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The Impact of Revised Wage Rate on Firm's Competitiveness in the Ready Made Garment Sector of Bangladesh: A Case Study Comparison Between Large vs SME Garment Manufacturers

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Abstract
The objective of the paper was to critically analyse the impact of revised minimum wage rate on the competitiveness of different size garment manufacturers in Bangladesh. In doing so the paper adopted a case study approach and incorporated data from multiple case study companies. Notably, the paper aims to cover three main areas: industry conditions and its implications on profitability, the critical resources which are giving the large case study firms a competitive advantage and finally the impact of institutional change brought about by the Rana Plaza incident on different case study firms. Using relevant literature from these three areas the paper proposed 3 hypotheses which were in turn tested and re-developed by using the primary data collected from case study companies. The findings from the research highlighted that the profitability of the garment industry became particularly low only after the imposition of minimum wage; however the profitability in mid-market segment is still comparatively higher. The study also identified the two critical resources that are helping the large case study firms to strategize better in relation to tackling the impact of minimum wage, which were "Industrial Engineering Department" and "Vertically Integrated Supply Chain". Finally the study identified the change in institutional paradigm and stringent monitoring brought about by Rana Plaza incident had a more significant impact for the SME's due to issues such as decoupling which were much easier to pursue previously. Finally the paper also outlined some strategies which SME case study firms could adopt in order to minimize the impact of minimum wage. Notably, the revised minimum wage increase was only implemented from December 31st 2013 and there hasn't been much academic work in relation to the context; therefore the study aims to provide a first-hand overview of the situation prevailing after the minimum wage which could be in turn used for further research in the area.

1.1 Introduction
The Garments sector in Bangladesh is widely considered to be the life line of the economy, employing more than 3.5 million workers. Notably, Bangladesh is the second largest exporter of garments globally and has exported 19 billion USD in 2012 which is equal to 80% of the total export earnings of Bangladesh (Al-Mahmood, 2013 and Birsel, 2013). The country was widely considered to be the next biggest sourcing hub having good potential to overtake China which is now focusing on manufacturing technology related products. However, according to various researchers the main competitive advantage which Bangladeshi Garment manufacturers had been the ability to manufacture garments at a very low cost which was facilitated by the low wage rate in comparison to all the other major garment exporters (Bhattacharya and Raman, 1999, Razzaque, 2007 and Haider, 2007). Therefore the extent to which the new minimum wage is affecting the competitiveness of garment industry in Bangladesh will be an interesting issue to analyse.

Notably, the tragic collapse of Rana Plaza which killed more than 1100 garment workers has brought about tremendous pressure from internationally community to improve the compliance standards of Bangladeshi RMG industry (Writhman, 2013). In the midst of this tremendous pressure and increasing level of protest by the workers for improving their living conditions, the government on 14th November 2013 increased the minimum wage to Taka 5300 (up by 76.66%) from Taka 3000 (which itself came into effect from November 2010) (The Daily Star, 2013).

Competitiveness is generally considered as a vast concept. Its effects, adaptation and even its meaning differ vastly in context of one firm to another firm, one industry to another industry and even one country to another country. Cho & Moon (2013) also argued that there is not a generalized definition of competitiveness that is agreed globally. However researchers broadly classify competitiveness in accordance to two parameters "price" and "quality". Notably according to Haider (2007), various researchers identified issues related to price as the major determinant of competitiveness such as labour cost, prices of input, interest rate and exchange rate, the price factor is of particular importance for manufacturing industries. Whereas other researchers argued that non-price factors (e.g. innovation, design, after sales service) related to quality as the major determinant for competitiveness. At this stage it is again important to emphasize that the competitive advantage which Bangladesh had in this standardized global clothing manufacturing industry was its price which was largely influenced by its very low wage rate.

According to Arrowsmith et al. (2003) such change in regulation in relation to minimum wage will be felt more strongly by the small firms. This is because not only the pay structure for the small firm in clothing sector are usually inferior (Mason et al, 2004), small employers are less likely to have specialised department in relation to purchasing, human resource, finance operations, therefore limiting their efficiency level to some extent. More importantly, small firms are more likely to have less financial strength in comparison to the larger firms which in turn makes them more prone to shocks (Yunus and Yagamata, 2012).

1.2 Research Objective

The main aim of this paper is to assess the impact of the revised minimum wage rate on the competitiveness of different size garment manufacturers of Bangladesh. As the revised minimum wage in Bangladesh was only implemented from December 2013 there are no current specific academic work done in relation to the issue. However the paper acknowledges that similar type of studies has been done before in relation to other countries e.g. the impact of minimum wage on small UK firms by Arrowsmith et al, 2003) and the impact of labour market policies on Indonesia's international competitiveness (Agarwal, 1995). Therefore the paper aims to fill the gap in the literature in context to the garment industry in Bangladesh. Notably, the study is of critical importance as Bangladesh's economy is largely dependent on its garment industry and as such a major negative impact on its competitiveness will hurt its economy badly. Therefore the paper aims to address three research questions mentioned below:

1. What is the impact of minimum wage on the competitiveness of different size garment manufacturers in Bangladesh?
2. How the large garment firms that are also vertically integrated are better able to cope with this revised minimum wage?
3. What strategies the SME's should incorporate in order to minimize the impact of minimum wage?

In order to achieve the main research objective, the paper will collect information from the case study firms in relation to industry profitability, firm specific resources and finally in regards to the change in formal institutional structure brought about by the Rana Plaza incident. The information in relation to profitability will help the study to assess whether the garment manufacturers are capable of ensuring global competitiveness by decreasing their profit level to some extent. In addition the magnitude of the effect of the minimum wage on sustainability of Bangladeshi garments manufacturers can also be assessed by incorporating this information in the research. Secondly, information collected in relation to the firm specific resources will enable this paper to identify any critical resources of the large firms that is enabling them to either decrease cost or increase the perceived value of its product, thus assisting them to better cope with this sudden increase in wage rate (Rothaermel, 2012). Thirdly, the information collected in relation to the change in institutional structures brought about by the Rana Plaza incident will help this paper to analyse the extent to which the new formal institutional framework are limiting the garment manufactures to pursue mock compliance especially in regards to providing the stated minimum wage. Notably, the secondary objective of this is paper is to use all these information to provide a strategic direction for the SME's which will also address the research question 3.

2.0 Analysing Hypothesis 1

2.1 Power of Buyers

Notably, the production cost hiked in all the six companies as a result of the increase in minimum wage. According to the interviewee of case study Company 1, this sudden increase in cost was initially compensated by the buyers by providing better prices for garments. However, it is very important to note that after the initial season changed, the buyers threatened that they will shift to other companies/countries. Henceforth Company 1 was then forced to go back to the original rate or in some instances the buyers even provided the company with lower rates than before the implementation of minimum wage. The Senior Vice President further quoted that "the profit level per item has decreased after the minimum wage increase and the firm has to internalize this cost", thus highlighting the bargaining power of the international retailers. Furthermore the Strategic Planning Director of case study Company 4 also quoted that "buyers want the manufacturers to recover this cost through efficiency gains and higher productivity". This factor can be further justified by the fact that the productivity of the garment manufacturers in Bangladesh was inherently low (refer to World Bank (2013) report in literature review) and as such the buyers wants them to recover this increase in cost through efficiency gains.

The above paragraph was also validated by General Manager of the case study Company 3, according to whom "the customer portfolio of Company 3 did not change, however the factory is in loss after the minimum wage as the buyers didn't increase their price but kept it the same and in some instances they even decreased the prices". However management of Company 3 are hopeful that they will get better prices in upcoming future. The interviewee justified this point by saying that the political unrest is regarded as one of the main rationale for the decrease in prices seen; otherwise it would have at least remained the same. This is because the buyers are not confident that they will get their orders in time. Furthermore, the Managing Director of case study Company 5 highlighted that the political situation further exacerbated the cost of manufacturers mainly in the form of transportation cost. "The transportation cost per truck from our factory to the sea port was 20,000 BDT but due to the political unrest we had to pay 120,000 BDT per truck which needed police protection" (henceforth validating the findings by Bose and Paul (2014) in the literature review).

2.2 Power of Suppliers (High):

The Director of case study Company 6 highlighted that if they consider the FOB price of a good to be $1, the spinning mill producing the yarn would take around 60 cents, the knitting firms will take another 5 cents for making the grey fabric and the dyeing firms takes another 20 cent, thus only leaving 15 cents for the Garment's cutting and making (please refer to appendix three which is very confidential information). The rationale behind the high cost of producing yarn is that the cotton the spinning mills buy is at a global price rate, furthermore the manufacturers in Bangladesh are not allowed by its central bank to participate in the forward market and as such putting the manufactures at each stage of the supply chain in a vulnerable position as they are not being able to hedge their exposure (Ahmed, 2014) and (refer to the literature review). Furthermore, the minimum investment needed to set up a spinning mill is at least 1.5 billion BDT whereas the set up cost of making a new garment manufacturing can be as low as 50 million BDT. According to Director of case study Company 6, "the companies that are investing in spinning mills are taking huge risk in the form of investment and as such the prices they charge and their profit margins are high in comparison to other parts of the supply chain", therefore implying that the power of suppliers especially spinning mills is very high which is further exacerbated by their procurement of cotton at global price rate.

2.3 Competitive Rivalry (High and based on price competition)

All the six case study companies confirmed that for a given quality of any standardized product, the main basis of competition in this industry is cost as there is less room for differentiation as the product has to be made as per the exact specification i.e. designs given by the buyers. This issue can be further justified by the literature review section (Jhonson et al. 2008) which highlighted that price competition is high in industries which have standardized products which in turn leads to lower profitability.

Furthermore there are 5600 thousand garment factories in Bangladesh (refer to literature review: BGMEA. 2014) and according to the interviewees, buyers have the option to shop around as usually they ask for quotation from at least 2-3 suppliers, therefore the only way to get contract is by providing the required quality in the lowest possible cost thus intensifying the price competition further. This will in turn will have a negative impact on profitability (refer to the literature review findings by Sammeck. 2012).

2.4 Summary and Hypothesis

If we consider the primary data and secondary data collected, it should be noted that although the cost has increased tremendously due to issues like political unrest, Rana Plaza incidents and rise in minimum wage, the prices charged by the manufacturers remained the same or in some cases decreased and all the six case study firms are internalizing these increases in costs. Therefore these findings dictate that although the forces were strong, before the increase in minimum wage the profitability of the garment manufacturers seems to be medium thus rejecting the first hypothesis.

Such unusual findings can be partially explained by Porter (2008) who stated that the buyers groups can be less price sensitive if they earn huge profits or if the product which it is procuring represents a very insignificant part of its total cost structure which is illustrated by the findings of Miller and Williamson (2007) in the literature review. Furthermore the fact that the increase in cost wasn't passed onto the international retailers also elaborated the powerful negotiating leverage which the international retailers have over the garment manufacturers in Bangladesh which is in line with the findings by Miller and Williamson (2007), Sammeck (2012) and Gereffi (1999). Therefore this paper states that only after the implementation of the minimum wage and the recent developments made the overall profitability of the industry became very low, therefore extending the first hypothesis.

Furthermore as quoted by Director of case study Company 2, "the minimum wage will definitely decrease the amount of orders especially to companies who were serving the low end customers who used to give very low price for Cutting & Making and Trimming (CM) and henceforth garments only supplying to these customers are likely to be in difficult position in the future, however I believe orders from mid-level brands will increase". This statement is justified by the findings from Company 4 which used to supply garments to value brands like Wallmart and C&D that placed large orders to them before. However, the Rana Plaza incident followed by the minimum wage meant that Wallmart and C&D are not placing any more orders to Company 4. He also quoted that the "Small buyers are taking advantage of this situation and is currently giving very low price". This statement is also justified by findings from Company 3 which highlighted that the branded companies are not the ones who are decreasing their price, they are keeping it same. Thus this paper extends the hypothesis further by stating that the profit margin of supplying the quality buyers instead of value buyers is still higher than serving low-end hypermarket buyers. This also corresponds to the research done by Porter (1979 p.141) "Even if a company sells to a single industry, segments usually exist within that industry that exercise less power". Furthermore he stated that buyers focusing on quality are less sensitive to price henceforth allowing the scope for earning higher profitability. Therefore this paper suggests the manufacturers in Bangladesh to move up to supplying higher quality products instead of hyper market brands like Walmart. This will in turn help the companies to reduce the price competition, limit the power of buyers because such buyers will give more priority to quality. This in turn will help the Garment Manufacturers to enhance their declining profitability.

Revised Hypothesis 1: The profitability of the garment industry became very low only after the implementation of the minimum wage. However, the profit margin of supplying to mid-market brands is still higher in comparison to hyper market brands.

2.5 Analysing Hypothesis 2

In order to carry out hypothesis 2 testing meticulously, the data analysis section will use information from only two large case study companies which are Company 1 and 2, whilst the sample for the SMEs will also be two which are Company 4 and 5. Notably the selected large garment manufacturers (based on the number of employees only in garments section) are also vertically integrated (i.e. they have spinning, knitting, dyeing units along with the garments) whilst the small garment manufacturers are not vertically integrated i.e. they are doing the Cutting and Making element of the supply chain. Notably, the cases were selected to reflect theoretical sampling which will in turn help the paper to "fill theoretical categories and provide example of polar types" (Eisenhardt, 1989, p 537). Furthermore the selection of these specific case study companies will enable the research to clarify the domains of the findings more clearly.

The comparative analysis between the large firm's vs the SME's will be carried out in two separate sections which are 1) Human Resource and 2) Supply Chain. This is because as indicated in the literature review (Elmer.2010, Bhattacharya and Raman.1999, Razzaque. 2007, World Bank.2013 and Mckinsey.2011), one of the major problems facing the Garment manufacturers is their low productivity which is mainly low due to the lack of skilled labour and engineers in the industry. Additionally, the supply chain will be analysed in order to provide this paper with an in depth view of the benefits which the two large garments which are also vertically integrated are having over the two SME case study firms.

Particularly each of these sections will highlight the key findings from the interviews from the selected four case study companies separately at first and then the hypothesis testing section will group those findings together. This will in turn assist the paper to carry out an in depth investigation of case by case findings which will in turn help into a more coherent testing of the second hypothesis.

3.1 Human Resources:

Company 1

According to Senior Vice President, the efficiency of Bangladeshi workers is considerably low if we compare them to countries like China, Vietnam and Cambodia". This statement is justified by the findings of the World Bank (2013), Razzaque (2007) and Bhattacharya & Raman (1999), highlighted in the literature review section. However the interviewee further explained that in a given minute, if the machine runs for 23 seconds then the rest 37 second goes for handling time in Bangladesh. However the scenario is completely different in Vietnam where in any given minute the machine works for 37 seconds and handling time taken by the workers is only 23 seconds. Therefore the productivity of manufacturers in Vietnam is almost double in comparison to manufacturers in Bangladesh. Henceforth, this paper states that monitoring and upgrading the efficiency level of the workers is of paramount importance especially as there is a huge scope for improvement for Bangladesh RMG workers.

However, it is important to note that industrial engineering (IE) department are now established in few of the universities in Bangladesh. By employing such production engineers Company 1 ensured that the work is done is more professional way as targets are set in a more mathematical and scientific way which leads into setting more accurate and achievable targets for the workers, this in turn encourages workers to increase productivity, this can be referred back to the efficiency wage argument in literature review by Besanko et al (2007).

Furthermore, the company encourages their workforce to increase their efficiency by promoting the most efficient apprentices to operator level every month and by having the various performance measurement mechanisms set by the IE department, ensures that the right worker is promoted, thus giving added incentive for the apprentices to increase their productivity. In addition performance is also measured for supervisors and they receive certain amount of bonuses related to that. The company even does line wise measurement every day by posting a green flag for most efficient, yellow for moderate performers and red for most in efficient henceforth encouraging the workers in each line to compete with the other. However, the minimum wage rate hike increased their total production cost by 16%.

Notably in order to tackle this impact of minimum wage increase, the company's IE department is helping to further streamline the workforce i.e. the line which used to use 12 workers they are using 10. The Senior Vice President also stated that "the production engineers are now in charge of running the factory which previously used to operate under the factory manager or production manager who have reached to their position due to their experience and their educational background was not that strong". Furthermore by employing these IE engineers and by monitoring the performance the company is decreasing the return rate which in turn is increasing productivity and also reducing cost. The department is also taking various measurements to change the layout of the factory in order to decrease the process time for making the garments. Furthermore, after the minimum wage, the company is implementing strong performance measurement assessment before hiring new workers in which is enabling them to assign them in more accurate grades.

Company 2

According to the Director, hiring workers in accordance to their capabilities and assigning them to appropriate grades was as a major problem for the Bangladesh's RMG sector, some companies are still not doing it and as such they are paying the workers more. Previously even Company 2 also had this problem, however the Industrial Engineering department which was established few years back helped to identify the competence of each worker more accurately and put them in associated slabs especially during the time of recruitment.

Furthermore the Director quoted that "Previously 3rd grade operator could say they are 5th grade and we hired them without much assessment. Moreover we used to give high salaries to even people who are not that efficient as we used to put them in wrong grades and also give promotion much easily".

However the Director admitted that the increase in cost due to the implementation of the new minimum wage will be around 14% per t-shirt. Notably, the effect of minimum wage was minimal because the company took various measures to decrease their size of the workforce (e.g. reducing the number of helpers/assistant) which was started even before the implementation of the minimum wage whereas most of the other factories started to reduce their workforce only after the imposition of the minimum wage.

After the increase in minimum wage, in addition to accelerating Lean Manufacturing concept, concentrating more on automation (e.g. the company brought sucker for uncut threads) the IE department is also working to ensure effective space utilization e.g. removing the extra table between two lines and having an extra line added. Furthermore, the company changed the way the workers are seated which in turn increased their productivity and decreased the amount of apprentices needed. The Director also informed that due to the stricter assessment after the implementation of minimum wage; the company could have decreased the salary of the workers as the company then identified some additional workers who were put in higher slabs (refer to appendix 1). However the labour legislation now dictates that factories can't give them lower salaries than before and as such Company 2 is providing training to their workers so that the skills and ability matches with the minimum wage structure. It is important to note that training is also provided at level floor level, managerial level, compliance training. Company 2 even goes to the extent of providing training abroad, thus highlighting their focus on a continual increase in productivity.

The Director also quoted that "Each floor has its target; if workers are able to attain those targets then bonuses are provided". It gives bonus to all the workers in same line so that they work as a team. This incentivises the more efficient workers identifying/pulling up the less efficient ones and also increase the leadership skills of the more efficient workers (more likely to be promoted as the next supervisor). According to the Director, such mechanism greatly increases the productivity of our factories which also corresponds to the efficiency wage rate mechanism used by Company 1.

These findings can be backed up by the research of Besanko et al (2007) and Paton et al (2011) from the literature review section which noted that productivity level could be increased by giving efficiency wages, incorporating lean manufacturing techniques and by providing adequate training which the IE departments in both the firms are enabling them to pursue. Finally the Director of the company also quoted that "such measures are helping our company immensely to counter the rise in minimum wage. He further added that "the IE department is helping us to go into more automation through which we are further streamlining the workforce".

Company 4

The company accelerated the implementation of IE concepts after the recent increase in minimum wage. The Director of the Company however notified that they "have not being able to implement 100 per cent IE concept till now although they started implementing IE concepts first a few years back". Notably, the company felt a huge impact after the first wage rate increase to taka 3000 in 2010. After the first wage increase, making cost increased exponentially, henceforth company started concentrating on upgrading its recruitment system by paying new workers in accordance to their performance; previously the management used to believe word of mouth and usually used to appoint them for higher wages.

He further highlighted that one factory which closed due to the compliance issues had 1800 workers during the implementation of the first wage rate increase; however by incorporating some of the elements of IE concepts and by hiring some consultants from Sri Lanka at first and then by incorporating the IE department the company was able to decrease the workforce to 1200 before its closure. Thus, highlighting that industrial engineering department has major benefits for SME firms as well, however this paper also emphasizes that although the case study company 4 have now got IE department employing industrial engineers, they are still not being able to adopt 100 per cent IE concepts making the actual effectiveness of their engineering department comparatively low in comparison to the other two large case study firms. Thus highlighting that although they have the resources required their ability to execute those resources is lower than the large firms, thus indicating their capability to deploy the resources is low if compared to the larger firms (refer to Rothaermel.2012 in literature review).

However it is important to note that for company 4, only certain section of the employees that too at the supervisor level have performance measurement and it is not applicable for the whole factory. The director also quoted that that "large garments in Bangladesh have operational research team who are constantly working on increasing productivity by concentrating on various aspects of IE". Thus, confirming that the large firms are better equipped (i.e. have specialized human resources) to carry out such operational research. The director also noted that he is not sure about the impact of minimum wage on cost, but it should be around 23%.

Company 5

However, Managing Director Eshraf Chowdhury, the other small firm Virtus Group noted that the cost for making a shirt increased around 20% as a result of the increment of the recent minimum wage. This figure is higher than the 14% and 16% stated respectively by company 1 and 2

The Managing Director also conferred in addition to the IE department, they didn't even had a HR department and most of the workers were temporary but along with the minimum wage implementation, the government also made it mandatory to hire workers on full time which prompted them to open an HR department. This factor indicates that having an effective human resource is a very value able but a rare resource especially if we consider the SME case study firms.

However like the other SME, Company 5 also didn't have performance measurement for workers and had such performance measurement mechanisms only for Production Manager and line Supervisor. The interviewee also pointed out that the main measurement for performance they look at is during the time when the Finishing Quality Controller assesses how much cloth is saved per batch. Furthermore the Managing Director quoted that "We are relaxed in the production line as long we are able to do timely shipment". This highlights that in both the SME's case study companies the performance measurement mechanism is more relaxed in comparison to the larger firms. In addition it should be noted that both the SME's does not give performance based bonuses to their workers. The Managing Director of Company 5 also confirmed that it is very difficult to get mid-level management for this sector pointing out the massive shortage of textile engineers and production engineers which can be related to the findings of Elmer (2010) in the literature review. The problem is further exacerbated by the reluctance of Bangladeshi engineers to work in such factory environment.

At last it is very important to note that all the company's interviewed told that Bangladesh's strength is unskilled workers in comparison to countries like Vietnam and China where the skill level is higher (discussed in literature review and previous section). Therefore in the supply chain section, this paper will analyse whether and how the different firms are strategizing to supply to mid-market clients that is essential in order to ensure that profit is substantial (as identified during the testing of the first hypothesis).

3.2 Supply Chain: Benefits of Vertical Integration

Company 1

According to the Senior Vice President, Company 1 has certain strength and weakness. He quoted that "Our workers efficiency level is better for producing basic t-shirt". One of the main reason contributing to this factor is that the workers are more familiarized to produce basic t-shirt. The company produces knit based items and their specialization is to produce tank top, basic t-shirts. Furthermore he noted that "Upper end brand like GStar have low volume". Henceforth, given the size of their workforce and the capacity of production, it is more reasonable to produce basic t-shirts having large volumes. The reason is that setting up line for small batches of production takes considerable amount of time especially for companies having many lines. He also mentioned that the small factories are in a more suitable position to serve the upper end customers as they are in a more suitable position to produce complicated products of small batches.

However, Company 1 is overcoming this weakness by using high quality of fabric (Novelty Fabric) for their basic t-shirts (i.e. a value added raw material). It is important to note that since it is a Knit Composite it is in control of their supply chain, i.e. they have their own spinning, knitting and dyeing factories along with their garments. Henceforth they are in complete control of the quality of the final product that they are producing which corresponds to one of the benefits identified in the literature review section of having a vertically integrated firm (Harrigan, 1983).

Notably, the novelty fabrics which they can produce are puma cotton, vicious, 100 per cent polyester. According to the Senior Vice President, “only a certain amount of factories in Bangladesh have this capability as most of them produce basic fabric and basic item” this fact is also affirmed by Mckinsey (2011) report in the literature review. He also noted that brands like H&M and Next has both the low end and mid-market (e.g. one made using Puma Cotton) products and by concentrating on premium fabric, the company is being able to supply for those mid-market products for those brands. According to the Senior Vice President, this enabled the company to produce better quality/value added products and thus facilitating to get better prices from customers who are in turn getting better prices for example in comparison to sourcing from countries like Turkey, Tunisia.

Therefore having the whole supply chain under one organisation turned out to be a value able resource for Company 1 as it is allowing the company to produce the mid-market product having the same perceived value as the products produced in Turkey at a lower cost (as per the Senior Vice President) thus enabling the company to attain a temporary competitive advantage (please refer to Barney & Hesterly, 2010 in the literature review). Furthermore in accordance to the literature review, it is also enabling Company 1 to better co-ordinate technological interdependencies as it is using its capability to produce novelty fabric to finally produce a garment that is of higher perceived value (D’Aveni & Ravenscraft, 1994).

Company 2

The benefits of having a vertically integrated firm is further established by the Director of Company 3 who quoted that “By having the whole supply chain under one organisation (spinning, knitting, dyeing and garments), it is better equipped to compete with other foreign and local suppliers because it gives them more flexibility in costing and they can also ensure full compliance for the supply chain”. The factor of flexibility in costing is also highlighted in the literature review section (D’Aveni & Ravenscraft, 1994) where it was stated that a vertically integrated firm can pursue joint profit maximization as it enables the corporate managers to better co-ordinate activities amongst the different SBU’s and vertical integration can also remove information asymmetry between different stages of production, thus enabling the firm to carry out a more coherent costing of the final product.

The company also has a sister concern in USA which is always working on getting orders from various upmarket customers as the management feel that they need to supply upmarket brands to move ahead. The Director also confirmed that after reaching a certain stage it is difficult to remain profitable by supplying only the low end customers as the margin they provide is low. This fact was also justified in the literature review which highlighted that a highly vertically integrated firm is more likely to ensure sufficient channels for selling its products (Porter, 1980). However the Director noted that although they are focusing on getting more orders for upmarket brands, their strategy is to have a mixture between volume buyers and upmarket brands as it matches with their production capacity. After discussing the advantages which the large case study composite firms are having, it is of pertinent importance to analyse the strategies which the two case study SME’s are undertaking.

Company 4

The importance of investing in better quality machinery for Bangladeshi manufacturers in order to supply upmarket brands was also noted by the Strategic Planning Director, however unlike the other two large case study companies, Company 4’s concentration will be on supplying value customers as the Director believes that their workers hand skill is efficient for bulk orders, e.g. Primark, Wallmart, Asda, Matalan. It is also important to note that Company 4 is not taking any investment to increase product quality via automation as they firmly believe they can sustain by only supplying value customers. Henceforth implying that their current strategy does not incorporate to cater mid-level customers, which in turn can be detrimental for the profitability of the company as identified by the first hypothesis.

Company 5

However unlike the other SME, Company 5 is adopting the strategy of going more into automation to counter the sudden increase in costs e.g. the company bought a state of the art cutting machine in which the clothes will be cut in accordance to the plates made, thus decreasing the number of cutting master needed for production. Notably the transition to focus into more automation has also been feasible due to hiring permanent workers. Moreover according to the Managing Director “automation is enabling the company to produce better quality products with less wastage also helping to decrease the cost”. This also provides the company with a platform through which they can ask for better prices from the buyers as they increasing the perceived value of their product whilst also keeping a check on the increase in cost associated (refer to findings of Teece et al. 1997 and Rothaermel. 2012 in the literature review). The cost of procuring the fabric is very high as discussed in the literature review section and as such garment factories can significantly decrease their cost by focusing on reducing their wastage. The MD also conferred that although they are trying to produce better quality product, mid-market brands traditionally give their orders to factories with which it is doing business for a long time and Company 5 being a fairly new incorporated company is putting the company in a further difficult position.

3.3 Summary & Revised Hypothesis

If we analyse the two important resources that was identified from the primary research, it should be noted that Human Resource especially in relation to the Industrial Engineering Department is an effective capability which is enabling the large companies to strategize better against this new minimum wage increase, thus indicating it to be value able. However, it is important to note that both the SME's don't have "effective" Industrial Engineering Department especially the Company 5 who doesn't have the department per se. This makes having an effective industrial engineering department of the large firms that can monitor the effectiveness of the workers and strategize more accurately is a rare resource which both the SME case study company lacks.

Secondly, in accordance to the findings of the literature review (Williamson.1971, Harrigan. 1983 and D'Aveni & Ravenscraft. 1994) the vertically integrated firms were more able to strategize against this change in minimum wage as they have more flexibility in relation to pricing; quality of the products produced and they can also pursue technology exploitation at different stages e.g. Company 1 novelty fabric is enabling their garment unit to target mid-market customer e.g. Company 2 office in US for getting high end customers and downstream. Therefore the paper agrees with the hypothesis 2 from the literature review section.

However, this paper also recognizes that the capability of the small firms lies mostly in producing clothes in small batches as identified by the Senior Vice President of company 1 and as such this paper suggests the small firms to source very high quality fabrics from other countries and upgrade their workforce by providing training so that they can target high end brands like Gstar, therefore this paper extends the first hypothesis in the following way

Revised Hypothesis 2: Large firms that are also vertically integrated are in a better position to cope and strategize in relation to such increase in minimum wage mainly due to the benefits derived from being vertical integrated and also due to having a more effective Industrial Engineering Department which is enabling them to better monitor and incentivise their workers which in turn is helping to increase their productivity level.

4.4 Analysing: Hypothesis 3

A case by case analysis of the four case studies mentioned above will provide a holistic view in relation to the after effects of the Rana Plaza across different size case study firms, which will in turn help this paper to assess at a very high level whether there was any instances institutional decoupling.

Company 1

According to Senior Vice President of case study Company 1, the compliance issue will have a more significant impact on the sustainability of the Bangladesh's RMG companies in comparison to the increase in wage. However he quoted that "The manufacturing units of our company were previously built as compliant therefore when Accord audited our factory, they provided our company with Grade A certification". Moreover officials from Accord commented in relation to our company as "one of the best factories in Bangladesh in terms of compliance". The buyers themselves also did some evaluation which resulted in similar findings and as such "the Rana Plaza incident in turn lead to an influx of orders for our company" i.e. average shipment in May 2013 was 2 million pieces whereas in May 2014 this figure turned out to be 3.5 million pieces. Due to the influx of orders, the company is also planning to expand. They are currently planning to set up new spinning mill which will increase their capacity of spinning to double and they are also setting up a dyeing factory which will also increase their dyeing two-fold, most importantly they are also increasing the production capacity of the garment element by incorporating more sewing lines. However it is important to note that as there were new compliance measures enforced, e.g. fire proof paint and for which the company needed to take investment worth 3 million BDT which they had to internalize.

Company 2

The Director of the case study company quoted that "Our Company was always compliant and has followed the buyer's requirements and rules imposed by government for example we always had fire detection system". Although he highlighted that the Rana Plaza incident brought about new regulations for improving compliance standards e.g. sprinkler for 23-24 meters building, fire door regulation and the minimum number of fire alarms and smoke detectors per square feet have also increased. Consequently the director quoted that "I have visited factories in different countries e.g. Srilanka, India and Japan and I believe now Bangladesh is becoming one of the most compliant country due to the new rules regulations and stringent monitoring" e.g. in China he visited a factory where they give monthly holiday of two days whilst it is mandatory in Bangladesh to give one day off per week.

The director also mentioned that some producers who were unable to cope with this change had to exit the business this highlights the role of institutions in determining sustainability of industry participants implying its importance which corresponds to the findings in the literature review of Peng et al. (2009). However as the case study firm 2 have been always compliant in accordance to the buyer's requirements, the shock of increasing the safety measures is seen as less of a problem "Buyers were very sceptical at the beginning but eventually they had to come as the company have reached to a certain stage of producing quality products at the best possible cost". Furthermore by having the whole supply chain under one organisation (knitting, dyeing, Sweater, denim) also helps them to compete with other foreign and local suppliers as it ensures 100 per cent compliance, thus highlighting the added benefit of being a knit composite firm.

Company 4

However, the customer portfolio of the SME case study Company 4 changed after the Rana Plaza incident. Walmart one of firm's biggest customers stopped placing orders after the Rana Plaza incident as the conglomerate changed their policy in relation to giving orders to shared factories in large residential buildings (thus highlighting a colossal impact of institutional shock for case study Company 4). The Director of the company also confirmed that the negative image caused by the incident had a far significant effect on the sustainability of the company in comparison to the impact of minimum wage. Thus further highlighting the important role of institutions in relation to sustainability of the firm as identified in literature review

In relation to the additional compliance standards and the audits done by Accord and Alliance, he quoted that "Many companies are not being able to cope with the increase compliance measures which is enforced and monitored by Alliance and Accord". However the company is now constructing a new factory adhering to all the latest compliance standards. Therefore, this paper states that the Rana Plaza environmental shock which resulted change in institutional mechanisms have caused a far greater effect on the Company 4 if compared to the large case study companies.

Company 5

In reciprocity to the statement above, the fifth case study firm even had to change their hiring policy due to the strict auditing conducted Alliance and Accord. The Managing Director quoted that "Previously we were not compliant and as such we used to hire many temporary workers whom we used to pay a bit more but only hired when there is order". This corresponds to the findings of Meyer and Rowan (1977) in the literature review which stated that companies usually decoupled if institutional mechanism conflicts with issues that promotes internal efficiency needs. In this case by employing temporary employees Company 5 was able to gain higher profitability by employing workers only if there are orders. Thus highlighting elements of decoupling due to the relaxed formal institutional framework that used to govern the industry previously (refer to the literature review findings of Huq et al. 2014).

However now, the workers are all hired on a full time basis and the auditing bodies are ensuring that the company is adherent to all the new social compliance standards by conducting audits at least twice every month. He also quoted that "the manufacturers even before didn't pay the minimum wage as per the government requirement" however the auditing mechanism in place after the Rana Plaza incident is now ensuring that all the workers are given at least the minimum wage in accordance to the slabs, thus further establishing decoupling that occurred previously when it was easy to pursue mock compliance. Like the other three case study companies, the case study company 5 also had to take investments in order to improve their structural safety mainly on issues like fire alarms, fire proof ceiling and like all the other three producers company 5 had to internalize these costs. The director cited that "unless we are adherent to all the compliance measures the buyers won't place any orders and as such we need to carry out these investments in order to ensure the running of our business", thus confirming the huge impact of the intuitional shock for the sustainability of Bangladeshi RMG. However the Managing Director stated that although the companies are facing difficulties in the short term, such investments in compliance issues will yield benefits for the business in the long term which is in line to the statement given by the Director of the case study Company 2. In relation to the minimum wage, the Managing Director told that the impact of this increase in minimum wage will also be felt in the long term and as such the company is taking investment in order to improve the quality which will in turn help them to target up market customers having higher profit margin which will in turn help them to abide by all the compliance standards

4.1 Summary and Hypothesis

Although it is a very sensitive topic, there were some elements found in the data analysis which suggests there have been some occurrence of decoupling from the previous institutional framework which lacked adequate monitoring and enforcement (Huq, et al, 2012 and Huq et al, 2014). The paper also clearly indicated the stringent monitoring and new regulations that are implied by "Alliance" and "Accord" are having a significant impact on the case study firms, therefore agreeing to the third hypothesis.

Notably, it seems both the large case study companies didn't decouple even though there was the lack in enforcement, however the SME case study companies were greater affected by the evident of Alliance and Accord. In addition Managing Director of the case study Company 5 clearly mentioned that their factory wasn't previously compliant as they used to hire temporary workers. Therefore this study extends the hypothesis by stating although there were elements of decoupling found, it is more noticeable for the smaller firms. Please note that this is a very sensitive topic and the opinions formed are through the analysis from the case study firms and can't be stated as absolute. However in the light of the discussion above this paper suggests the following hypothesis.

Revised Hypothesis 3: Large firms are less likely to decouple from institutional standards and as such stringent monitoring enforced by Accord and Alliance and the added compliance issues had a far severe impact for the SME garment manufacturers in Bangladesh. It also limits the ability to pursue mock compliance in relation to providing wages and hiring workers.

Hypothesis Number	Hypothesis Proposed in Literature Review	Accept or Reject	Revised Hypothesis in context to the findings
1	The profitability of the garment manufacturing industry is low in conformity with the Porter's Five Forces.	Rejected	The profitability of the garment industry became very low only after the implementation of the minimum wage. However, the profit margin of supplying to mid-market brands is still higher in comparison to hyper market brands.
2	Large firms that are also vertically integrated are in a better position to cope and strategize in relation to such increase in minimum wage due to the inherent advantages associated of being a larger firm.	Accepted	Revised Hypothesis 2: Large firms that are also vertically integrated are in a better position to cope and strategize in relation to such increase in minimum wage mainly due to the benefits derived from being vertical integrated and also due to having a more effective Industrial Engineering Department which is enabling them to better monitor and incentivise their workers which in turn is helping to increase their productivity level.
3	The stringent monitoring conducted by Accord and Alliance will cause a major shock in the industry as it limits the firms to pursue the strategy of mock compliance.	Accepted	Large firms are less likely to decouple from institutional standards and as such stringent monitoring enforced by Accord and Alliance and the added compliance issues had a far severe impact for the SME garment manufacturers in Bangladesh. It also limits the ability to pursue mock compliance in relation to providing wages and hiring workers.

5. Conclusion and Recommendation

The economy of Bangladesh is largely dependent on its garment sector which gained global prominence due to its low wage. Although Bangladesh is currently the second biggest exporter of garments, the productivity of their workers is significantly lower than other competing countries like China, Vietnam and Sri Lanka. Notably, this factor of low productivity was traditionally offset by giving the workers lower wages in comparison to these competing countries. However after the Rana Plaza incident, there was huge pressure from the international community in relation to the compliance issues prevailing in Bangladesh which prompted the government to implement a revised minimum wage structure on December 2013. Previous studies in relation to such minimum wage rate increase in other countries clearly indicated that the small firms are more affected to such shocks in comparison to the large firms.

Therefore the aim of this study was to critically analyse the impact of this minimum wage increase on the competitiveness of different size garment manufacturers in Bangladesh. Literature in relation to the profitability of the industry, firm specific advantages of the large firms and the impact of institutional change on competitiveness were at first used in order to propose three different hypotheses. By incorporating the primary data collected from the multiple SME and Large case study organisations, these hypotheses were tested and then developed in the context of the garment industry in Bangladesh (refer to table 1.1. in the previous page).

In context of the findings and the hypotheses developed it should be noted that the vertically integrated large case study firms are in a better position to cope with this new minimum wages, which is clearly illustrated by the fact that the increase in cost due to the minimum wage was higher for the SME case study firms. Notably, both the large case study manufacturers have effective industrial engineering departments in their garment unit which is in turn helping them to increase the productivity of their workers by incorporating better monitoring, efficiency wages and adopting lean manufacturing techniques. Thus they also in a better position to address the primary concern in relation to the competitiveness of Bangladesh's garment industry which is the productivity of the workers and by concentrating on this issue they are also able to minimize the impact of the minimum wage as they need proportionately less workers to produce the same amount of goods.

Secondly due to the minimum wage, the profitability of supplying to the value customers decreased more in comparison to mid-market brands. The large case study firms being vertically integrated are more capable of supplying to these mid-market brands. Notably, one of the large case study firms cater to this market by leveraging their backward units of spinning, knitting and dyeing to produce novelty fabric which in turn helps increasing the perceived value of the final product produced in their garment unit. Whereas the second large case study firm is using their forward linkages of having country offices in US to target such mid-market brands. Furthermore issues such as flexibility in pricing across different stages of production (i.e. spinning, knitting, dyeing and garments) is also helping the large firms to minimize the impact of minimum wage on their garment units. Finally with a note of caution this paper outlines that there has been some instances of institutional decoupling which were identified using the interviews. However, the stringent monitoring imposed by Accord and Alliance is limiting the ability to currently pursue such mock compliance especially in relation to workers hiring policy. This factor is having a less significant effect on the large case study garment manufacturers who clearly indicated that they addressed such compliance issues even before the emergence of Alliance and Accord. Therefore in summary this research dictates that the effect of minimum wage was far more severe in SME case study firms in comparison to the large case study firms. Therefore given the importance of the topic, the next section will highlight the strategies which the SME case study firms should incorporate in order to minimize the effect of the minimum wage. This information can in turn be used to provide preliminary guideline to other similar SME how to tackle this increase in cost.

Strategy for the SME case study companies (4 & 5):

According to Riley and Bondibine (2013), the increase in minimum wage especially in low paying industry like apparels is usually adjusted by increasing labour productivity. Therefore this study suggests both the SME case study firms to focus on increasing their labour productivity which will in turn help them to minimize this impact of minimum wage. As identified by the interviews in the study, productivity of both the large case study firms were greatly increased by incorporating efficiency wages for the workers, better monitoring and by incorporating lean manufacturing techniques. Notably, both the large organisations are able to incorporate these issues by allowing their industrial engineers to strategize in relation to these issues. Therefore the paper urges both the SME case study firms to benchmark the large case study firms and address the issues in relation to lower productivity by incorporating similar techniques.

Secondly it was clearly identified that the large case study firms are also benefitting greatly being vertically integrated. However as noted in this study, the cost of setting up the downstream production facilities especially in relation to spinning unit is very high and as such the paper won't advice the SME's to start up their own knitting, spinning or dyeing units as it won't be a feasible strategy. From the resource based view perspective, alliances can occur when a firm requires additional resources which cannot be built internally within acceptable cost Hoffman and Schlosser (2001). Therefore the research proposes case study SME's to form strategic alliance with independent downstream companies which will in turn enable them to act like a part of vertically integrated organisation. Notably, in contrast to traditional arm's length transaction, strategic supplier alliances are long-term, cooperative arrangements between individual participants in the supply chain which has the potential to strengthen the operational and strategic capabilities for the all participating firms. Moreover strategic supplier relationship is also different from simple long-term partnerships as the participating firms in strategic alliances not only buy the products from the downstream participants but also their capabilities and system (thus incorporating higher level of coordination) (Monczka et al, 1998). If successfully incorporated, strategic alliances can lead to all the participating firms to reap benefits from having superior supply chain synchronization, furthermore cost of the final product can also be reduced and quality of the products could also be improved by pursuing such strategies. Furthermore according to Eisenhardt and Schoonhoven (1996) the very close inter-firm relationships that exist within alliance partners provides specific knowledge-based resources like manufacturing or customer information which will in turn can give the firms a competitive advantage over rivals. Moreover, the paper also suggests both the SME's to find strategic partners who are capable of producing good quality fabric (i.e. the raw material), by this way the SME's could leverage their capability of flexibility especially in terms of producing in small batches to serve high end customers where the profitability per item is higher. However, in order to achieve this goal it is of pertinent importance that the SMEs should also train their workers in relation to producing better quality products and should provide incentives like pension schemes which will in turn lead discourage the trained workers not to switch to other factories.

Future Research

Firstly, the hypotheses that were developed in the context of the Bangladesh garment industry can be tested by using a deductive approach by selecting similar types of case study firms. If findings from both the study matches, then it would provide a strong rationale for establishing the validity of this study. This is something which the researcher feels would be of great value for both business and academia in this area.

Notably, this study only incorporated large garment units that also have vertically integrated units across the supply chain (i.e. the company both the large companies have their individual spinning unit, knitting unit and dyeing unit). However, it would be really interesting to find out that whether the large firms that only has garment unit are having similar competitive advantages over the SMEs especially in relation to produtivity.

Another interesting topic to analyse will be how the informal institutions in terms of consumer pressure from developed country is affecting the international retailer's policies of sourcing from Bangladesh and its subsequent effect on the second largest garment exporting country in the world. Here the focus will be on how the informal institutions are shaping the formal institutions in this context.

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7. Appendix

Appendix 1: Gazette on Minimum Wage Rate for different grades of Garment Workers

Grades	Basic (BDT)	House rent	Medical allowance	Transport allowance	Food allowance	Gross salary
1	8,500	3,400	250	200	650	13,000
2	7,000	2,800	250	200	650	10,900
3	4,075	1,630	250	200	650	6,805
4	3,800	1,520	250	200	650	6,420
5	3,530	1,412	250	200	650	6,042
6	3,270	1,308	250	200	650	5,678
7	3,000	1,200	250	200	650	5,300

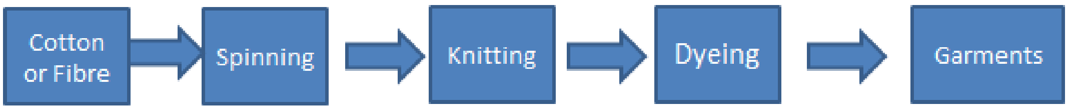
Source: Ministry of Labour and Employment of Bangladesh (Translated by the author).

Appendix 2: List of Interviewee's and their contact details

Company Number	Company Name	Interviewee Name	Designation	Email ID	Number of Employees in Garments
1	Reedisha Knitex Limited	Iqbal Ahmed	Senior Vice President (Merchandising & Marketing)	**iqbalahmed@rkl-bd.com**	6000
2	Knit Asia Limited	Amer Selim	Director	**amersalim@knitasia.com**	6500
3	Alif Group	Muhammad Mustafa Haroon	General Manager	**qamer.alifgroup@yahoo.com**	5500
4	Topaz Group	Areefen Anam	Director Strategic Planning	arefeen@topazgrp.com	1500
5	Virtus Group	Eshraf Ali Chowdhury	Managing Director	**eshraf.chowdhury@virtus-limited**	2500
6	Fatullah Group	Minhazul Haque	Director	**minhaz_hoque@yahoo.com**	800

Appendix 3: Confidential information by Director of Case Study Company 6: The process flow of Garments along with Prices

Process flow of making a T-shirt along with the breakdown of prices at different stages



Spinning – part of the manufacturing process where the fibre (mostly cotton) is converted into yarn. (60% cost)
Knitting – the process which converts the yarn into cloth (gray fabric). (5% cost)
Dyeing – where the cloth (gray Fabric) is being processed as such that it is ready to be fabricated into clothes. (20% cost)
Garments – this is where the cloth is being made according to buyer's order (15%)