primary education respectively were able to make all four household decisions, either jointly with their husbands or by themselves. The average years of education among the RMG workers who were married is 5 years. While there were some married women who do not have any formal education, only one married woman had completed 14 years of education. This is not surprising in the context of Bangladesh as female literacy rate is only 53 per cent in 2010 (Bangladesh Bureau of Statistics, 2011).

As far as age is concerned, the highest age group was likely to be more empowered in household decision making than the middle age and lowest age group. Among 24 respondents who belonged to the age group of 39 and above, 87.50 percent were able to

contribute in the household decision making in all four decisions. About 37.50 percent among 48 women in the age category of 32 -38 and 34.65 percent among 127 women who belonged to the age category of 26-30 were able to make all four decisions, either jointly with their husbands or alone by themselves. This implies that for the higher age category of married women, the percentage of respondents who are able to take part in all four decision making is higher.

In the sample of this study, a vast majority of married RMG workers (62.38%) reside in a joint family household and 37.62 percent of them live in a nuclear family. Among 152 married women workers who lived in the nuclear family, only 51.32 percent were able to take part in all four aspects of decisions in the households while among 252 who lived in a joint family only 29.76 percent take part in all four aspects of decisions in the households. All these difference are significant according to χ-squared test with $p < 0.0001$.

Moving to the result of the cross tabulation between the second dependent variable that is related to the bargaining power of women, the results are presented in the last column of Table 6.2. In the sample, 49.26 percent of the married women workers can make at least one decision alone. It is evident from column 4 of Table 6.2 that among 25 women who have more than 15–26 years of experience, an overwhelming majority, 84 percent, were capable of making at least one decision alone. In comparison, 86.96 percent of the women with 10 – 14.50 years were able to do so. The $\chi 2$ test shows the association which is significant at the one percent (1%) level. It is also evident from Table 6.2 that among 34 women, 82.35 percent among women whose earnings were more than their husbands, have bargaining power. It is also evident that 60.29 percent of the 136 who watched TV every day, 47.09 percent of the 189 who watched TV once a week and 35.44 percent of

the 79 married women workers who do not watch TV, have the bargaining power in their household decision making. In other words, the percentage of women who watched TV every day is the highest. Among 223 married women workers who used a mobile phone as a means of communication, 63.39 percent of them have the bargaining power in the households and the figure also shows that only 31.67 of the 181 workers used a mobile phone.

In looking at the educational attainment, the percentage shown is almost the same in terms of possessing the bargaining power among those who have some secondary education and those with primary level education that is 53.85 percent and 53.03 percent respectively. Additionally, about 66.67 percent of those who have Higher Secondary Education (HSC) and above possess the bargaining power. Among 24 women workers who were of age 39 years and above, about half or 58.33 percent have the bargaining power. Only 50 percent of those between 31-38 years of age and 48.82 percent of those aged between 26 – 30 have the bargaining power.

In focusing on the family types, those who belonged to the nuclear family were more likely to have more bargaining power than those who lived in a joint family. In particular, 61.18 percent of those from a nuclear family in comparison to 42.06 percent of those living in a joint family have the bargaining power. It is to be noted that all of these differences are significant according to the χ-squared test with at least a one percent (1%) level, except for age. The average age of the married women workers was 26 years where the minimum age was 16 and the maximum was 60. The minimum age suggests that child marriage still prevails although this is not surprising in the context of Bangladesh. The mean education was five (5) years, and the average working experience was also five (5) years. A few women or 14.11 percent of the women in the have not attended school

although this too is not unusual in Bangladesh. Nonetheless, the whole sequence of numbers suggest what the average educational attainment among women workers of garment industry in the developing countries and LDCs are like. In addition, their husband's average education was six years which is more than the married women workers of the RMG industry'. Finally, the mean years of marriage (duration of marriage) was six years where the minimum year of marriage was noted to be 1 and the maximum is 35 years.

Table 6.2: Cross Tabulation between dependent and categorical and nominal independent variables (household decision making power)

Independent variables	Has the ability to make decision on all fours decisions alone or jointly (%)	Has the ability to make decision on three decisions alone or jointly (%)	Has the ability to make decision on two decisions alone or jointly (%)	Has the ability to make at least one decisions alone (%)
Work experience				
Experience less than 5 years	25.91	33.18	11.36	35.45
Experience less than 10 years	29.20	46.02	16.81	53.10
Experience less than 15 years	82.61	6.52	2.17	86.96
Experience more than 15 years (15 - 26)	92.00	0.00	0.00	84.00
Earnings compare to husbands				
Less than husband	24.27	32.64	17.15	33.89
As much as husband	51.15	33.59	3.05	68.70
More than husband	76.47	17.65	-	82.35
Watching Television				
Not watching at all	29.11	29.11	10.13	35.44
Once in a week	30.69	37.57	12.17	47.09
Almost everyday	52.94	23.53	10.29	60.29
Use of mobile phone				
Use a mobile phone	47.09	33.18	7.62	63.39
Don't use a mobile phone	26.11	28.73	15.47	31.67
Educational Attainment				
No Education	28.07	15.79	19.30	22.81
Some Primary Education	39.39	33.84	11.11	53.03
Some secondary	38.46	33.57	8.39	53.85
HSC and above	66.67	33.33	-	66.67
Age				
16 -20	28.21	38.46	14.10	46.15
21 - 25	37.80	27.56	12.60	49.61
26 - 30	34.65	34.65	8.66	48.82
31 - 38	37.50	31.25	14.58	50.00
39 and above	87.50	8.33	-	58.33
Family Type				
Nuclear Family	51.32	27.63	7.24	61.18
Joint Family	28.97	34.13	13.49	42.06

Source: Author

6.5.2.3 Method, Findings and Discussions (Empowerment as Choice)

The OLS was used as the analytical method to estimate the equation (6.1) in the first place. The residuals showed the non-normality (See Appendix- K) although there might be the presence of outliers which can make the OLS estimation inefficient. To overcome this, the robust regression method was deployed as introduced by (Yohai, 1987). As mentioned above, the second dependent variable is a dichotomised one and so not having any bargaining power was placed as (0) and having the bargaining power was considered as (1). Therefore, the logit model was applied to investigate the correlates of the bargaining power which is also an important aspect of women empowerment in the household.

Here, the results of empowerment in the realm of household decision making are presented in Table 6.3, as obtained from equation (6.1) and (6.1.1). Table 6.4 reports the results of equation (6.2) and equation (6.2.1). The first model which is model 1 is a parsimonious model where only the respondent's age was controlled. Column 1 includes the result obtained from model 1 and column 2 presents the results yielded after controlling husbands' education, types of family and years of marriage. To check the robustness of the results, both the results of the OLS and Robust Regression (RR) were reported. The logistic regression was also applied to investigate the effects of employment and other variables on the bargaining power in households in Table 6.4. In Table 6.4, the results were obtained from the OLS (Linear Probability Model) also provided in columns 3 and 4. The results of the logistic regression are discussed while explaining the relationship of the bargaining power and other explanatory variables in Table 6.4.

The first variable of interest is the work experience of married women workers in the RMG industry. This was considered as a proxy to measure the participation in

employment in the RMG industry as it is the resources a women can gain while participating in the labour market. It also gives them exposure to the outside world. Here, work experience that is less than five years was used as the reference category. The findings revealed that, compared to less experienced women in employment in the RMG sector, a one unit increase in work experience in the RMG industry can lead to a 0.726 unit increase in decision making power of the women workers who have more than 15 years of experience while it is 0.625 unit and 0.372 unit for those who have work experience of less than 15 years and less than 10 years respectively. It is an established fact that many interventions starting from micro credit programme to employment generation or involving women in any kind of income generating activities have been identified by researchers and policy makers as a way to improve the decision making power and bargaining power of women in the household. Although the work experience variable has been explored only in few women empowerment literature, the association between paid employment and household decision making has been found to be positive and significant for the women of Bangladesh (Kabeer et al., 2011). With respect to the dependent variable of the bargaining power in this study, paid employment also yielded the similar results (see Table 6.4). In particular, it indicates that the more the working experience, the higher the bargaining power. This variable of work experience as a correlate of women empowerment is new even though its importance has been identified in past literature (West, 2006). Only few studies had used the involvement with a Non-Government Organization (NGO) and measured it using a summative scale where the duration of involvement with an organisation was considered as a resource among others (Goldman & Little, 2015). This finding is consistent with the above mentioned literature of women empowerment. According to the theoretical literature, experience can be regarded as a resource (as it provides endowments), hence it supports the theoretical

argument that resource is an integral part to improve the household decision making and bargaining power of women (Kabeer, 1999).

A positive coefficient was found when the relationship between household decision making and the categorical variable earnings in relation to their husbands'. The finding demonstrated that married women who generated income more than their husbands or as much as their husbands, possess higher personal agency in household decision making against the reference category of those who earned less than their husbands. The logistic model regression of Table 6.4 also produced the same results. Particularly, it suggests that the bargaining power is positively associated with the women workers who generated more than their husbands and as much as their husbands when used against the reference category. This indicates that women RMG workers who earned more than their husbands or as much as their husbands have 4.064 and 2.613 times greater bargaining power compared to those who earn less than their husbands, respectively. This finding is in line with the finding of the women involved with two grassroots NGOs in Northern Tanzania (Goldman & Little, 2015).

Media exposure also showed a positive effect on household decision making power and bargaining power. The effect was stronger (coefficient = 0.426) for those who watched TV regularly. In looking at the bargaining power, the logistic model also yielded the same results. This implies that those who watched TV at least once a week have 1.984 times and those who watch TV regularly have 2.530 times higher chances of having bargaining power in contrast to those who do not watch TV at all. This is in line with the findings for the rural women of Bangladesh (Mahmud et al., 2012; Schuler et al., 2010), and for Indian women (Ting et al., 2014). Nonetheless, it contrasts with the findings of Omani

women (Varghese, 2011). This indicates that the determinants of decision making power of women and their bargaining power may vary based on the cultural contexts.

Both models' results (RR and logistic) confirm the positive effect of using a mobile phone on household decision making power and bargaining power of the RMG women workers. It was revealed that using a mobile phone increases the household decision making power. This finding is consistent with a qualitative study in the context of Bangladesh where decision making power in the households was the main concern (Schuler et al., 2010). It was also found that there was a positive and statistically significantly relationship between bargaining power and the use of mobile phone. In particular, the result revealed that using a mobile phone provided 2.449 times more bargaining power than those who do not use it, among the married RMG workers. Thus far, only one literature had explored this relationship in the context of the Indian women and men. The finding of the current study is consistent with the result of (Lee, 2009)

Consistent with other findings, higher level of education is positively associated with decision making power and bargaining power when used against the reference category of no education (who never attended school). The findings of decision making power is consistent with (Acharya et al., 2010) for the married women of Nepal. Theoretical literature also supports this finding (Kabeer, 1999). Theoretical literature (Lundberg & Pollak, 1993; Manser & Brown, 1980; McElroy & Horney, 1981) consider education as a resource through which women can achieve bargaining power within the household. The logistic regression indicates that compared to no formal education, having some primary education and some secondary education contributes to increase the possibility of having bargaining power by 4.885 times, 5.140 times more than no education among

married women RMG workers, respectively. Higher secondary education and above was not found to be statistically significant although it showed the expected positive sign.

As mentioned, the majority of married women workers (67 percent) belong to the lowest category of age (21 – 30 years). The lowest category (16-20 years) was considered as the reference category and used as the control variable in the parsimonious model. It was found that there was a positive and significant association between the highest category of age (39 and above) and household decision making. However, it was also found to be significant with the bargaining power and showed the right sign. This implies that the effect of the highest category of age is stronger than others in enhancing the household decision making power and bargaining power; this finding conforms to the previous findings of Bangladesh (Mahmud et al., 2012).

The control variable of husband education also showed a positive association with decision making power and bargaining power by at least 10 percent level. Mainuddin, Begum, Rawal, Islam, and Islam (2015) found a positive and significant relationship between husband education and household decision making and bargaining power. The current study also found a positive association between types of family, whether it is a nuclear family or joint family and years of marriage. These two variables had been used in women empowerment literature by previous researchers (for e.g. Allendorf, 2012). The current study found that women who resided in a nuclear family were more empowered in household decision making and they possessed more bargaining power than those who lived in a joint family. This is consistent with the existing literature for Indian women (Keera Allendorf, 2012).

Table 6.3: Results of Empowerment as choice (Household decision making)

Explanatory variables	RR	OLS	RR	OLS
Work experience : Experience less than 5 years (0.04 – 4.83 years)	RC	RC	RC	RC
Experience less than 10 years (5 – 9.50 years)	0.379***	0.461***	0.372***	0.464***
	(0.129)	(0.130)	(0.129)	(0.126)
Experience less than 15 years (10 – 14.50 years)	0.725***	0.699***	0.625***	0.630***
	(0.203)	(0.209)	(0.203)	(0.211)
Experience more than 15 years (15 - 26)	0.884***	0.941***	0.726***	0.796***
	(0.249)	(0.224)	(0.251)	(0.233)
Earnings compare to husbands :less than husband	RC	RC	RC	RC
As much as husband	0.504***	0.335**	0.484***	0.307**
	(0.138)	(0.140)	(0.137)	(0.140)
More than husband	0.720***	0.620***	0.612***	0.493**
	(0.208)	(0.195)	(0.210)	(0.194)
Watching Television: Not watching at all	RC	RC	RC	RC
Once in a week	0.279**	0.376**	0.281**	0.350**
	(0.139)	(0.164)	(0.138)	(0.160)
Almost everyday	0.487***	0.560***	0.426***	0.484***
	(0.147)	(0.166)	(0.147)	(0.163)
Use of mobile phone : Don't Use a mobile phone	RC	RC	RC	RC
Use a mobile phone	0.447***	0.458***	0.354***	0.349***
	(0.106)	(0.111)	(0.109)	(0.114)
Educational Attainment: No education	RC	RC	RC	RC
Some primary education	0.662***	0.514***	0.621***	0.492***
	(0.156)	(0.167)	(0.155)	(0.160)
Some secondary education	0.577***	0.401**	0.571***	0.418**
	(0.165)	(0.171)	(0.165)	(0.164)
HSC and above	1.254***	1.219***	1.185***	1.189***
	(0.446)	(0.274)	(0.446)	(0.289)
Age : 16 - 20	RC	RC	RC	RC
21 - 25	0.036	0.032	0.028	0.020
	(0.147)	(0.152)	(0.148)	(0.149)
26 - 30	0.084	0.156	-0.011	0.039
	(0.149)	(0.150)	(0.158)	(0.155)
31 - 38	0.126	0.139	0.025	0.019
	(0.191)	(0.205)	(0.203)	(0.220)
39 and above	1.142***	1.204***	0.971***	0.989***
	(0.245)	(0.211)	(0.270)	(0.255)
Family Type : joint family	RC	RC	RC	RC
Nuclear Family			0.217**	0.259**
			(0.110)	(0.111)
Educational attainment of husband			0.033**	0.029**
			(0.015)	(0.014)
Years of marriage			0.028**	0.032**
			(0.013)	(0.013)
_cons	0.839***	0.796***	0.430	0.361
	(0.234)	(0.268)	(0.261)	(0.289)
N	404	404	404	404
F	13.740	13.990	12.382	12.731
R2	0.347	0.311	0.367	0.338
Adjusted R2	0.322	0.284	0.337	0.307

Source: Author's Survey; Note: Robust Standard errors in parentheses for OLS; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Dependent variable: household decision making power.

Table 6.4: Results of empowerment as choice (Bargaining power)

Explanatory variables	Logit	OLS	logit	OLS
	OR	Coefficient	OR	Coefficient
Work experience : Experience less than 5 years (0.04 – 4.83 years)	RC	RC	RC	RC
Experience less than 10 years (5 – 9.50 years)	2.080***	0.129***	2.214***	0.126***
	(2.51)	(0.055)	(2.62)	(0.055)
Experience less than 15 years (10 – 14.50 years)	4.568**	0.256***	4.143***	0.216***
	(2.78)	(0.079)	(2.52)	(0.078)
Experience more than 15 years (15 - 26)	5.920**	0.278***	4.563***	0.214***
	(2.60)	(0.094)	(2.13)	(0.093)
Earnings compare to husbands :less than husband	RC	RC	RC	RC
As much as husband	2.753***	0.206**	2.613***	0.191**
	(3.24)	(0.062)	(2.98)	(0.062)
More than husband	5.289***	0.302***	4.064***	0.237**
	(3.16)	(0.089)	(2.59)	(0.087)
Watching Television: Not watching at all	RC	RC	RC	RC
Once in a week	2.018**	0.115**	1.984*	0.102*
	(2.03)	(0.056)	(1.92)	(0.160)
Almost everyday	2.973***	0.187***	2.530**	0.153**
	(3.01)	(0.058)	(2.48)	(0.058)
Use of mobile phone : Don't Use a mobile phone	RC	RC	RC	RC
Use a mobile phone	3.181***	0.216***	2.449***	0.167***
	(4.69)	(0.046)	(3.44)	(0.047)
Educational Attainment: No education	RC	RC	RC	RC
Some primary education	4.414***	0.231***	4.885***	0.219***
	(3.52)	(0.055)	(3.55)	(0.054)
Some secondary education	4.773***	0.236**	5.140***	0.227***
	(3.49)	(0.060)	(3.46)	(0.059)
HSC and above	6.303*	0.323	6.227	0.289***
	(1.83)	(0.226)	(1.69)	(0.205)
Age : 16 - 20	RC	RC	RC	RC
21 - 25	1.373	0.045	1.416	0.041
	(0.89)	(0.061)	(0.93)	(0.060)
26 - 30	1.478	0.065	1.245	0.024
	(1.10)	(0.064)	(0.57)	(0.066)
31 - 38	1.498	0.053	1.214	0.009
	(0.92)	(0.088)	(0.40)	(0.097)
39 and above	2.549	0.162***	1.997***	0.094***
	(1.65)	(0.112)	(1.09)	(0.123)
Family Type : joint family	RC	RC	RC	RC
Nuclear Family			1.634*	0.075
			(1.84)	(0.047)
Educational attainment of husband			1.133***	0.029**
			(3.37)	(0.014)
Years of marriage			1.070**	0.011*
			(2.10)	(0.006)
_cons	0.019***	-0.170**	0.006***	-0.303***
	(-6.46)	(0.066)	(-7.15)	(0.071)
N	404	404	404	404
Pseudo R2/R2	0.242	0.431	0.277	0.423

Source: Author

Notes: z-statistics in parentheses for logit model and robust standard errors in parentheses for OLS; Significance level *** p<0.01, ** p<0.05, * p<0.1

Empirical results (Empowerment as control)

6.5.2.4 Measurement

As mentioned in the earlier section, the concept of empowerment is context specific. In this study, the indicator used by Ibrahim and Alkire (2007) as empowerment was modified slightly. The respondents were asked whether they had control over their income. Thus, empowerment as control was captured by the following question:

How much control do you have over your own income that affect your decision on spending?

(i) No control at all = 1; (ii) control over very few spending decisions from my own income = 2; (iii) control over most spending decisions from my own income = 3; (iv) I have full control on my income = 4.

The variables were then dichotomised where no control and control on very few decisions were coded as 0 and control over most decisions and full control were coded as 1.

This measure depicts the *'power over'* according to (Ibrahim & Alkire, 2007). The importance of this kind of power is crucial in the context where women are working outside home but may not have control over their own income. It is a common scenario for the women working in the RMG sector particularly in the context of Bangladesh where women workers handed over all their income to their husbands who also took the decisions on how to utilise the money (Habib, 2014; Zbyszewska, 2014).

Model Specification

The dependent variable is a dichotomised one. In light of the theoretical consideration based on agency and empowerment, the equation of *power as control* was specified as follows:

$$COI_i = \dot{\alpha}_1 + \dot{\alpha}_2 experiecne_i + \dot{\alpha}_3 ECH_i + \dot{\alpha}_4 media_i + \dot{\alpha}_5 mobile_i + \dot{\alpha}_6 edu_i + \dot{\alpha}_7 age_i + \mu_i \ldots \ldots (6.3)$$

The results obtained from the probit model was also examined to see if they were consistent after controlling the equation (6.3). This was done by using variables such as types of family, educational attainment of husbands and years of marriage. Thus, the equation was expanded as follows:

$$COI_i = \dot{\alpha}_1 + \dot{\alpha}_2 experiecne_i + \dot{\alpha}_3 ECH_i + \dot{\alpha}_4 media_i + \dot{\alpha}_5 mobile_i + \dot{\alpha}_6 edu_i + \dot{\alpha}_7 age_i + \dot{\alpha}_8 edu_i + \dot{\alpha}_9 familytype_i \; \dot{\alpha}_6 husedu_i + \dot{\alpha}_6 yrsmarriage_i + \mu_i \ldots (6.3.1)$$

Where *COI* denotes control over income. All explanatory variables have been already discussed in the previous section. Cross tabulation between empowerment as control with other categorical variables are given in the following section.

6.5.2.5 Descriptive Statistics

It can be seen from Table 6.5 that a majority (89.13%) of the respondents who have more than 10 years working experience in the RMG sector (10-14.50 years) and more than 15 (15-26 years) years' experience (88%), have control over their own income. Likewise, 79.41 percent of those who earned more than their husbands have control and 67.94 percent of those who earned as much as their husbands have control over their own

income. Among 136 respondents who watched TV every day, about 52.21 percent of the married women workers have control over their income. Only 32.91 percent of the 79 women workers who do not watch TV at all had control over their income. It is noteworthy to mention that among the respondents, only 19.55 percent do not watch TV at all while the majority of married women workers watched TV at least once a week, as mentioned above. Furthermore, among 223 married women RMG workers, about half or 57.40 percent who used a mobile phone have control over their own income.

In focusing on the educational attainment, 66.67 percent of those with higher secondary education and above have control over their income. In comparison, only 51.05 percent of those with some secondary education and 45.45 percent of those with some primary education had control over their income. Interestingly, half of the 78 respondents or 56.41 percent who belonged to the lowest category of age (16-20) had control over their income. About 37.50 percent of the 24 workers in the oldest age group have control over their income. Finally, about half or 59.87 percent of the women workers who live in nuclear families have control over their income and only 34.92 percent who lived in joint families have control over their own income.

A conventional statistical method Chi square test was performed to test the significant difference among the various subgroups of the categorical and nominal variables. A *p value* which was significant at 5 percent level was attained for all the variables except age.

Table 6.5: Cross tabulation between power as control and other categorical variables

Explanatory variables	Control over income (%)	*P* value
Work experience : Experience less than 5 years (0.04 – 4.83 years)	29.55	
Experience less than 10 years (5 – 9.50 years)	45.13	<0.0001
Experience less than 15 years (10 – 14.50 years)	89.13	
Experience more than 15 years (15 - 26)	88.00	
Earnings compare to husbands :less than husband	26.36	
As much as husband	67.94	<0.0001
More than husband	79.41	
Watching Television: Not watching at all	32.91	
Once in a week	43.39	<0.05
Almost everyday	52.21	
Use of mobile phone : Don't Use a mobile phone	28.18	<0.0001
Use a mobile phone	57.40	
Educational Attainment: No education	21.05	
Some Primary Education	45.45	<0.01
Some secondary Education	51.05	
HSC and above	66.67	
Age : 16 - 20	56.41	
21 - 25	41.73	>0.10
26 - 30	40.94	
31 - 38	43.75	
39 and above	37.50	
Family Type : joint family	34.92	<0.0001
Nuclear Family	59.87	

Source: Author

6.5.2.6 Method, Findings and Discussion (Empowerment as control)

This section critically discusses the relationship between empowerment and control, that is, what was measured by asking the question whether a respondent has control over her income while spending the income earned. As the residuals were normally distributed and the dependent variable was binary, the probit model was deployed for this purpose. The histogram of the residuals are shown in Appendix L. This section also reports the OLS results to show the robustness of the result, although the standard error may change a little. Nonetheless, the expected sign remains the same.

Table 6.6 presents the results obtained from the probit model. Model 1 is a parsimonious model where only age was used as a control variable, as before. Equations 6.3 and 6.3.1

were estimated while columns 1 and 3 displayed the results of the probit model and columns 2 and 4 illustrated the results of the OLS regression.

The result of the probit model showed that the coefficient of working experience is positive and significant at the one percent (1%) level except for experience of less than 10 years although it showed a positive sign. This indicates that workers with higher experience were more likely to have control over their income in comparison to those with less experience. The estimated coefficient of having experience of more than 15 years was 1.185 and the predicted probability of having control over income was 0.79 and it was 0.33 for those with experience of less than 5 years. This variable signifies the positive relationship between empowerment as control and involvement with the wage employment particularly within the RMG industry. Thus far, only one study (Sivasankaran, 2014) had explored this relationship in the context of the workers of Indian Textile industry and the finding of this study is consistent.

As expected, a statistically significant and positive relationship was found between earnings as compared to husbands and control over income. Here, earnings less than husbands was used as the reference category as before. Both categories of these variables showed the positive sign and was found to be statistically significant at the one percent (1%) level when measured against the reference category. The coefficient estimates of the earnings for more than husbands and as much as husbands were 0.803 and 0.751 respectively while the predicted probabilities were 0.62 and 0.60 respectively. According to West (2006), monetary contribution to the family is one of the important features that delineates women who are involved in wage employment. In this perspective, it can be said that earnings more than or as much as husbands increase the likelihood of the women to have control over their income.

Media exposure also has a positive relationship with control over income. The estimated coefficient of media exposure among women who watched TV every day was 0.473 while the predicted probability of having control over their income was 0.47. The predicated probability of those who do not watch TV at all but have control over their income was 0.29. This suggests that media exposure has a positive influence on control over income of married women working in the RMG industry of Bangladesh. This finding is consistent with the findings of rural women of Bangladesh (Mahmud et al., 2012). The coefficient estimate of the mobile phone users was also found to be positive and significant at the one percent (1%) level. This indicates that the users of mobile phones were more likely to have more control over their income than those who do not use mobile phones. The estimated coefficient for these women was 0.547 while the predicted probability was 0.52.

As theorized, women workers who attained more education were more likely to have control over use of their income. This implies that they are more empowered than others. The probit model showed that, against the reference category, the estimated coefficients for those with some primary education, some secondary education and some higher secondary education and above were 0.806, 1.079 and 1.086, respectively although the highest category was not statistically significant after the addition of control variables. The predicated probability of no education was 0.16 which is very low while for higher secondary education and above, it was 0.54. In their study, Malhotra and Mather (1997) found that a higher level of educational attainment is a critical factor for making financial decisions among Sri Lankan women. Although in the mentioned study, control over income was not considered as a dependent variable, these were accumulated as a component of the women's financial decision making power. In another study, Frankenberg and Thomas (2001) emphasised that control over economic resources is an

integral part of power as it is labour income earned by the individuals, thus having some control over their earned income is one of the potential measures of power.

Against the reference category which was the lowest category of age (16-20), the estimated coefficients of the category for 21-25 years and 26–30 years showed a negative sign. The result found it to be statistically significant at least at the 10 percent level. Although the other categories showed the negative signs too, they were not statistically significant. The predicated probability stood at 0.55 for the age group between 16 – 20 years and 0.38 for the age group between 26-30. This indicates that the likelihood of those having control over their income declines with the respondent's age. The younger they are, the less control they have. Another study on Bangladesh conducted by Mahmud et al. (2012) did not find any relationship between the control over resources and age.

The variable, types of family, showed that residing in a nuclear family increases the likelihood of being empowered when empowerment is considered as control over resources/income. The predicated probability of having control over income corresponding to joint family was 0.36 which is low in comparison to the predicated probability of the nuclear family which was 0.56. While the husbands' education showed a positive and statistically significant association with control over income, years of marriage showed the expected sign although it was not statistically significant.

Table 6.6: Results of the Probit and OLS model (Empowerment as control)

Explanatory variables	Probit	OLS	Probit	OLS
Work experience : Experience less than 5 years (0.04 – 4.83 years)	RC	RC	RC	RC
Experience less than 10 years (5 – 9.50 years)	0.260	0.066	0.295	0.070
	(0.179)	(0.058)	(0.183)	(0.056)
Experience less than 15 years (10 – 14.50 years)	1.079***	0.300***	1.003***	0.269***
	(0.320)	(0.081)	(0.326)	(0.081)
Experience more than 15 years (15 - 26)	1.229***	0.313***	1.185***	0.269***
	(0.426)	(0.102)	(0.425)	(0.098)
Earnings compare to husbands :less than husband	RC	RC	RC	RC
As much as husband	0.770***	0.258***	0.751***	0.245***
	(0.191)	(0.064)	(0.194)	(0.062)
More than husband	0.991***	0.322***	0.803**	0.257***
	(0.321)	(0.095)	(0.329)	(0.097)
Watching Television: Not watching at all	RC	RC	RC	RC
Once in a week	0.418**	0.106**	0.440**	0.098*
	(0.204)	(0.053)	(0.207)	(0.052)
Almost everyday	0.529**	0.132**	0.473**	0.104*
	(0.213)	(0.057)	(0.216)	(0.056)
Use of mobile phone : Don't Use a mobile phone	RC	RC	RC	RC
Use a mobile phone	0.715***	0.202***	0.547***	0.151***
	(0.147)	(0.044)	(0.153)	(0.045)
Educational Attainment: No education	RC	RC	RC	RC
Some Primary Education	0.784***	0.184***	0.806***	0.172***
	(0.233)	(0.053)	(0.240)	(0.053)
Some secondary education	1.036***	0.247***	1.079***	0.246***
	(0.252)	(0.059)	(0.264)	(0.059)
HSC and above	1.244**	0.371*	1.086	0.318
	(0.632)	(0.216)	(0.731)	(0.248)
Age : 16 - 20	RC	RC	RC	RC
21 - 25	-0.470**	-0.137**	-0.399*	-0.123**
	(0.221)	(0.061)	(0.224)	(0.059)
26 - 30	-0.427*	-0.113*	-0.429*	-0.121*
	(0.218)	(0.063)	(0.229)	(0.065)
31 - 38	-0.328	-0.106	-0.305	-0.102
	(0.276)	(0.085)	(0.292)	(0.089)
39 and above	-0.501	-0.141	-0.414	-0.139
	(0.338)	(0.100)	(0.368)	(0.108)
Family Type : joint family	RC	RC	RC	RC
Nuclear Family			0.485***	0.132***
			(0.159)	(0.046)
Educational attainment of husband			0.062***	0.016***
			(0.022)	(0.006)
Years of marriage			0.012	0.004
			(0.017)	(0.005)
_cons	-1.962***	-0.029	-2.559***	-0.146**
	(0.312)	(0.067)	(0.353)	(0.069)
N	404	404	404	404
Pseudo R2/R2	0.286	0.332	0.319	0.362

Source: Author

Notes: Robust standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; Dependent variable: Control over income.

Empirical Results (Empowerment in the Community)

6.5.2.7 Measurement

This section presents the results of the perceived empowerment at the communal level. According to Ibrahim and Alkire (2007), the question related to measure empowerment at the communal level also captures "the ability of people to change things collectively in their community" (p. 29). This reflects their power with other community members. As mentioned before, the econometric model follows the nature of the dependent variable. The empowerment at the community level is captured by the following question which is in line with (Ibrahim & Alkire, 2007; Trommlerová et al., 2015).

Do you feel that people like yourself can generally change things in your community if you want to?

a. No, not at all = 1; b. Yes, but with a great of difficulty = 2; c. Yes, but with a little difficulty = 3; d. Yes, fairly easily = 4 and e. Yes, very easily = 5.

We then aggregate the above responses into three categories such as "No, not at all" = 1; "Yes, with difficulty" = 2 and "Yes, very easily" = 3.

The above responses were then aggregated into three categories such as "No, not at all" = 1; "Yes, with difficulty" = 2 and "Yes, very easily" = 3.

The response (b) and response (c) were combined into "Yes, with difficulty and response (d) and (e) were combined into "Yes, easily".

The resulting variable is ordinal and in particular the dependent variable has a sequential order, with more than two categories. Moreover, a value should be higher than the

previous one. Therefore, the OR was estimated by using the ordered logit model for a better interpretation.

Model Specification

Based on the above theoretical assumption of ordered logistic regression, the communal empowerment function was estimated as follows:

$$\text{CE}*_{\text{i}} = \dot{\alpha}_{\text{ı}} + \dot{\alpha}_2\text{experiecne}_{\text{i}} + \dot{\alpha}_3\text{ech}_{\text{i}} + \dot{\alpha}_4\text{media}_{\text{i}} + \dot{\alpha}_5\text{mobile}_{\text{i}} + \dot{\alpha}_6\text{edu}_{\text{i}} + \dot{\alpha}_7\text{age}_{\text{i}} + \mu_{\text{i}} \ldots \ldots (6.4)$$

Where $CE*$ is a latent variable as what is observed in the different categories of ordered categorical variables which represent the communal empowerment. Therefore, equation (6.4) is estimated by using an ordered logit estimator since there is an inherent ordering in the measure of communal empowerment, $CE*$

The same controls were used in this analysis as mentioned in the previous sections. Hence, we expand the equation in the following way:

$$CE*_i = \dot{\alpha}_{\text{ı}} + \dot{\alpha}_2\text{experiecne}_{\text{i}} + \dot{\alpha}_3\text{ech}_{\text{i}} + \dot{\alpha}_4\text{media}_{\text{i}} + \dot{\alpha}_5\text{mobile}_{\text{i}} + \dot{\alpha}_6\text{edu}_{\text{i}} + \dot{\alpha}_7\text{age}_{\text{i}} + \dot{\alpha}_8\text{edu}_{\text{i}} + \dot{\alpha}_9\text{familytype}_{\text{i}}\ \dot{\alpha}_6\text{husedu}_{\text{i}} + \dot{\alpha}_6\text{yrsmarriage}_{\text{i}} + \mu_{\text{i}} \ldots (6.4.1)$$

6.5.2.8 Descriptive Statistics

The cross tabulation was first used for the analysis. Table 6.7 shows the percentage distribution of the categorical variables in relation to the dependent variable. It can be seen that among 25 married women workers with working experience of more than 15 years, 68 percent perceived that they can change things easily in the community if they want to, while 63.04 percent and 31 percent of those with experience less than 15 years and less than 10 years, said the same, respectively. It is evident that a vast majority of

married women workers or 61.76 parent who earn more than their husbands possess empowerment in the community. This is more than those who earn as much as their husband or 39.69 percent while those earning less than their husbands amounted to only 20.08 percent. Turning to percentage distribution of media exposure (watching television) the degree of communal empowerment was noted to be highest among those who watched TV almost every day (36.03%) and lowest among those who did not watch TV (22.78%). A majority of the respondents who used mobile phone (42.60%) reported that they can change things easily if they want to in their community, while for those who did not use mobile phones, it was 14.36 percent. Likewise, among those who used mobile phone, 31.84 percent perceived that they can change things but with difficulty while 25.56 percent perceived that they cannot change things in the community. In looking into the percentage distribution of the respondents in relation to their educational attainment, it is evident that 50 percent of women who attained higher secondary education and above perceived that they can change things easily in the community. Amongst those who have some secondary education, 30.77 percent of them and 33.57 of those with some secondary education and above perceived that they can change things easily and can change with difficulty respectively. Of the 198 married women workers who possess some primary level of education, 30.81 percent believed that they can change things easily in the community. Among 78 women workers who belonged to the lowest category of age (16-20), 47.44 percent believed that they are capable to change things easily in the community, while it was only 12.50 percent among those who belonged to the highest category of age (39 and above). Hence, it can be said that the youngest group of women workers are more confident in regard to communal empowerment. The perception of being able to change anything in the community easily is highest among those who lived

in nuclear families (38.82%) and the perception of those not being able to change easily is highest among those who lived in joint families (24.60%).

Table 6.7: Percentage distribution of communal empowerment and categorical explanatory variables

Explanatory variables	Change Easily (%)	Change with difficulty (%)	Not at all (%)	*P* value
Work experience : Experience less than 5 years (0.04 – 4.83 years)	18.18	33.18	48.64	<0.0001
Experience less than 10 years (5 – 9.50 years)	30.97	51.33	17.70	
Experience less than 15 years (10 – 14.50 years)	63.04	28.26	8.70	
Experience more than 15 years (15 - 26)	68.00	16.00	16.00	
Earnings compare to husbands :less than husband	20.08	35.15	44.77	<0.0001
As much as husband	39.69	42.75	17.56	
More than husband	61.76	23.53	14.71	
Watching Television: Not watching at all	22.78	32.91	44.30	
Once in a week	28.57	40.21	31.22	<0.1000
Almost everyday	36.03	33.82	30.15	
Use of mobile phone : Don't Use a mobile phone	14.36	42.54	43.09	<0.0001
Use a mobile phone	42.60	31.48	25.56	
Educational Attainment: No education	22.81	21.05	56.14	
Some Primary Education	30.81	43.43	25.76	<0.0500
Some secondary education	30.77	33.57	35.66	
HSC and above	50.00	33.33	16.67	
Age : 16 - 20	47.44	24.36	28.21	
21 - 25	29.13	38.58	32.28	<0.5000
26 - 30	23.62	44.09	32.28	
31 - 38	29.17	31.25	39.58	
39 and above	12.50	37.50	50.00	
Family Type : joint family	24.60	37.70	37.70	<0.0500
Nuclear Family	38.82	34.87	26.32	

Source: Author

6.5.2.9 Method, Findings and Discussions (empowerment in the community)

Table 6.8 illustrates the results obtained from ordered logistic regression. As explained earlier, the dependent variable has a sequential order hence, the reason for using the ordered logistic model which can estimate a single equation over the various levels of dependent variables. The first column of Table 6.8 presents the estimates of the communal empowerment functions which were obtained from the parsimonious model. Here, only the respondents' age was controlled. The second column displays the estimates when

variables such as types of family, educational attainment of husband in years and years of marriage were used.

From Table 6.8, it can be seen that work experience has a positive and significant effect on perceived communal empowerment. The estimated OR indicating a woman's communal empowerment increases significantly with the number of years of work experience in the RMG sector. This effect prevails in model 1 and model 2, after the equation (6.4.1) was controlled. In particular, for those whose work experience was more than 10 years, the estimates suggest that for one unit increase in work experience, the odds of the high category versus the middle and low categories of communal empowerment combined, is 4.984 times greater, given that the other variables are constant. Similarly, for one unit increase in work experience, the odds of the high category and the middle category versus the low category of communal empowerment is 4.984 times greater, provided the other variables are held constant. For those who gained a work experience of more than 10 years, results showed that the predicted probability of being in the low level of communal empowerment is 0.12 (which is very low) while the predicated probability of being in the high level of communal empowerment is 0.46 and the predicated probability for the middle category is only 0.38 for those with more than 10 years working experience. Hence, the predicted probabilities also increase as the communal empowerment of the married women increases.

The earning comparison of the RMG married women in relation to their husbands showed a positive sign. Although the married women whose earnings were equivalent to their husbands' were not found to be significant, it showed a positive sign. It appears that women who earned more than their husbands were more likely to have a higher level of communal empowerment. The predicated probability of these women being in the high

level communal empowerment is 0.42 if the respondents earned more than their husbands and 0.22 if their earnings were less than their husbands or were very low. Likewise, the predicted probabilities of being in the middle and low level communal empowerment for those who earned more than their husbands is 0.42 and 0.15 respectively.

From the watching television variable, it was found that watching television once a week and watching television everyday has a positive and significant association when compared to not watching television at all. In particular, the likelihood of feeling any degree of empowerment ('change with difficulty' or 'change easily') as compared to no communal empowerment at all is 1.943 times higher for those who watched TV at least once a week and 2.023 times higher for those who watched TV every day, as compared to those who do not watch TV at all, holding all others variables constant. Similarly, for a one unit increase in watching TV once a week and watching TV every day, the odds of high versus middle and low level communal empowerment is 1.943 and 2.023 times greater, respectively, given that all the other variables were held constant. The predicted probability of being in the high level communal empowerment is 0.28 for those who watched TV every day and 0.27 for those who watched TV once a week. It also seems that the predicted probabilities were almost similar for both categories although the difference was not much, with the probability being even lower for those who do not watch television at all, that is, 0.41. It is worth mentioning that this variable has not been tested in the literature especially for finding out the correlates of communal empowerment. Based on this account, it can be said that watching television plays an important role towards increasing the perceived empowerment of women in the community.

The next correlate of interest is the use of mobile phone. The result obtained from the ordered logistic model suggests that being a user of a mobile phone increases the probability of being in a higher level communal empowerment especially for those who used a mobile phone. The odds of high level versus middle and low level empowerment is 2.30 times higher, given that the other variables are held constant. Likewise, the odds of the combined high and middle level communal empowerment versus low communal empowerment is 2.30 times higher for those who use a mobile phone as compared to those who do not. As can be seen, the predicted probability of being in the highest category of communal empowerment is 0.33 times for respondents who are mobile phone users and 0.18 otherwise. For the middle category communal empowerment, the predicted probabilities are 0.45 and 0.43, while for the lowest level communal empowerment, the predicted probabilities are 0.21 and 0.38 respectively. Therefore, if respondents do not use a mobile phone, the predicated probability of being empowered in the community decreases. Hence, it can be concluded that mobile phones can contribute towards increasing the communal empowerment of married RMG women workers.

This study also noted that higher levels of educational attainment promotes communal empowerment of the married RMG women workers. Having some primary education (OR = 2.60), some secondary education (OR = 2.06) and higher secondary and above level of education (OR = 4.69) can enhance their communal empowerment as compared to no formal education. The predicted probability of being at the highest level of educational attainment (higher secondary and above) is 0.43 while for the middle category it is 0.42 and for the lowest category, the communal empowerment is only 0.15. This implies that the predicated probabilities of being empowered increases when women workers are in the highest level of education. In contrast, those who did not attend schools were significantly less likely to change anything in the community (predicted probability

is 0.45) while for those with primary, secondary and higher secondary education, the likelihood of being able to change the community is 0.24, 0.28 and 0.15 respectively. It is worthy to mention that the predicted probabilities of being at the high level of empowerment is 0.29 for those with some primary level of education and 0.25 for those with secondary level education. Though both the predicated probabilities were not that high, the predicted probability for those with primary level of education was higher than those with secondary level of education. Therefore, it can be deduced that communal empowerment is higher for those who were more educated, a finding that is consistent with the existing literature (Trommlerová et al., 2015).

From the age variable, this study was able to reveal that the older the respondents are, the lower their level of communal empowerment. Among those in the oldest age group, the predicted probability of feeling completely empowered is very low (0.12) while it is highest amongst those in the lower age group (0.39). Nonetheless, the predicted probabilities of experiencing or feeling difficulties in changing things was almost the same for all the age groups except the oldest age group. In addition, those who belonged to the older category of age (the predicted probability is 0.49) were significantly more prone to being unable to change anything in the community than those in other age categories. In particular, the predicted probabilities of not being able to change the community for those in the age groups of 16 – 20, 21- 25, 26 – 30, and 31 – 38 were 0.17, 0.28, 0.30, and 0.33 respectively. It seems evident that the strong effect prevails among those in the younger age group women RMG workers. This study did not find any statistically significant relationship between communal empowerment and the control variable of types of family, years of schooling and years of marriage.

Based on all that had been uncovered, it is important to bear in mind that the ordered logit model estimates a single equation overall, for all levels of the dependent variables. This is done under the assumption of the proportional odds or parallel regression. In the context of this study, the Brant test was conducted (Appendix - M) and it showed that the ratio chi-square value of 17.24 obtained from the ordinal logit mode is not very distinct from the 15.36 year group that was also obtained from the 'Brant test'. The *p-value* obtained from the Brant test was found to be significant at the 10 percent level. Moreover, the binary variable - use of a mobile phone and the categorical variable – age, were found to be significant. This implies that these two variables violate the assumption of the parallel regression. Therefore, an alternative procedure was estimated. In this case, the generalised ordered logit model was applied as it does not require the assumption of the parallel regression. The results of the generalised ordered logit model is displayed in Appendix N. When estimated, it shows the results which are specific to the main variables of interest – experience in the RMG industry, earnings in relation to husbands, watching television, use of mobile phone and educational attainment and age – remained broadly unchanged in almost all the equations, standing at least at the 10 percent level. Hence, the analysis that was derived from the ordered logit model was maintained throughout the study.

Table 6.8: Results of the Ordinal Logit and OLS Model (empowerment in the Community)

Explanatory variables	ologit	OLS	ologit	OLS
Work experience : Experience less than 5 years (0.04 – 4.83 years)	RC	RC	RC	RC
Experience less than 10 years (5 – 9.50 years)	2.55***	0.353***	2.573***	0.350***
	(3.83)	(0.088)	(3.83)	(0.088)
Experience less than 15 years (10 – 14.50 years)	5.157***	0.353***	4.833***	0.554***
	(4.03)	(0.088)	(3.83)	(0.140)
Experience more than 15 years (15 - 26)	5.984***	0.580***	4.984***	0.538***
	(3.36)	(0.139)	(2.96)	(0.193)
Earnings compare to husbands :less than husband	RC	RC	RC	RC
As much as husband	1.317	0.100	1.278	0.091
	(1.07)	(0.095)	(0.95)	(0.094)
More than husband	2.823**	0.338**	2.514**	0.299*
	(2.43)	(0.156)	(2.12)	(0.160)
Watching Television: Not watching at all	RC		RC	RC
Once in a week	2.009**	0.240***	1.943	0.229**
	(2.54)	(0.089)	(2.39)	(0.091)
Almost everyday	2.157**	0.254**	2.023	0.224**
	(2.64)	(0.098)	(2.39)	(0.100)
Use of mobile phone : Don't Use a mobile phone	RC		RC	RC
Use a mobile phone	2.590***	0.350***	2.300***	0.316***
	(4.62)	(0.073)	(3.88)	(0.078)
Educational Attainment: No education	RC		RC	RC
Some primary education	2.612***	0.316***	2.602***	0.309***
	(3.01)	(0.106)	(2.97)	(0.108)
Some secondary education	1.995**	0.220*	2.067**	0.225*
	(2.04)	(0.115)	(2.10)	(0.116)
HSC and above	4.753*	0.535*	4.691*	0.546**
	(1.81)	(0.278)	(1.78)	(0.273)
Age : 16 - 20	RC	RC	RC	RC
21 - 25	0.547*	-0.206*	0.527*	-0.224**
	(-2.03)	(0.108)	(-2.11)	(0.110)
26 - 30	0.561*	-0.199*	0.474*	-0.267**
	(-1.95)	(0.107)	(-2.36)	(0.113)
31 - 38	0.491*	-0.246*	0.406**	-0.325**
	(-1.87)	(0.141)	(-2.22)	(0.146)
39 and above	0.293**	-0.454***	0.219**	-0.587***
	(-2.49)	(0.174)	(-2.78)	(0.196)
Family Type : joint family	RC	RC	RC	RC
Nuclear Family			1.241	0.056
			(1.00)	(0.076)
Educational attainment of husband			1.043	0.011
			(1.41)	(0.011)
Years of marriage			1.042	0.017**
			(1.58)	(0.008)
_cons	-1.962***	1.254***	-2.559***	-0.146**
	(0.312)	(0.139)	(0.353)	(0.069)
N	404	404	404	404
Pseudo R2/R2		0.278		0.288

Source: Author; Notes: Z- Statistics in parentheses for ologit model and robust standard errors in parentheses; Significance level *** p<0.01, ** p<0.05, * p<0.1

Empirical results (Empowerment as Change)

6.5.2.10 Measurement

This section reports the results obtained from individual empowerment, a concept that is related to one of the structures of 'power', also known as 'power within'. Taking the importance and context of individual empowerment, into account, self-respect was thus used as a measure of 'empowerment as change'. This has been categorised as 'power within' by (Goldman & Little, 2015). The authors argued that it is a new form of agency as it reflects the attitudes of the respondents to think differently about the rights of their partners and also to question other gendered societal norms. In measuring empowerment as change, the indicators proposed by (Ibrahim & Alkire, 2007) were altered and the definition of 'power within' as proposed by (Rowlands, 1997) was used instead. Rowlands (1997) had defined 'power from within' as enhancing self-respect and self-acceptance. This can be further explained by the fact that as agency and empowerment are both extremely cultural concepts, they are constantly defined based on norms, values, and beliefs of the society (Malhotra & Mather, 1997; Narayan, 2005).

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acceptance. This can be further explained by the fact that as agency and empowerment are both extremely cultural concepts, they are constantly defined based on norms, values, and beliefs of the society (Malhotra & Mather, 1997; Narayan, 2005).

In looking at self-respect, it is noted that the Oxford Poverty and Human Development Initiative (OPHI) had overlooked the self-esteem aspect of empowerment even though it is important to increase alternative ways of thinking of women especially in a patriarchal society. It may not be an important aspect of empowerment in a western society where violence against women is lower, but the self-esteem aspect of empowerment carries an important value in a context where women are often faced with violence imposed by their husbands at home. Bates, Schuler, Islam, and Islam (2004) Found that 67 percent of women between the years of 2001-2002 in rural Bangladesh experienced domestic violence. Such an environment often reveals that domestic violence is prevalent and women are considered as subordinate to men. Thus, the realisation of self-respect/self-esteem is extremely important. Klugman et al. (2014) say that social norms play a crucial role in expanding the agency of women. The capability of challenging the social norms and practices is an important indicator of empowerment especially in a society that perceives women to be subordinate to men. According to Bangladesh's Demography and Heatlth Survey (2014), 28.3 percent of women accept 'wife beating' as a form of disciplining. Mahmud et al. (2012) also found that 55 percent of married women in rural Bangladesh condone beating, starting that it is justified. Hence, this indicator is a culturally relevant one; it indicates the degree by which women fail to accept domestic violence caused by husbands as a necessary form of wife-disciplining. This denial by women should be regarded as an indication of their personal and societal empowerment (Goldman & Little, 2015). It is important for women to realise this sense of empowerment because if women consider themselves as subordinate to their partners and they accept

violence as a normal phenomenon, it will be very difficult in the near future, to reduce or eliminate violence against women and to increase the self-respect of women, even though the women may be exposed to the outside world, besides home. In view of the above, four questions derived from the literature were asked. Respondents were asked to indicate their responses to their level of accepting domestic violence committed by their husbands as a form of disciplining. These items were noted as:

(i) Wife beating is not justified when a wife burns food;

(ii) Wife beating is not justified when a wife argues with her husband;

(iii) Wife beating is not justified at all.

(iv) Men should share household chores

The Principal Component Analysis (PCA) was deployed to create a composite index of the respondents' self-respect/esteem. There was a high correlation among all the items asked in relation to their perception of challenging social practices in common (Appendix O). The PCA is a mathematical technique that converts correlated variables into a small numbers of uncorrelated variables (Chatfied & Collins, 2013). As this study had opted to construct an index of self-respect as a proxy to measure individual empowerment, the PCA was thus selected so as to reduce the dimension of the dependent variable; that is, to reduce the number of correlated variables and to minimise the loss of information. Moreover, it is also noted (Kawaguchi et al., 2014) that the pairwise correlation among the variables was found to be more than 0.50 or higher.

Model Specification

Based on the literature, the following equation was estimated:

$$SR_i = \dot{\alpha}_1 + \dot{\alpha}_2 experiecne_i + \dot{\alpha}_3 ECH_i + \dot{\alpha}_4 media_i + \dot{\alpha}_5 mobile_i + \dot{\alpha}_6 edu_i + \dot{\alpha}_7 age_i + \mu_i \ldots \ldots (6.4)$$

Where the SR represents the self-respect/ esteem index. The control variables were used in the same manner as in other equations to estimate empowerment as choice, empowerment as control, and empowerment in community. Thus, equation 6.4 was expanded as follows:

$$SR_i = \dot{\alpha}_1 + \dot{\alpha}_2 experiecne_i + \dot{\alpha}_3 ECH_i + \dot{\alpha}_4 media_i + \dot{\alpha}_5 mobile_i + \dot{\alpha}_6 edu_i + \dot{\alpha}_7 age_i + \dot{\alpha}_8 edu_i + \dot{\alpha}_9 familytype_i \; \dot{\alpha}_6 husedu_i + \dot{\alpha}_6 yrsmarriage_i + \mu_i \ldots (6.4.1)$$

6.5.2.11 Descriptive Statistics

Four items were used to construct the self-esteem/respect index. Table 6.9 shows the percentage distributions of the different dimensions of the self-esteem items. In their justification of husbands', the beatings in two scenarios were peaked at, 23.51 percent and 21.04 respectively while those who had justified the beatings from their husbands stood at 27.48 percent only. If the category under strongly agree and agree were combined, about 61 percent of the women workers have not considered beating to be justified. In the second scenario, 55 percent considered beating to be not justified. However, 46 percent perceived beating to be not justified at all whatever the situation may be. With regards to the non-traditional gender norms, 55.44 percent perceived that men should share the household chores. This result shows a culture specific dimension where stereotyping of gendered roles is still common.

Table 6.9: Results of empowerment as change

Dimension	Strongly agree (%)	Agree (%)	Neither agree not disagree (%)	Disagree (%)	Strongly disagree (%)
Wife beating is not justified when a wife burns food	36.39	24.50	4.95	10.64	23.51
Wife beating is not justified when a wife argues with her husband	30.45	24.50	10.15	13.86	21.04
Wife beating is not justified at all	17.82	27.97	22.77	3.96	27.48
Men should share household chores	32.67	22.77	6.93	11.39	26.24

Source: Author

6.5.2.12 Principle Component Analysis

In using the PCA to make a composite index of the individual empowerment, the orthogonal rotation (Varmax) was applied. The oblique rotation (Promax) was used to test the sensitivity of the analytical approach because through the PCA, this study hopes to identify the optimal way of combining self-esteem/self-respect variables into a small numbers of subsets. Moreover, as the main goal was to construct a composite index of self-esteem/self-respect, the PCA is preferable than the EFA. This is also attributed to the objective of making a composite index that is not based on the specified theoretical model (Krishnan, 2011).

There are a number of available tools to determine the number of components to be retained. According to Kaiser (1974) criterion, the component with an eigenvalue of more than 1 should be retained and the component with less than one eigenvalue should be dropped since it may produce the negative values of Kuder Richardson's internal consistency. Another procedure is the graphical method proposed by (Cattell, 1966). This

graphical method suggests that the components that are level off to the right of the plot should be ignored. Nevertheless, both methods were used in this study and results derived from both showed similarities. Based on all the four items discussed earlier, the component as derived from the eigenvalue was found to be exceeding one. The PCA suggests one factor that is based on this criterion (see Appendix P). The scree plot is also shown in Appendix – Q. The PCA with the Varimax rotation and Promax rotation also yielded one component from the four items. The rule of thumb for retaining items in the PCA is that the factor loadings should be at least 0.32 or higher (Tabachnick & Fidell, 2001). In this study, the loadings of each item was more than 0.32 or higher on two or more components (Appendix - R), hence all the four items were suitable for constructing the self-esteem/self-respect variable. It is important to mention that both the Promax and Varimax also produced the same results for the factor loadings and the retention of items (see Appendix S) for the analysis. Next, the Kaiser-Meyer-Olkin (KMO) index was estimated to detect how well the data fitted the PCA. This test also measured the sampling adequacy of each variable and for the whole model. The KMO's returns value for this study was observed to be 0.80 for the overall model while for each variable, it showed a value ranging from 0.79 to 0.80 (see Appendix T). The above results indicate that the sampling is adequate for running the PCA and for constructing a composite index. The component shows 76 percent of the total variance.

6.5.2.13 Method, Findings and Discussions (Empowerment as Change/Individual Empowerment)

As the composite index of self-esteem/self-respect for measuring individual empowerment is a continuous variable, the OLS regression was used first, to run the diagnostic test that checks the distribution of the residuals (see Appendix U). In particular, the normality of the distribution of the residuals was checked. Next, Shapiro-Wilk's test

was conducted to check the normality of the residuals. Since the test rejected the null hypothesis of the normal distribution, the diagnostic plot was checked to see the seriousness of the problem, that is, if they were in line with (Quayes, 2012) findings. The residuals were then graphed as histograms (see Appendix V). The histogram has not shown any serious deviation from the normal distribution hence, the analysis through the OLS method was maintained. A detailed explanation of the OLS regression has already been provided in Chapter 3. In the current section, the issue of possible concerns of heteroscedasticity was also addressed. The Breusch–Pagan/Cook–Weisberg test applied for heteroscedasticity showed evidence against homoscedasticity (see Appendix W). Therefore, the robust standard error was used to remove the heteroscedasticity from the model. Based on the above mentioned diagnostic check, the analysis obtained from the OLS regression was retained, without having any concern about heteroscedasticity.

Table 6.10 presents the results yielded by the OLS regression which are presented as a measure for consistency. The results obtained from both the OLS and RR did not vary much although the standard error changed slightly and the expected sign of the main variable of interest remained the same.

In the parsimonious model, the estimated coefficient of work experience noted in the RMG industry showed a positive sign which is statistically significant at the one percent level. All categories such as less than 10 years' work experience, less than 15 years' work experience and more than 15 years' work experience showed a positive sign when compared to the category of work experience less than 5 years. The results suggest that one unit increase of work experience in all categories including high experience and very high experience, can increase one unit of the individual empowerment by 0.89, and 1.31 times respectively when measured against the reference category of less work experience.

Based on this, it is deduced that work duration or experience or employment in the RMG industry contributes to the individual empowerment of women workers.

The second employment related variable also shows the expected results. Against the reference category, earnings which are as much as husbands' or more than husbands, were found to be positive and statistically significant at the five percent level. While the estimated coefficient of earnings which were as much as husbands' was 0.42, the estimated coefficient of earnings which were more than husbands is 0.65.

In addition, media exposure was found to make a positive impact on the individual empowerment of the married women workers. The coefficient of watching TV at least once a week is significant at the one percent level when measured against the reference category. It was observed that a unit increase in watching television everyday was 1.07 as compared to those not watching television at all. This suggests that the media serves as an independent source of information which is likely to contribute to the formation of alternative attitudes and opinions with regards to common social beliefs and attitudes. Although Mahmud et al. (2012) did not use a composite index of individual empowerment when studying rural Bangladeshi women, they found a positive and significant association between non-justification of wife beating and watching television.

Further, using mobile phones as a variable was also noted to have a positive and statistically significant association with individual empowerment. In particular, it is evident that those who used mobile phones as a means of communication were more empowered at the individual level than those who do not use mobile phones.

Among others, educational attainment also showed a positive and statistically significant association with individual empowerment. Here, no educational attainment (no formal

schooling) was used as the reference category but the results indicate that women RMG workers who have some education, whether primary, secondary, or higher secondary and above, are more likely to increase their individual empowerment as compared to those with no educational attainment. The results also showed that the effect of higher level education on individual empowerment was the strongest, among others. This is consistent with the findings of Gupta and Yesudian (2006).

Moving on to the regression output, it was observed that even after adding the control variables, the results showed that none of the variables had lost their statistical significance in model 2.

Table 6.10: Results of OLS and RR (Empowerment as change or Individual Empowerment)

Explanatory variables	OLS	RR	OLS	RR
	Model-1		Model-2	
Work experience : Experience less than 5 years (0.04 – 4.83 years)	RC	RC	RC	RC
Experience less than 10 years (5 – 9.50 years)	0.119	0.101	0.136	0.115
	(0.195)	(0.206)	(0.196)	(0.208)
Experience less than 15 years (10 – 14.50 years)	0.896***	0.770**	0.917***	0.789**
	(0.245)	(0.323)	(0.248)	(0.327)
Experience more than 15 years (15 - 26)	1.307***	1.193***	1.343***	1.225***
	(0.296)	(0.396)	(0.305)	(0.405)
Earnings compare to husbands :less than husband	RC	RC	RC	RC
As much as husband	0.419**	0.488**	0.425**	0.500**
	(0.212)	(0.220)	(0.213)	(0.222)
More than husband	0.645**	0.703**	0.645**	0.719**
	(0.279)	(0.331)	(0.288)	(0.339)
Watching Television: Not watching at all	RC	RC	RC	RC
Once in a week	0.862***	0.937***	0.871***	0.946***
	(0.212)	(0.221)	(0.214)	(0.223)
Almost everyday	1.073***	1.138***	1.083***	1.152***
	(0.226)	(0.233)	(0.228)	(0.237)
Use of mobile phone : Don't Use a mobile phone	RC	RC	RC	RC
Use a mobile phone	0.870***	0.941***	0.863***	0.947***
	(0.161)	(0.168)	(0.169)	(0.176)
Educational Attainment: No education	RC	RC	RC	RC
Some Primary Education	1.261***	1.394***	1.264***	1.394***
	(0.219)	(0.248)	(0.219)	(0.250)
Some secondary and above	1.463***	1.544***	1.489***	1.561***
	(0.232)	(0.262)	(0.231)	(0.267)
HSC and above	1.885***	1.953***	1.858***	1.928***
	(0.570)	(0.710)	(0.580)	(0.720)
Age : 16 - 20	RC	RC	RC	RC
21 - 25	0.152	0.115	0.186	0.143
	(0.209)	(0.234)	(0.213)	(0.239)
26 - 30	0.119	0.078	0.171	0.121
	(0.220)	(0.237)	(0.233)	(0.254)
31 - 38	-0.066	-0.098	0.018	-0.032
	(0.297)	(0.304)	(0.307)	(0.327)
39 and above	0.210	0.219	0.321	0.307
	(0.374)	(0.389)	(0.383)	(0.436)
Family Type : joint family			RC	RC
Nuclear Family			0.147	0.112
			(0.164)	(0.177)
Educational attainment of husband			-0.013	-0.015
			(0.022)	(0.024)
Years of marriage			-0.011	-0.010
			(0.020)	(0.021)
_cons	-2.904***	-3.027***	-2.877***	-2.976***
	(0.251)	(0.319)	(0.264)	(0.343)
N	404	404	404	404
F	26.738	12.304	23.098	10.150
R2	0.339	0.322	0.341	0.322

Source: Author

Note: Robust Standard errors in parentheses; Significance level *** p<0.01, ** p<0.05, * p<0.1;

In addition, we also estimated the separate regression for each element of individual empowerment to show the robustness of the results. As each of the variables has sequential order, we deployed the ordinal logit regression. The result is shown in Table 6.11. Hence, instead of the composite index of self-esteem/respect, we re-estimated the equation (6.4.1), but this time we considered each self-esteem/respect variables as the dependent variable. The most dominant variables are work experience more than 15 years and educational attainment. Earnings in relation to husbands has significant association with two self-respect variables. In addition, media exposure or watching TV, use of mobile phone have significant association with all four self-esteem or social norms and practice variables. However, age category 21-25 has a positive and significant association with one self-esteem variable that is related to social norms and practice. It is important to mention that the separate regression of each item and the composite index exhibited almost the similar results.

Table 6.11: Results of the each dimension of individual empowerment or self - esteem

Explanatory Variables	Beating not justified if burns food	Beating not justified if wife argue with husband	Beating not justified at all	Men should share house household tasks
Work experience : Experience less than 5 years (0.04 – 4.83 years)	RC	RC	RC	RC
Experience less than 10 years (5 – 9.50 years)	0.026	0.051	0.002	0.538**
	(0.237)	(0.230)	(0.241)	(0.239)
Experience less than 15 years (10 – 14.50 years)	0.299	0.836**	1.043***	0.920**
	(0.363)	(0.365)	(0.383)	(0.373)
Experience more than 15 years (15 - 26)	1.525***	1.330***	1.283***	1.130**
	(0.516)	(0.482)	(0.474)	(0.466)
Earnings compare to husbands :less than husband	RC	RC	RC	RC
As much as husband	0.615**	0.326	0.656**	0.239
	(0.257)	(0.249)	(0.257)	(0.253)
More than husband	0.803**	0.581	0.988**	0.545
	(0.396)	(0.392)	(0.407)	(0.388)
Watching Television: Not watching at all	RC	RC	RC	RC
Once in a week	1.035***	0.989***	0.903***	0.677**
	(0.262)	(0.259)	(0.267)	(0.266)
Almost everyday	1.110***	1.111***	1.159***	0.930***
	(0.280)	(0.276)	(0.282)	(0.283)
Use of mobile phone : Don't Use a mobile phone	RC	RC	RC	RC
Use a mobile phone	0.638***	0.921***	0.917***	0.966***
	(0.205)	(0.202)	(0.205)	(0.204)
Educational Attainment: No education	RC	RC	RC	RC
Some Primary Education	1.184***	1.493***	1.274***	1.253***
	(0.294)	(0.299)	(0.320)	(0.306)
Some secondary and above	1.362***	1.555***	1.614***	1.461***
	(0.311)	(0.314)	(0.341)	(0.325)
HSC and above	1.438*	2.174***	1.845*	1.681**
	(0.854)	(0.813)	(0.977)	(0.755)
Age : 16 - 20	RC	RC	RC	RC
21 - 25	0.130	-0.048	0.112	0.823***
	(0.279)	(0.271)	(0.276)	(0.278)
26 - 30	0.038	-0.198	-0.013	0.844***
	(0.293)	(0.283)	(0.294)	(0.292)
31 - 38	0.083	-0.340	0.143	0.421
	(0.376)	(0.377)	(0.382)	(0.364)
39 and above	0.320	-0.222	0.613	0.667
	(0.500)	(0.488)	(0.500)	(0.477)
Family Type : joint family	RC	RC	RC	RC
Nuclear Family	0.083	0.012	0.270	0.252
	(0.205)	(0.202)	(0.205)	(0.202)
Educational attainment of husband	-0.009	-0.018	-0.014	-0.004
	(0.027)	(0.027)	(0.028)	(0.027)
Years of marriage	-0.012	-0.011	0.007	-0.018
	(0.025)	(0.024)	(0.024)	(0.024)
cut1 _cons	1.286***	1.067***	1.947***	2.106***
	(0.407)	(0.399)	(0.440)	(0.436)
cut2_cons	1.952***	1.959***	2.201***	2.790***
	(0.416)	(0.410)	(0.444)	(0.447)
cut3_cons	2.230***	2.526***	3.454***	3.159***
	(0.420)	(0.419)	(0.463)	(0.452)
cut4_cons	3.414***	3.775***	5.132***	4.280***
	(0.436)	(0.436)	(0.488)	(0.469)

Note : Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

6.6 Some qualitative quotes/voice from married RMG workers

The quantitative analysis of the thesis provides the relationship between formal paid employment as well as other resources and all aspects of women empowerment. In addition to the quantitative analysis, we opted to offer the voice of women RMG workers from the survey sample regarding the impact of employment in the RMG industry and their empowerment status. These married women spoke how their views on decision making in the household has improved after joining the garments industry. Rasheda (25 years old, married, no education) has been working in the RMG industry as a helper for the last 6 years. She explained how her position in the family regarding household decision making improved: "*When I have started contributing my income to the family, my husband also started to give me importance in decision making in the household. Previously, I was even not allowed to go alone to visit doctors or even to visit my family members. Now, I can take these decisions by myself as I have my fixed earnings at the end of each month. Moreover, I even can purchase anything that I want from my own income. In doing so, there is a feeling of independence*."

Tania (34 years old, married, secondary education) is working in a garments factory as an operator for the last 8 years. She spoke how she joined the RMG factory and how the work increase her decision making power at the household: *"I have joined factory in order to increase the family income, though my parents and in laws were not in favour of joining work outside home. But my husband supported me as he realized that if we both work and earn, it will be very good for our children's future. So, though my parents and my in laws were not in favour of my work, I could join the factory as a result of my husband's support. Now, my husband honours me and respects me well as I am able to contribute my earnings to the family. When I was just merely a housewife, my husband used to make each and every decision of the household such as purchasing for the*

household, cooking, visit to family and friend, even my own health care. I could not go outside without taking permission of my husband. Now I can make my own decision and can go outside home whenever necessary. I feel a certain degree of freedom. I also can say that when you can earn and spend money on your own choice, you can really feel a sense of freedom."

Rahima (23, primary education) another married RMG worker, has working as an operator for the last 4 years. She has joined the factory before her marriage. She narrated her experience: "*The factory job has given me the opportunities to save some money for my marriage and I was able to support my father at that time. Later on, I have decided to continue the job to build-up children's future. I do honour my job as it has provided me money at the end of each month and I can save some money for my children's education. Now, my husband, my parents even my in laws family show respect towards my decisions, i.e. from purchasing of daily needs of the house to the decision of my children's education. I can feel a sense of freedom inside myself as I am economically independent. Still, in my opinion there are some women who are working in the RMG industry hand over their monthly income to their husbands or to a male person in the family who is considered the head of the family. I think when you earn your money, you should have some sort of control of the income."*

Marzina (age 30, primary education) reported that though her husband did not let her to join work outside home, she decided to join for the sake of her children: "*Now I can do my own shopping, I do not need to depend on my husband's desire. I have handed over my salary to my husband. But he gives me the money that I want from him at any time. I do not feel bad about this. I am very happy that now my husband has changed his mind and started thinking that it is always better that both partners do work. My husband also*

help me in the domestic work. When I come back home late, he cooks and serves to the children. To me, it is a huge change on my husband's part."

Ayesha (age 24, primary education) spoke about her transformation after getting involved in a salaried employment: "*I never thought that I could even get a job with my low level of education. I would like to thank the government for giving us this opportunity to work and earn. I have bnefitted in several ways because of my job. My husband used to beat me when he felt my cooking was not up to the mark. It was like a regular phenomenon. I got married at the age of 17. I joined the garment factory after my first child was born and at that time my age was 20. As now I am contributing my salary to the family expenditure, he does not beat me. It is actually reduced after I got the job and my monetary contribution to the family. As far as decision making power at the household is concerned, even my parents and in laws discuss with me their problems and seek my opinion which was totally absent before joining the work. I think if you have money, everyone will respect you."*

The above quotes from five married women workers are also consistent with the quantitative findings. It shows that jobs in the RMG industry has come to the women's lives as a blessing. Their sense of freedom, economic independence, and their male partner's attitude towards them have shown drastic improvement. All of them echoed the same voice that financial independence is the key to achieve freedom and empowerment.

6.7 Chapter Summary

It is clear from the literature that agency and empowerment are very much related and linked to human development. This has been verified by Trommlerová et al. (2015) who stated that agency and empowerment are not only intrinsically valuable, but are also instrumentally important for poverty reduction.

This study used the notion of agency which is in line with Sen (1985) by stating that the process freedom is a central concern. In this regard, four kinds of power and their corresponding empowerment based on Rowlands (1995) typology of power and empowerment were examined. The indicators developed by (Ibrahim & Alkire, 2007) were modified based on the importance of the context and likewise, this is also in line with the definition of 'power within' as articulated by (Goldman & Little, 2015). While the indicators of empowerment or agency noted from this study were found to be similar to the indicators of three kinds of empowerment that were provided by (Ibrahim & Alkire, 2007), only the indicator that is related to 'power from within' was changed. The empirical analysis focused on all four kinds of empowerment which were then examined by using a unique dataset of married RMG workers in Bangladesh.

As expected, the effects of some of the independent variables were found to be different for different kinds of empowerment. Based on the nature of the dependent variables, different methods were deployed. Firstly, the working experience of the workers in the RMG industry was found to positively contribute towards enhancing all kinds of empowerment: empowerment as choice, empowerment as control, empowerment in the community and empowerment as change or individual empowerment. Secondly, while earnings which were as much as husbands' was positively and significantly associated with household decision making, power and bargaining power; it appears that earnings which were more than husbands' were found to be positively and significantly associated with bargaining power and control over use of income. In both cases, earnings which were less than husbands were used as the reference category. This study did not find any relationship between earnings when compared to husbands' with empowerment in the community and empowerment as change or individual empowerment. Watching

television, using mobile phones and having higher level educational attainment had a positive and significant association with all four kinds of empowerment.

To recapitulate, work experience, watching TV, using mobile phones and educational attainment are the factors that affect women's empowerment in the different dimensions. Earnings which were as much as husbands' or more than husbands' may not be the necessary factors for empowerment in the community and empowerment as change or individual empowerment but they were found to affect empowerment as choice and empowerment as control.

CHAPTER 7: CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

Since the inception of the RMG industry, Bangladesh has experienced several industrial disasters. In particular, low wages and poor working conditions have remained serious challenges. Yet, such well-being issues of workers have been ignored by policy makers. As a consequence, Bangladesh is facing serious problems regarding wages and working conditions. Hence, this sought to investigate the determinants of three components of well-being: earnings, health, and women empowerment.

It specifically set out to achieve the following research objectives: 1. To find out the determinants of earnings of the RMG workers; to estimate the mean gender gap in the earnings of the RMG workers and the gaps that exist due to differences in their endowments; 2. To investigate the factors affecting the poor health conditions of the RMG workers; and 3. To find out the determinants/correlates of empowerment of the RMG women workers. The following research questions were framed:

1. How do human capital and other employment related variables affect the earnings of the RMG workers in Bangladesh? Is there any gender earnings gap in the RMG industry? How large is the gender earnings gap and how much of it is explained by differences in endowments?

2. How do the environmental, individual and social conversion factors affect the health conditions of the RMG workers? Is there any gender difference in the health conditions of the RMG workers?

3: How does employment in the RMG industry affect the empowerment of women workers?

To answer these questions, the study employed quantitative research approach and used primary data gathered from 775 RMG employees (560 female and 215 male workers) through administering a structured questionnaire using face to face interviews. Based on the nature of dependent variables, different statistical and analytical methods were deployed.

In our quest to understand the correlates/determinants of the three components of well-being, we examined earnings, health and women empowerment and found the factors that contributed to improving the well-being of RMG workers in Bangladesh. We found these three components are particularly important as RMG workers are low wage workers with the female labour constitutes the major workforce in this sector. Also, existing works on the well-being of RMG workers in Bangladesh have not taken into account these three components in a single study. Previous studies have tended to examine well-being without an attempt to contribute to the extension of the human capital theory (while attempting to find out the determinants of earnings), and they did not use a comprehensive framework taking account of the capability approach and the effort reward model (while attempting to examine the factors affecting health condition), and they have not considered the four kinds of power and empowerment.

Therefore, the findings of this thesis provide a profound assessment of the three important and relevant components of the well-being of RMG workers in Bangladesh i.e. earnings, health and women empowerment.

7.2 Synthesis of Findings

This thesis began by examining the importance of well-being among RMG workers and how the low wages and working conditions have become a burning issue after the industrial disaster affect damaged the RMG industry in Bangladesh. Chapter 1

problematised the components of well-being that are relevant and important for the lives of RMG workers. In doing so, it also explained why these three aspects of well-being are very much significant to improve the lives of workers, as well as the sustainability of the RMG sector in Bangladesh. Chapter 2 provided a glimpse of the historical evolution of the RMG industry in Bangladesh. Chapter 3 presented the analytical framework used to examine the three research propositions of the thesis. In doing so, it provided the theoretical underpinnings of individual analytical chapters along with the basic conceptual framework. While theoretical literature discussed in chapter 3, the empirical literature reviewed in the relevant analytical chapters. Chapter 4, 5 and 6 present the findings of the thesis.

Chapter 4 examined the earnings determinants of RMG workers and investigated the causes of gender earnings gap in the RMG sector. It analysed how human capital variables, other labour market variables and demographic characteristics determine the earnings of the RMG workers. The evidence shows that education (years of schooling), on the job training, and working hours per week are positively and significantly associated with the earnings of the RMG workers. Earnings-experience and earnings-age profile show concavity. In addition, it also revealed that there is a gender earnings gap in the RMG sector even after controlling for occupational status, demographic and household characteristics. The results also show that 64% of the earnings gap occurred due to differences in endowments between male and female workers while 36% of the gap is unexplained. We further investigated the factors that are responsible for this gap and found that occupational segregation is the major factor responsible for this earnings gap. In addition, differences in educational attainment and working experience in the RMG industry also affect the gender earnings gap.

Chapter 5 analysed the effect of environmental, individual and social conversion factors on the health conditions of RMG workers. The findings showed that psychosocial and physical working conditions are the two major factors affecting the health of RMG workers. In particular, environmental conversion factors influenced health status strongly. While high job-related demands, high noise levels, high workplace crowding, increased workload, and low levels of educational attainment affected the capability and choice of workers in achieving good health and, high job-related rewards and being married expanded the capability to achieve good health. The multiple logistic regression showed that the health status of female workers was worse than male workers'. Moreover, the health status was worse among older workers.

Chapter 6 examined the effects of employment (used work experience in RMG industry as a proxy) on different dimensions of power and empowerment of married women workers. In the empirical analysis, we focused on all four kinds of empowerment and examined them using a unique dataset of married RMG women workers in Bangladesh. Instead of using the dummy of whether a woman is employed or not, we used the work experience in the RMG industry as a proxy to measure employment. In particular, this measure provides a clearer picture regarding whether employment outside the home can contributing to enhance all four kinds of power along with other variables. Based on the nature of the dependent variables, we used different methods. Firstly, we found that working experience in the RMG industry has positively contributed to enhance empowerment: empowerment as choice, empowerment as control, empowerment in the community and empowerment as change or individual empowerment. Secondly, earnings more than husbands is positively and significantly associated with all the four kinds of empowerment. Watching TV, use of mobile phones and higher level of educational attainment showed a positive and significant association with all the four kinds of

empowerment. It is also interesting to note that while the empowerment as choice and empowerment as control are higher amongst the highest category of the age group, the empowerment in the community is the lowest amongst the highest age category of women workers. In short, working experience, earnings more than husbands, watching TV, use of mobile phones and educational attainment are factors that affect the women empowerment from different dimensions. Age may not be a necessary factor for empowerment as change or individual empowerment, but it affects other dimensions of empowerment.

7.3 Implications for Theory

This study for the first time has examined three important components of well-being in a single study with a focus on issues pertaining to the workers in the RMG industry.

The findings of the study support the arguments of the human capital theory of Becker (1964) and earnings functions of Mincer (1974) that education and experience are two important factors that determine the earnings of an individual. The evidence shows that the return to education for RMG workers in Bangladesh is lower than other studies of similar kind (Asadullah, 2006). Hence, the thesis provides a new understanding of human capital theory when dealing with low wage workers. However, while in general it supports the human capital theory, the evidence also shows a lower return to education for women than men, thereby questioning the finding of general other studies in LDCs (Asadullah, 2006; Baffour, 2013). Nevertheless, the return to education findings of this study concurs with similar studies at the sector level (Vecchio et al., 2013). Hence, the study confirms that the return to education might not always be higher for females than males as it depends on the country and the sector. The evidence also shows that the inclusion of labour market variables in the earnings function of (Mincer, 1974) reduces the returns to education and returns to experience, while confirming that formal on the job training has

the strongest effect on earnings determination of low wage workers. While other studies (Paul-Majumder & Begum, 2000) found that female workers earn less than men in the RMG industry in Bangladesh, they have not shown how much of the earnings gaps happens due to endowments effects and how much of it occurs due to discrimination, except by (Huynh, 2016). The study supports the argument of gender earnings gap in general (Ahmed & Maitra, 2010; Ahmed & McGillivray; Akter, 2005; Kapsos, 2008), in T&C or T&G industry (Absar, 2013; El-Haddad, 2011) and in the RMG industry of Cambodia, India, Indonesia, the Lao People's Democratic Republic, Pakistan, the Philippines, Thailand and Viet Nam in particular (Huynh, 2016). However, it contrasts with the finding of Huynah (2016) in the case of the RMG industry of Bangladesh, though it is not clear whether the mentioned study included EPZs's workers in their sample. It is already documented that the wages and working conditions in EPZs are strictly followed and monitored by the BEPZA and a system of councillors is in place (Ahmed & Nathan, 2014). The study also confirms that differences in education and experience are important factors that contribute to the gender earnings gap which concurs with the finding of T&C industry workers in Egypt (El-Haddad, 2011). The evidence also shows that occupational segregation still exists in the Bangladesh RMG industry as women tend to be appointed in the lower positions and this is found as the main reason for gender earnings gap. The findings also corroborate with Fuchs (1974) who claimed that most of the gender earnings gap occurs due to the different tasks performed by males and females.

Early work on the management's attempt to introduce scientific planning to the production process had focused on firm-level productivity (e.g. Taylor, 1911; Nyland, 1988) as well as its detrimental effects on workers (Barrientos, Mathur, & Sood, 2010; Braverman, 1974). While there has been occasional attempts to examine the impact of work on the workers' health, its significance began to surge following the expansion of

global value chains and the tightening of trade regulations in major markets as well as the working conditions at host-sites (e.g. Barrientos, Gereffi and Rossi, 2011). While previous works have focused on a few rich case studies using qualitative analysis, this study seeks to complement them with a quantitative analysis using a larger dataset. Furthermore, the study developed a comprehensive framework based on the capability approach of Sen (2001) and Robeyns (2005) and the Effort-Reward model developed by Siegrist et al. (2004) to analyse the empirical evidence to determine the factors affecting the health conditions of RMG workers. The evidence supports the role of conversion factors in increasing the capability of RMG workers in enhancing the health functioning, though the effect of social conversion is not as strong as other conversion factors. Hence, almost all conversion factors play a significant role in shaping the health status of RMG workers in Bangladesh. By examining how the conversion factors shape the health status of RMG workers, the thesis confirms that both psychosocial and physical working conditions are crucial to enhance the health status of RMG workers. Subsequently, environmental conversion factors matter more than individual and social conversion factors. This study also confirms the fact that women are worse off in achieving good health status than men, which concurs with previous findings in the RMG industry (e.g. Fontana & Silberman, 2013; Paul-Majumder, 1996, 2003). Clearly, women are in a disadvantageous position in achieving capability and health functioning.

This study is the first attempt to consider different dimensions of power and empowerment based on the definition of agency by Sen (1985) and typology by Rowlands (1995) in a single frame. Women workers in the RMG industry, particularly married women workers, are considered agents who can act and bring about changes considering the fact that they are working outside the home and possess wage employment. However, to what extent has employment in RMG industry, (which is the only one sector dominated

by women workers) along with other variables that used previously to contribute to enhancing the empowerment of RMG women workers.

This thesis provides evidence on four kinds of empowerment and show whether the correlates/determinants are the same for all kinds of empowerment or it differs based on the types of empowerment. Clearly, the correlates are not the same for the four kinds of empowerment, though they do not differ much. Additionally, most studies examined women empowerment based on household decision making power (empowerment as choice) and control over resources (empowerment as control). A considerable amount of work on women empowerment has been done by Kabeer (1997, 1999, 2005, 2017). Most of the studies (Kabeer, 1997, 1999, 2005) mostly conceptualized women empowerment and quantitative study (Kabeer, 2013) used measure such as control over their lives, decision making power on the household and their own lives and the mobility to visit certain places. While the mentioned studies captured three kinds of empowerment but did not focus on four aspects of empowerment as this study has captured. There is another study (Kabeer, 2016) which is based on the literature review. Nonetheless, the recent empirical study (Kabber, 2017) included different aspects of empowerment, but did not follow the Rownalds (1997) typology in measuring empowerment. Hence, it can be concuded that this study with a large dataset supplement the qualitative study of Kabeer (2013, 2016, 2017) and The findings are also in line with the theoretical arguments of Kabeer (1999) who argued that working experience, earnings comparison with husbands, and educational attainment can be regarded as resources that play a vital role to expand the agency of women RMG workers and to empowerment thereby. It also supports the bargaining theory of Manser & Brown (1980) where the above mentioned explanatory variables are considered as threat points or resources. In addition, this is a first attempt in the literature that investigates the correlates of empowerment of women workers in the

RMG sector in a context of an LDC. It provides an empirical evidence on whether wage employment of women is important for their empowerment, using a unique data set from a female-dominated sector.

7.4 Implications for Methodology

This thesis has also made some methodological contributions:

Firstly, we used the actual experience of workers by combining past and present working experience in the RMG industry instead of potential experience (age-years of schooling-6) and hence, extended the human capital theory and mincerian earnings function with empirical evidence of low wage workers. Only a few studies (Asuyama et al., 2013; Blau & Kahn, 2013; Huynh, 2016) based on different countries, have used the actual experience as an explanatory variable to ascertain the determinants of earnings (for e.g. Blau & Kahn, 2013) for the US labour market, for low wage workers for the Cambodian garments industry (Asuyama et al., 2013) and Cambodia, Indonesia and Viet Nam's for the GTF industry (Huynh, 2016) and for Egyptian T&C industry (El-Haddad, 2011). In addition, we found only two studies (El-Haddad, 2011; Huynh, 2016) that used the O-B approach to uncover the causes of gender earnings gap for low wage workers. Furthermore, in order to assess the gender earnings dynamics in a robust way, Huynh (2016) emphasised on the importance of the variables such as work experience and on-the-job training which we used in this study.

Secondly, previous studies have either used psychosocial working conditions (Steinisch et al., 2013) or physical working conditions. We have combined both psychosocial and physical working conditions which are barely been used in the literature in examining the health condition of manufacturing workers in general and RMG workers in particular.

Thirdly, although West (2006) acknowledged the importance of using work experience as an explanatory variable, Sivasankaran (2014) considered it as an explanatory variable(Sivasankaran, 2014)(Sivasankaran, 2014)(Sivasankaran, 2014)(Sivasankaran, 2014). Instead of using the dummy of whether a woman is employed or not, we used the work experience in RMG industry as a proxy to measure employment. In particular, this measure helped provide a clearer picture of whether employment outside the home can contribute to enhance the four kinds of power along with other variables. Furthermore, this study used use of mobile phones as explanatory variable which is rarely been used in the women empowerment literature. We found one qualitative study (Schuler et al., 2010) and one quantitative study (Lee, 2009) that considered it as a driver of women empowerment. The use of work duration or experience and mobile phones in this study helped fills this gap in the extant literature.

7.5 Implications for Policy

This study generated a number of implications for policy particularly on the RMG industry in other developing countries and LDCs based on the experience of the RMG industry in Bangladesh. In the first place, these implications are related to expenditure and investment in proper education and relevant industry-related training. In general, more industry specific training centres can be established by the entrepreneurs for the sustainable growth of the industry. As the study revealed that return to training is higher for women than men and percentage distribution of women in training is lower among female workers, training opportunities should be increased for female workers. A proper human resource development program can be initiated with the purview of the Government. Moreover, monitoring and evaluation is very crucial. Therefore, a separate specialized body can be appointed to monitor the training activities of the workers. According section 384 of the Bangladesh Labour Act, 2006, employers should take

proper steps to make the workers aware about their legal rights. In this perspective, proper execution of this rule needs to be monitored closely by the Government. Therefore, a separate 'monitoring cell' under the Ministry of Labour and Employment can be established to ensure the implementation of the provision of Labour Law, 2006.

It is well documented in the literature that male workers earn more than female workers in the RMG industry as women mostly tend to be appointed in lower skills job than men workers. Hence, policy makers should place emphasis on allocating resources to the expansion of education and training of RMG workers particularly towards women. Increased allocation on education will help boost productivity in the sector and well-being of the workers as a whole. The explained portion of gender earnings gap also has important policy implications. In the domain of education, it shows us how much of the observed earnings differentials can be attributed to differences in the levels of schooling held by female and male workers. In particular, the schooling gap requires considerable attention for the disadvantaged group, and hence, requires attention in formulating policies. We can see that the educational gap explains the differences between male and female mean earnings, though it is not the most important one. It implies that investing more in female education can increase the earnings of women and can reduce the gender earnings gap. Working experience is another factor that we found which contributes to the gender earnings gap. It also suggests that due to family reasons and the double burden of women, female workers may not continue to work in the labour market to gain working experience. Hence, there is a need to formulate policies in favour of women in order to keep them in the sector. Most importantly, targeted efforts require to be formulated in supporting and encouraging women to enter and remain in the RMG sector. Hence, gender sensitive planning is very important in order to formulate and implement public policies. In addition, the government can initiate consultative meetings and dialogue with

BGMEA to reduce the earnings gap by appointing women not only in the lower positions but also in all layers of hierarchy.

Employers or owners need to be aware of psychosocial working conditions. By reducing the high physical demands of jobs and time pressure, they can improve the poor health status of RMG workers. Another set of psychosocial working conditions that employers or owners should be aware of includes good promotion prospects, recognition of work, adequacy of salary and support. Improving these conditions may facilitate improvements in the health status of workers. Reducing noise levels and workplace crowding may contribute to better working conditions and improving the health conditions of RMG workers. Reducing working hours is likely to have a positive impact on improving the health status of RMG workers. Firm owners need to take necessary steps to provide proper health services in general and to women workers in particular. Additionally, the government has to act proactively in providing the basic infrastructure and improving the bargaining power which are required to influence towards the better working conditions of RMG workers in other LDCs and Bangladesh. Furthermore, a well-managed health and safety programme is an imperative to improve the health conditions of the RMG workers. Government of Bangladesh has formulated a National Labour Policy, 2012 to make sure decent work along with the provision of occupational health and safety. Nevertheless, effective implementation of the National labour Policy can act as a shield to protect the workers from occupational hazards which subsequently will improve the health and safety of the RMG workers. Moreover, a council was established under the provision of the Labour Act, 2006 (section 323) namely the National Council for Industrial Health and Safety. This council should act proactively so that workers can raise their voice in a proper way regarding health and safety issues and can bargain with the

respective authority. Finally, implementation of proper social compliance in the RMG sector can play an important role in this regard.

As our findings suggest that being employed in RMG sector contribute to enhancing the empowerment of women workers, gender-sensitive policy formulation is extremely important. Therefore, it is important to improve the earnings and working conditions of women to ensure their retention in RMG sector. Finally, designing proper policy instruments is imperative to enhance the welfare of its workers in order to minimize the negative effects on the performance of the RMG industry.

Last but not the least, all stakeholders includes government, employers, workers, buyers national and international respective bodies should step forward to make a change and build the positive image of the RMG industry in LDCs and as well as in Bangladesh.

7.6 Limitations and Recommendations for Future Research

The study also has some limitations. Future studies in this area should focus on comparing and examining the wage determinants with other export-oriented and non-export oriented sectors. It might contribute and provide new insights into the realm of wage determination and subsequently, strengthen the human capital theory.

There was also no comparison made between the health status of RMG industry workers and workers in other manufacturing sectors. Future studies should focus on following a sample of RMG industry workers over time and attempt to compare findings with research on other manufacturing sectors. In addition, the influence of environmental, individual and social conversion factors could be measured separately both for physical and mental health. Measurement of poor health status is self-reported and there is a possibility that this variable can be under represented or over represented. Hence, it is also suggested that different measure of health outcome (biomarkers, self-reported health

status) other than the proxy of absenteeism due to poor health in RMG settings also can be used to see whether the results differ or remain the same.

Future research should explore women empowerment in other settings as women empowerment is context specific. Moreover, this study looked into the association between agency/empowerment and resources, future studies could explore the relationship between resources, agency and achievements. Additionally, a control group consisting of different income groups could also be taken for better understanding and comparison.

Although the results of this study are robust, they should be treated with caution, since the study relied on a cross-sectional rather than a panel dataset. It is to be noted that the latter is important to establish causality.

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