Analysis of a U.S. Fashion Brand's Outsourcing from Bangladesh:

A Case Study of Obstacles and Suggested Improvements

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This thesis titled

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Abstract

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Analysis of a U.S. Fashion Brand's Outsourcing from Bangladesh: A Case Study of Obstacles and Suggested Improvements

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Since the 1960s, the United States (U.S.) has become one of the largest apparel importers in the world. Bangladesh plays a significant role as an outsourcing destination in the U.S. apparel industry by supplying a large quantity of low to medium price point products. From the Multi-Fiber Arrangement (MFA) era, Bangladesh is emerging as a great destination for global fashion brands. The purpose of this research is to examine apparel outsourcing from Bangladesh. This inquiry is guided by the following research questions: 1) How is Philips-Van Heusen (PVH)'s outsourcing performance from Bangladesh compared with Vietnam? 2) How do U.S. Fashion product buyers in PVH view their outsourcing from Bangladesh? 3) How do Bangladeshi fashion product suppliers of PVH view their exporting to the U.S.? and 4) How can this fashion supply chain be improved to make the future U.S.-Bangladesh fashion business sustainable? This research used a sequential mixed methods case study approach on a leading U.S. apparel manufacturing company. By using a supplier evaluation model, it is seen that Bangladesh is in a competitive position compared to Vietnam, the second largest apparel exporter to U.S. The model has five clusters of supplier performance areas and 20 factors under those clusters. For the cost cluster, the lower the cluster score, the better the performance. Out of the five clusters, Bangladesh (0.106) has a greater advantage in the

cost cluster than Vietnam (0.281). Bangladesh (0.204) is also more advanced in the quality cluster than Vietnam (0.192). Bangladeshi suppliers performed better than expected in the capacity, negotiability, continuous improvement, and certification factors. In the second phase of the research, interviews were taken from buyers and their suppliers. Buyers have some concerns in the factor areas of geographic location, trade restrictions, country's political situation, warranty policies, and currency exchange situations. Suppliers are not fully efficient in customization, total order lead time, and certification factors. However, the buyer is adjusting with them by making a flexible lead time schedule, ordering according to suppliers' capacity, etc. The buyers' training program and improvement program among suppliers are improving the suppliers' ability to perform better. The buyer is straight forward regarding company's standards including a feeling of trust and capacity. The buyer-driven industry is favoring the U.S. buyers in negotiation, customer service, and suppliers' selling price factors. Although suppliers have some limited capability, the buyer is satisfied with the performance including capacity, inventory availability, supplier's selling price, and negotiability factors. Suppliers have similar opinions compared to the buyer in freight terms, trade restrictions, capacity, customization, continuous improvement programs, certification, country's political situation, etc. Suppliers showed their eagerness to upgrade their standard to the buyers' requirements. But suppliers have dissatisfaction in terms of trade restriction, negotiability, and percent of on-time shipment factors. The researcher made some suggestions to improve the low performed factors. External stakeholders of the apparel industry, both at home and abroad, should collaborate with the buyers-suppliers to make

those areas more sustainable. Future research is expected to explore more cluster level studies to reveal more detailed scenarios.

Dedication

I am dedicating my thesis to my loving family and my loving in-law's family.

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I sincerely thank to my graduate advisor, Dr. Mijeong Noh, dean's representative Dr. Adah Ward Randolph, committee member Lisa Williams for their valuable guidance in completing this thesis. I wish to express my gratefulness to all the persons involved in my thesis process. I also would like to give thanks to my wife Marufa Marium for her endless encouragement and support.

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Chapter 1: Introduction

Bangladesh has had trade relations with the United States (U.S.) since the late 1970s (Haque & Taslim, 2011). Currently, Bangladesh is the third largest apparel exporter to the U.S. (OTEXA, 2016). Because of this relationship with apparel exportation, it is important to know the key factors behind a reliable apparel sourcing process. It is hoped that this information will support future retailers to construct better strategies to create a more sustainable fashion supply chain.

The main reason for apparel product sourcing from abroad to the U.S. is low labor cost. Other reasons include: tariffs, product quality, lead time, exchanges rates, transportation costs and fashion ability. U.S. business firms are following the buyer driven economy where the firms design and market items without producing the products; and outsource their products from abroad (Gereffi, 1994) which is "offshore outsourcing" (Oshri, Kotlarsky, & Willcocks, 2009). To survive in the competitive global market, firms should evaluate all potential suppliers so they can select the most suitable supplier. Factors such as quality, supplier certification, facilities, continuous improvement, physical distribution, and channel relationship play significant roles in the evaluation process of suppliers (Weber, 1991). Regardless of the production base, consumers want maximum product quality at a minimum cost (Aksoy, & Öztürk, 2012). Global outsourcing usually considers quality, delivery, responsiveness, innovativeness and cost together; whereas traditional purchasing tries to reduce procurement cost (Narasimhan, Talluri, & Mahapatra, 2006). Incorporation of outsourcing strategies into operations strengthens the competitiveness of firms (Tam et al., 2007). Global

outsourcing plays an important role in a firm's competitiveness and growth (Zeng, 2000). According to Mol, Tulder, and Beije (2005), global outsourcing is not a performance enhancing tool but just a production cost balancing tool (abroad versus local). According to Kremic, Icmeli, and Rom (2006) core competence, critical knowledge, impactful quality, flexibility, cost difference between in-house and outsourced products, and integration may impact global outsourcing decisions. The more core function to the organization, the less possibility to be outsourced. Also, critical knowledge, like unique data or technology of an organization, is less likely to be outsourced. If the quality of an organization is not high, companies need to outsource for potential improvement. If a function costs more to perform internally than purchasing the service, then it is better to outsource the service to reduce cost. Heavily integrated functions of companies, where more interactions and communication channels are maintained, are less likely to be outsourced (Paoli & Prencipe, 1999; Prencipe, 1997).

According to Gereffi (1994), a buyer driven markets' profit is not derived from scale economies but from a combination of high level research, design, sales, marketing, and financial services. This makes the retail brands play the strategic role through linking up the foreign outsourcing destination. Outsourcing destinations should comply with these factors of the buyer's company. Today, most U.S. firms outsource products from third world countries. Since each country is different in production expertise, strengths, weaknesses, opportunities, and threats, U.S. firms need to know which production base fits within the U.S. market.

Bangladesh is currently one of the largest apparel exporters in the world. In 2015, Bangladeshi suppliers earned $5.4 billion from the U.S. market by exporting apparel products (OTEXA, 2016). In Bangladesh, ready-made garments are divided into two broad manufacturing categories: woven and knit garments. The woven products are shirts, denims, pants, etc.; whereas knit products are undergarments, socks, t-shirts, sweaters, etc. The U.S. is the leading importer from Bangladesh. Germany and the UK are the second and third (Haque & Taslim, 2011).

China is currently the number one exporter to the U.S. in terms of monetary value. Current figures on apparel export to U.S. show that Chinese apparel industry has exported 34.59% of total U.S. apparel imported in the year 2016 (OTEXA, 2017). Chinese apparel industry's performance is unmatchable to any other offshore outsourcing destination in terms of its manufacturing capacity, skills, product quality, and product diversification. However, buyers are concerned about their increasing wages which can downgrade their global competitiveness (Wright, 2017). Leading apparel buyers in the U.S have plans to reduce the amount of imports from China (Berg et al., 2011). Therefore, other top outsourcing destinations should come forward to grab this market share. Countries such as Bangladesh, Vietnam, India, Indonesia, have gradually increased their exports to the U.S. for the last five years. Currently, Vietnam holds the second position and Bangladesh holds the third position for exporting apparel to the U.S. (OTEXA, 2016). Vietnam and Bangladesh also have a large manufacturing capacity, and thus have potential to become major exporters to the U.S. (Berg et al., 2011). Therefore, the researcher wants to investigate Bangladesh's current offshore outsourcing

performance by comparing it with top competing country such as Vietnam, and by analyzing an U.S. brand's view towards this supply chain. The researcher wants to know the role of outsourcing of Bangladeshi apparel industry in the U.S. market and how to reduce the effect of inefficiency factors to make this outsourcing sustainable long-term.

The U.S. fashion retail marketers can take advantage of Bangladesh as an outsourcing destination to enhance their performance in the apparel business by knowing key aspects (advantages, problems, solutions, etc.) of apparel outsourcing from Bangladesh. Few studies address or examine apparel product outsourcing from Bangladesh to the U.S. Therefore, this study hopes to provide the industry with valuable guidance and resources from which to maximize the performance of supplying apparel products. Thus, the purpose of this research is to examine apparel outsourcing from Bangladesh by a U.S. fashion brand named Philips-Van Heusen (PVH). This inquiry is guided by the following research questions: 1) How is Philips-Van Heusen (PVH)'s outsourcing performance from Bangladesh compared with Vietnam? 2) How do U.S. Fashion product buyers in PVH view their outsourcing from Bangladesh? 3) How do Bangladeshi fashion product suppliers of PVH view their exporting to the U.S.? and 4) How can this fashion supply chain be improved to make the future U.S.-Bangladesh fashion business sustainable?

In Chapter 2, the definition and aspects of global outsourcing, U.S. fashion outsourcing, and Bangladeshi and Vietnamese outsourcing performance are discussed. Researcher describes the research methodology in Chapter 3. Chapter 4 summarizes and discusses results and findings relevant to research question one, two and three. Chapter 5

discusses about the final research question and concludes the research on the whole. The implications of this research, insights for future research, and current research's limitations are discussed in Chapter 6.

Chapter 2: Literature Review

Global Outsourcing

Today's global business environment encourages large manufacturing companies to shift their production facilities offshore. This turns out to be a competitive advantage for them. This is a way to have manufacturing capabilities without investing capital (Narasimhan & Das, 1999). So, if they would invest capital for manufacturing, they had to spend for land, labor, materials, machinery, etc. Most of the manufacturing firms pay significant costs for raw materials, component parts, and service. If they are willing to boost their profit, at first, they should identify what to buy (Tully, 1995; Vokurka, 1998). Companies should retain work related to their core competencies and outsource other activities (Dolgui & Proth, 2013). Core competencies include expertise beyond traditional functions. A company should be able to adapt with the changes in long-term demands of clients. This adaptability will dominate over the competitors regarding skills (Quinn & Hilmer, 1994). The American multinational companies' new competitive environment requires globalized corporate strategy to engage with various kinds of sourcing including outsourcing, offshoring, offshore outsourcing, nearshoring, and on-shoring (Oshri, Kotlarsky, & Willcocks, 2009). The term outsourcing is defined as "not only purchases products or services from sources that are external to the organization, but also transfers the responsibility of the physical business function and often the associated knowledge (tacit and codified) to the external organization" (McCarthy & Anagnostou, 2004, p. 63) and "the act of obtaining semi-finished products, finished products or services from an outside company if these activities were traditionally performed internally" (Dolgui &

Proth, 2013, p. 6,770). According to Oshri, Kotlarsky, and Willcocks (2009), offshoring is defined as "relocation of organizational activities to a wholly owned subsidiary or an independent service provider in another country" (pp. 7-8). And specifically, when the work is offshored to an independent third party, it is termed as offshore outsourcing (Oshri, Kotlarsky, & Willcocks, 2009). In this study, the researcher will focus on "offshore outsourcing" where the manufacturers are located in different countries.

U.S. Apparel Outsourcing

Apparel manufacturers in the U.S. went abroad for cheaper labor. 90% of the apparel that American manufacturers purchase is made in China, Mexico, Bangladesh, etc. (Kiviat, 2008). In 1990, there were one million people in the U.S. who worked in apparel manufacturing. But in 2016, there are fewer than 150,000 people in this sector (BLS, 2016). Global outsourcing saves approximately 10-40% of cost (Frear et al., 1992; Minahan, 1996; Mankiw, 1999). American textile and apparel brands are now outsourcing from developing nations, which turns out to be a key strategy (American Apparel and Footwear Association, 2015). According to Shelton and Wachter (2005), the initial goal of fashion product outsourcing was to achieve low cost operations and to satisfy the need for business flexibility, which is needed to serve the market demand of low-cost fast fashion. McPherson (1987) suggests that apparel industries develop flexibility to encounter uncertainty and change in apparel manufacturing. There are two ways to achieve flexibility: One is a quick response strategy which includes using Computer Aided Design (CAD)/Computer Aided Manufacturing (CAM) with sharing information electronically (Parsons, 1987). The other is producing apparel outside of the

U.S. (Jarnow & Dickerson, 1997). According to Saaty (1996), the most critical sectors in global textile/apparel supply chains are delivery, flexibility, cost, quality, and reliability. Sourcing strategies of the U.S. apparel industry depends on lead times, flexibility, production costs, and years in business (Kim & Rucker, 2005). Several researchers addressed that cost reduction, quality and availability are the main reasons for the increase in global sourcing (Gilibert, 1998; Monczka & Trent, 1991; Stundza, 1998). Since the 1960s, the U.S. has become one of the largest importers of textile and apparel in the world (Dickerson, 1999). The U.S. textile and apparel firms now have strong business relationships with apparel exporting countries, such as cut-and-sew vendors or full package vendors, after abolishing domestic production facilities (Abernathy et al., 2006). In 2015, U.S. textile and apparel imports were $111.93 billion, which was nearly 2.5 times of that in 1995. In the case of apparel, the U.S. companies imported $85.16 billion from all over the world in 2015. China had the largest share of $30.54 billion.

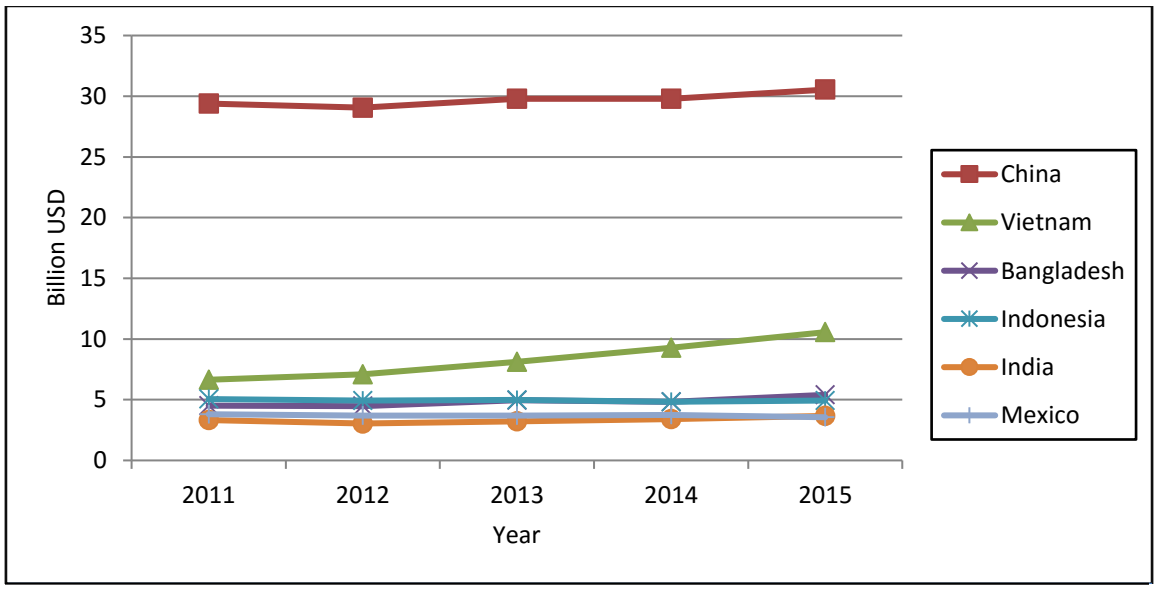

Figure 1. U.S. apparel import from top six countries for 2011-2015

Vietnam, Bangladesh, Indonesia, India, and Mexico had shares of $10.56, $5.4, $4.94, $3.67, and $3.56 billion respectively (OTEXA, 2016). For the last four decades, China and Mexico have been two key players in apparel exports to the U.S. market. Vietnam, Indonesia, and Bangladesh entered in this market after Taiwan and South Korea had given up. So, U.S. apparel export is very dynamic and challenging (Nur, 2016). As shown in Figure 1, China has been the top supplier, while other countries have been in close competition. Bangladesh has been increasing its exports gradually for the last five years (OTEXA, 2016). In 2010, China dominated the U.S. and European market by exporting 40% of the Ready-Made Garment (RMG) products in each of these regions. But China is facing an increase in wage and capacity pressure in its garment industry. A survey showed that, 54% of the leading U.S. and apparel buyers planned to decrease sourcing from China up to 10% from their current standing (Berg et al., 2011). Another 32% of leading U.S. and apparel buyers plan to decrease more than 10% from their current standing within the next five years (Berg et al., 2011). So, Western apparel buyers are searching for the "next China." Bangladesh is clearly a potential candidate in this regard (Berg et al., 2011). Goldman Sachs mentioned Bangladesh in the "Next 11" emerging countries and JP Morgan lists Bangladesh in its "Frontier Five" emerging economies for investing. Mainly, Bangladesh has two strong advantages of price and capacity. U.S. retailers showed that their first and foremost reason for purchasing from Bangladesh is price attractiveness. Bangladesh has around 5,000 garment manufacturing factories, which puts it in the lead of the Southeast Asian Garment industry in terms of capacity. Indonesia, Vietnam, and Cambodia have 2,450, 2,000 and 260 factories, respectively.

Bangladesh suppliers have the ability to handle good quality and large orders for value and lower mid-market consumers (Berg et al., 2011). Choosing an overseas sourcing partner that is easy to work with is important for a new buyer in global sourcing (Winther, 2005). To get a more cost saving approach, U.S. apparel businesses kept their core business areas, such as research and development, domestically and started importing finished products. It relied on Far East countries' production base (Gereffi, 2001). Asian sourcing destinations like Bangladesh, China, Sri Lanka, Vietnam, Indonesia, and the Philippines are very attractive because they have a low hourly labor wage that are less than one dollar (Ostroff, 1996). But those countries are risky due to some common problems like political and economic instability and underdeveloped infrastructures. Therefore, choosing a reliable sourcing destination is a major challenge.

Key Factors for Successful Outsourcing

Previous scholars have found factors, which are possible obstructions to sourcing such as poor infrastructure, sub-standard local supply base, local labor literacy and training skills deficiencies, tight government controls and misaligned organizational structures (Gosen et al., 2005). According to the National Retail Federation (NRF), Asian countries such as China, India, Pakistan, and Bangladesh have very low cost supply but their lead time is longer. Two factors, cost and delivery time, need to be balanced while sourcing. China and other Asian countries are in this balancing position. This advantageous position of Asian countries attracts U.S. buyers. A maximum of 80% of U.S. retailers will continue to source apparel from China and other Asian suppliers such as India, Pakistan, and Bangladesh, according to an American Apparel Producers'

Network survey (Foreign Direct Investment, 2005). Trust is another factor in outsourcing in the context of buyer-supplier relations. According to Borneman, trust is overlooked while speed, quality and cost elements of sourcing are given importance (Borneman, 2005a; Borneman, 2005b). Selection of the supplier and buyer-supplier engagement positively affects the buyer-supplier relationship success and the buyer's performance (Kannan & Tan, 2006). The buyer-supplier relationship means the activities between a buyer and a supplier involving various types of marketing interaction such as long-term relationship, buyer-supplier partnership, and strategic alliance, etc. (Frederick & Webster, 1992). In a buyer-supplier partnership, where each party has some form of dependence on the other party in a specific area of action, mutual trust replaces any kind of adversarial situation. A bad buyer-supplier relationship may effect timely shipment, losing customers as well as market shares. One missing link in a supply chain can throw away the whole process. One bad relationship ruins on-time delivery, relationship with loyal customers and possibly even market shares. One broken link in the supply chain may destroy the synergies gained through efficiency and cost reduction. Therefore, building partnerships based on long-term relationships as well as trust is important. Supplier selection is now important more than ever before (Kumar & Samad, 2007).

Gary Teng & Jaramillo (2005) suggested 20 factors under five clusters through which an apparel buyer should select and evaluate his suppliers (Table 1).

Table 1

Clusters and factors description

Clusters/Factors	Description
1.Delivery	Factors related to product delivery from an outsourcing destination to buyer's country (Gary Teng & Jaramillo, 2005).
1.1. Geographic location	How closely the supplier is situated physically to the customer or buyer (Handley & Benton, 2013).
1.2. Freight Terms	Favorability of shipping terms and conditions from the supplier's side (Gary Teng & Jaramillo, 2005).
1.3. Trade Restriction	Government regulations to restrict certain types of products to enter the country by considering tariffs and custom duties (Min, 1994).
1.4. Total Order Lead Time	Total time involved from buyer's order placement to the reception of the final product from the vendor in buyer's facility (Gary Teng & Jaramillo, 2005).
2.Flexibility	Extent to which a supplier can fulfill a customer's demand if it arises suddenly. It embraces all its own departments and other collaborators of suppliers i.e. raw material suppliers, logistics, service providers, etc. (Duclos et al., 2001).
2.1. Capacity	Quantity of products that a supplier can handle (Gary Teng & Jaramillo, 2005).
2.2. Inventory availability	Buyer requires safety stock of raw material/finished goods to the supplier (Gary Teng & Jaramillo, 2005).
2.3. Information sharing	For effective coordination throughout the whole apparel supply chain, suppliers and buyers require to share their information (Kulp et al., 2004). Among the different mode of communication, electronic data interchange (EDI) is now a day popular because it can transfer large amount of data in quick time than traditional paper based system (Hill and Scudder, 2002; Kim et al., 2006). Through EDI, buyer can get the status of inventory levels, production plans, and status of the current production from supplier's side. In addition, supplier can get buyer's fashion forecast for upcoming seasons. Therefore, on time information availability can expedite the process in every step of supply chain (Gery teng & Jaramillo, 2005). If there is additional supply chain information in the system, buyer and supplier can change their current plan for future activities (Hsu et al., 2008).
2.4. Negotiability	Negotiation between buyer and supplier is easier in long term relationship, and trust is related to this (Min, 1994).
2.5. Customization	Some of the orders from buyer require special machine setup or special skill from the supplier (Gary Teng & Jaramillo, 2005).
3.Cost	Cost is one of the most influential cluster for choosing supplier for U.S. textile/manufacturers. As global suppliers' manufacturing cost is low compared to U.S., the U.S. textile and apparel manufacturer

Table 1: continued

	prefers to outsource their product partially or fully from them (Gary Teng & Jaramillo, 2005).
3.1. Supplier's selling price	Buyer looks for the cheapest price product from supplier which affects the ultimate retail price (Gary Teng & Jaramillo, 2005).
3.2. Internal Cost	Some internal costs such as tariff, transportation, waste, defects, plant visit, local office operations associated to product purchase which buyer should bear (Gary Teng & Jaramillo, 2005).
3.3. Ordering and invoicing	Placing order in an easy way. EDI technology is used now a day to place any order to the supplier from buyer which requires less human interaction. In this way, some obstacles like language barrier and time zone problem can be overcome. Same thing happens in case of invoicing. Customer wants simple invoicing system with payment time (Gary Teng & Jaramillo, 2005).
4.Quality	It consists of the following factors.
4.1. Continuous Improvement Programs	Supplier's effort to increase his ability in fulfilling buyer's requirements (Gary Teng & Jaramillo, 2005).
4.2. Customer Service	Supplier's response after the sales. Such as, if any customer request or complaint comes in from customer side, how the supplier respond (Gary Teng & Jaramillo, 2005).
4.3. Certifications	Many international buyers have demand to comply with their code of conducts. Social compliance monitoring needs synchronized coordination among the stakeholder (Ahamed, 2012). Buyer requires recognized organization's certification from the supplier to get assurance of their quality in management, production, sustainability, etc. It gives assurance of the suppliers' capability of maintaining their standard (Motwani et al., 1999).
4.4. On-time shipments	Sometimes, obstacles like, in-transit delays, customs inefficiencies, quota limitations and inefficient paperwork processes delay on-time shipment. (Motwani et al., 1999).
5.Reliability	This cluster includes the reliability of supplier's activity to maintain supply chain process (Gary Teng & Jaramillo, 2005).
5.1. Feeling of trust	Continuous partnership between supplier and buyer, supplier's past performance evaluation (Gary Teng & Jaramillo, 2005).
5.2. Currency exchange situation	Usually the supplying countries who devalue their currency get competitive price in international business. Situation is opposite to the countries with reevaluated exchange rate (Gary Teng & Jaramillo, 2005).
5.3. Country's political situation	Situation beyond suppliers control which may hinder product supply from supplier's side (Gary Teng & Jaramillo, 2005).
5.4. Warranty policies	Warranty is a part of buyer-supplier business agreement. For late deliveries or product damage, buyer may ask for penalty (Gary Teng & Jaramillo, 2005).

Vietnam as an Outsourcing Destination

The Vietnamese apparel industry has exported total $28.2 billion worth of products to the world market in the year 2016, which was an increase from $27.5 billion in 2015. (Russell, 2017). The U.S. is their largest export market after China. The Vietnamese industry is manufacturing for over 50 countries. The Vietnam government has plans to increase the apparel production by 12-13% each year during the 2013-2020 period (Russell, 2014). During the 2010-2016 period, Vietnam had the steadiest increase in export volume to the U.S. It has grown from 5.8 billion USD in 2010 to 10.8 billion USD in 2016, which stands for a total export increase from 8.23% to 13.39% (OTEXA, 2016). Around 2.5 million people were involved in the Vietnamese textile & garments industry in the year 2016. This industry contributes 10-15% of their GDP per year (VTAA, n.d.), but they are lacking a sufficient backward raw material industry. They have to import more that 70% of their raw materials from China, Korea and Taiwan (Vinatex, 2016).

The Vietnamese industry has the main advantage on labor intensive operations (PR, 2016). Companies from China are investing in Vietnamese textile and apparel industry, as China is concerned with the wage rise at home (Magnier, 2015). Vietnam's central Thua Thien-Hue province is going to be the textile and garment hub for Vietnam where $295 million USD is going to be invested during 2016-2020 period. This hub will develop research, design, branding and promotion for the Vietnam's textile and apparel industry. However, this industry is concerned with the rise of minimum wage, which has increased 7.2% recently (Russell, 2016).

Bangladesh as an Outsourcing Destination

In Bangladesh, the ready-made garment industry is the single largest business, in terms of export earnings. The majority of foreign exchange earnings comes from this sector (Tanvir, Goswami, & Muqaddim, 2015). More than four million jobs are created here and 90% of those jobs are for women. There are two main segments, woven and knit garments, in Bangladeshi ready-made garment industry. Shirts, denims, pants, etc. are the woven products, and undergarments, socks, T-shirts, sweaters, etc. are knit products. Tables 2 and 3 show some export figures of Bangladeshi apparel products. The U.S. is the leading importer from Bangladesh and Germany and the UK are the second and third largest (Haque & Taslim, 2011). The North American and European market jointly have 90% apparel import from Bangladesh (Bangladesh Bank, 2015; Haque & Taslim, 2011).

Table 2

Bangladesh's export amount of major apparel items within the last fifteen years in million USD (BGMEA, 2016a)

Year	Shirts	Trousers	Jackets	T-Shirt	Sweater
2000-2001	1,073.59	656.33	573.74	597.42	476.87
2002-2003	1,019.87	643.66	464.51	642.62	578.37
2004-2005	1,053.34	1,667.72	430.28	1,349.71	893.12
2006-2007	943.44	2,201.32	1,005.06	2,208.90	1,248.09
2008-2009	1,000.16	3,007.29	1,299.74	3,065.86	1,858.62
2010-2011	1,566.42	4,164.16	1,887.50	4,696.57	2,488.19
2011-2012	1,733.54	4,686.39	2,231.16	4,713.11	2,340.34
2012-2013	1,972.89	5,185.48	2,634.28	5,143.22	2,620.73
2013-2014	2,173.73	5,690.78	2,973.16	5,863.81	2,932.94
2014-2015	2,271.43	5,697.83	3,183.17	6,064.13	2,829.16

Table 3

Bangladesh's export amount of top 10 woven garments in 2014-2015 (BGMEA, 2016a)

Harmonized Tariff Schedule (HTS) Code	Product Description	Million USD
62034200	Men's or boys' trousers, bib & brace overalls, breeches & shorts, not knitted or crocheted, of cotton.	4,866.81
62046200	Women's or girls' trousers, bib & brace overalls, breeches & shorts, not knitted or crocheted, of cotton.	2,065.87
62052000	Men's or boys' shirts, not knitted or crocheted, of cotton.	1,648.87
62059000	Men's or boys' shirts, not knitted or crocheted, of textile materials, other than wool, fine animal hair, cotton & man-made fibres.	568.30
62046900	Women's or girls' trousers, bib & brace overalls, breeches & shorts, not knitted or crocheted, of textile materials, other than wool, fine animal hair, cotton & synthetic fibres.	398.60
62063000	Women's or girls' blouses, shirts & shirt-blouses, not knitted or crocheted, of cotton.	303.90
62034900	Men's or boys' trousers, bib & brace overalls, breeches & shorts, not knitted or crocheted, of textile materials, other than wool, fine animal hair, cotton & synthetic fibres.	293.45
62121000	Brassieres of textile materials, whether or not knitted or crocheted.	235.83
62046300	Women's or girls' trousers, bib & brace overalls, breeches & shorts, not knitted or crocheted, of synthetic fibres.	199.91
62019300	Men's or boys' anoraks (including ski-jackets), wind-cheaters, wind-jackets & similar articles, not knitted or crocheted, of man-made fibres.	194.94

For Bangladesh, it was predicted that, after the phase out of Multi-Fiber Arrangement (MFA) quotas, there would be a significant fall in apparel exports, employment, and the number of factories. As a result, Bangladesh would face intense competition with new export countries (Ahmed, 2013). But the prediction did not come true. Though the garment industry in Bangladesh has common instability, this sector is strongly stable during the post MFA era. This tremendous performance was possibly due

to establishing lean manufacturing techniques, formation of an industrial police force, political stability, establishing captive power plant and getting Generalized System of Preferences (GSP) facilities (Ahmed, 2013). Berg et al. (2011) showed that, retailers are concerned with infrastructure, compliance, supplier performance and workforce supply, raw materials, economic and political stability. But buyers from Bangladeshi garments industry are influenced by cheap labor, high production skills, improved quality, and competitive prices (Saxena & Salze-Lozac'h, 2010).

Based on the previous studies above, it is clear that Bangladesh is an emerging country for apparel outsourcing. Although Bangladesh has various economic and political problems, it is performing well in supplying apparel products. Thus, it is meaningful to explore whether apparel outsourcing from Bangladesh plays a role in the U.S. market and if so, how does it reduce the effect of inefficiency factors to make this outsourcing sustainable long-term.

Chapter 3: Methodology

Sequential Mixed Method Case Study

In this research, a sequential mixed methods case study is conducted. In a sequential mixed method, "One part comes first and the other part of the study follows. Either the quantitative or qualitative part of the study can come first. Often the results of the first part of the study influences what occurs in the second part of the study" (Thomas, Nelson & Silverman, 2011, p. 372). Among various types of sequential mixed case studies, this researcher has chosen a sequential explanatory strategy. For this study's first phase, quantitative data is collected and analyzed, which is followed by qualitative data collection and analysis supported by the first phase results. In this type of method, follow-up qualitative data explains and interprets quantitative results (Creswell, 2009).

In case study research, a researcher does in-depth inquiry on a program, event, activity, process, or one or more individuals. The case is bounded by a specific time. The researcher needs to collect detailed information through various types of data collection techniques (Stake, 1995).

The researcher for this thesis wanted to understand one single company's perspective on outsourcing, as this company is working in a potential outsourcing destination. It was necessary to know this outsourcing destination's current performance compared to other destinations. Mathematical data analysis using a performance evaluation model would give the answer easily. To support that data or to strengthen the quantitative part, qualitative interviews were needed. In the qualitative part, interviews

were taken from the outsourcing related professionals. Interview questions were carefully chosen to address all the outsourcing factor areas.

Therefore, in this research, an in-depth case study is conducted on a single company's business activity. In the first phase of the research, the first research question "How is PVH's outsourcing performance from Bangladesh compared with Vietnam?" is investigated using a quantitative approach. To support the result of this question, a qualitative approach is taken in the second phase of the research. Here sample participants' responses were analyzed to answer the second and third research questions which were: "How do U.S. fashion product buyers in PVH view their outsourcing from Bangladesh?" and "How do Bangladeshi fashion product suppliers of PVH view their exporting to the U.S.?" Based on the analysis of these questions, the researcher tried to answer the fourth research question, "How can this fashion supply chain be improved to make the future U.S.-Bangladesh fashion business sustainable?" Therefore, the 'sequential mixed method case study' fits this research.

Sample Characteristics

The sample company is Phillip's Van-Heusen (PVH). This company is chosen because of various reasons. From the researcher's personal experience, it is known that PVH is one of the very few U.S. fashion brands which is operating its own office in Bangladesh to outsource apparel products. The company is outsourcing a large portion of its total products from Bangladesh. They have direct long-term experience to operate apparel outsourcing in Bangladesh. Also, it is one of the largest apparel company in the

U.S. To fulfill the research purpose, these features of PVH are a good fit to the current investigation.

There were six participants who took part in this research. Three of them are buyers from PVH local office, and the other three are suppliers to PVH in Bangladesh. All the participants were Bangladeshi textile and apparel professionals. Buyer participants were chosen to participate in this research because of their direct experiences on various aspects of U.S. fashion brand's outsourcing from Bangladesh. Supplier participants were nominated by these buyers, and these suppliers have direct experience handling U.S. fashion product outsourcing. Two of the participants took part in phase one, and all the participants took part in phase two research.

All participants are given numbers instead of using their names (Table 4). Four of them have bachelor's degrees and two of them have master's degrees. In Bangladeshi currency, which is Taka, one of the participants has 1,200,000+ Taka yearly income, four of them have 1,000,000+ Taka yearly income and one of them has 500,000+ Taka yearly income. In terms of age, one participant is within the age range of 25-29 years, two participants are within the age range of 30-34 years, two participants are within the age range of 35-39 years, and the final participant is within the age range of 40-44 years. Three of the participants hold merchandising manager positions, two of the participants hold senior merchandiser positions, and one of the participants holds a merchandiser position.

Table 4

Sample characteristics for first and second phase

	Age	Education	Income (In currency, Bangladeshi Taka)	Job Position	Years of Experience
Buyers					
1	35-39	Bachelor's	1,200,000+	Merchandising Manager	10+
2	30-34	Master's	1,000,000+	Senior Merchandiser	6-10
3	30-34	Bachelor's	1,000,000+	Senior Merchandiser	6-10
Suppliers					
1	40-44	Master's	1,000,000+	Merchandising Manager	10+
2	35-39	Bachelor's	1,000,000+	Merchandising Manager	6-10
3	25-29	Bachelor's	500,000+	Merchandiser	0-5

Data Collection

Before starting the research, approval is obtained for data collection from Ohio University's Institutional Review Board (IRB). Data is collected in second phase through computer assisted e-mailing and cell phone interviews. In the first phase, a supplier evaluation model table was sent through e-mail to Phillips Van-Heusen's (PVH) local office in Bangladesh where Buyer 1 has evaluated PVH's Bangladeshi suppliers' performance. Among the three participant buyers, Buyer 1 was the most experienced in the Bangladeshi apparel industry. Buyer 2 was an expert in the Vietnamese apparel industry, and he evaluated PVH's Vietnamese suppliers' performance.

The supplier evaluation model is taken from Gary Teng and Jaramillo's (2005) supplier evaluation model. Compared to other available supplier evaluation models, it is simplest to use for buyers who consider major supply chain operation factors. Also, the

most critical issues are included here as variables to evaluate apparel suppliers' performance. This model is developed specifically for the textile and apparel industry (Gary Teng & Jaramillo, 2005). Here, the buyer can evaluate the suppliers' performance directly and compare among several suppliers. Previously the model was used in a case study to evaluate textile suppliers who provide raw material to the apparel industry (Thanawaritanan, 2015). Permission to use the supplier evaluation model is given by Gary Teng (one of the authors) prior to the research.

In the second phase of research, interviews through phone and e-mail were taken from the PVH's Bangladeshi local office and the Bangladeshi suppliers' personnel. Before starting the interview, a consent letter regarding the interview is given to the participants. The conversations were recorded electronically. Conversations were done in English. There were two questionnaires: one for buyers (Appendix A), the other for suppliers (Appendix C). The interview questionnaires were mostly open-ended. In the open-ended question, "respondents are encouraged to answer in their own words and to reveal their own definitions of the situation" (Chadwick, Bahr & Albrecht, 1984, p.118). The researcher developed the questionnaire based on his personal job experience and the factors of the Gary Teng & Jaramillo's (2005) evaluation model. The questionnaires tried to cover all the factors in Gary Teng & Jaramillo's (2005) evaluation model (Table 5). In some cases, the same question covers more than one factor. Both buyers and suppliers expressed their inability to answer some questions which did not cover their own area of operation. Whether answered or not, all the questions are included in the questionnaires (Appendix A, B, C & D). There are some general questions too. After the interviews, the

researcher developed some supplemental questions based on the interview participants' responses. Therefore, the researcher took another session of interviews with the

Table 5

Breakdown of questionnaires for buyers and suppliers (Appendix A, B, C & D)

Cluster	Factors	Question Number for Buyers (Appendix A)	Total	Question Number for Suppliers (Appendix C)	Total	Supplementary Questions for Buyers (Appendix B)	Supplementary Questions for Suppliers (Appendix D)
Delivery	Geographic location	11	1	N/A	0	1	
	Freight terms	29	1	15, 25	2		
	Trade restrictions	12	1	16	1		
	Total order lead time	13	1	9	1		
Flexibility	Capacity	26	1	11	1	2	
	Inventory availability	10	1	8	1	3	
	Information sharing	27	1	20	1		
	Negotiability	28	1	23	1		
	Customization	25	1	24	1	4	
Cost	Supplier's selling price	17	1	22	1		
	Internal cost	17, 18	2	27	1		
	Ordering and invoicing	9, 16	2	21	1		
Quality	Continuous improvement programs	21	1	7, 10	2		
	Customer service	22	1	N/A	0		1
	Certifications	21	1	N/A	0		2
	Percent of on-time shipments	23, 24	2	14	1	5	
Reliability	Feeling of trust	14	1	18	1		
	Country's political situation	30	1	17, 19	2		
	Currency exchange situation	15	1	N/A	0		3
	Warranty policies	22	1	N/A	0		4
General Questions		1, 2, 3, 4, 5, 6, 7, 8, 19, 20, 31, 32, 33	13	1, 2, 3, 4, 5, 6, 15, 26	8		

participants using the supplementary questions (Appendix B & D). Global outsourcing is used as conceptual framework.

Data Analysis

First phase: Supplier Evaluation Model. For the first phase of research, mathematical calculations from the supplier evaluation table are done. The process is described below:

In Gary Teng and Jaramillo's (2005) supplier evaluation model, suppliers' performances are evaluated based on the calculation of five key supplier performance cluster scores [equation 1].

Table 6

Gary Teng & Jaramillo's (2005) supplier evaluation model

Cluster	Weight (C)	Factors	Weight (K)	DV	Supplier (Country) evaluation score	V value for Bangladesh
Delivery	Cd	Geographic Location	Kgl			Vgl
		Freight Terms	Kft			Vft
		Trade Restrictions	Ktr			Vtr
		Total Order Lead Time	Ktolt			Vtolt
Flexibility	Cf	Capacity	Kc			Vc
		Inventory Availability	Kia			Via
		Information Sharing	Kis			Vis
		Negotiability	Kn			Vn
		Customization	Kc			Vc
Cost	Cc	Supplier's Selling Price	Kssp			Vssp
		Internal Cost	Kic			Vic
		Ordering and Invoicing	Koi			Voi
Quality	Cq	Continuous Improvement Programs	Kcip			Vcip
		Customer Service	Kcs			Vcs
		Certifications	Kc			Vc
		Percent of On-time Shipments	Kos			Vos
Reliability	Cr	Feeling of Trust	Kft			Vft
		Country's Political Situation	Kcps			Vcps
		Currency Exchange Situation	Kces			Vces
		Warranty Policies	Kwp			Vwp

Total supplier score = delivery score + flexibility score + quality score + reliability score - cost score [1]

Each individual cluster score is calculated by the following process:

- Buyer gave individual cluster (C) and factor (K) weight based on its importance among the clusters and relevant group of factors respectively.
- The summation of weights must be 1.00.
- Buyer gave his desired value (DV) for each factor, the value that is acceptable by a buyer according to his policy and standard.
- Then, buyer gave his evaluation score for suppliers' performance for each factor.
- Supplier's V value is computed by dividing evaluation score by that factor's DV value.
- After that the cluster scores are computed by the equations of:

  Cluster score=Cluster weight [(1^{st} factor weight * 1^{st} factor V value) + (2^{nd} factor weight * 2^{nd} factor V value) + ……+ (n^{th} factor weight * n^{th} factor V value)]

  Therefore, the questions for all the clusters are:

  Delivery score = Cd[(Kgl*Vgl) + (Kft*Vft) - (Ktr*Vtr) + (Ktolt*Vtolt)] [2]

  Flexibility score = Cf[(Kc*Vc) + (Kia*Via) + (Kis*Vis) + (Kn*Vn) + (Kc*Vc)] [3]

  Cost score = Cc[(Kssp*Vssp) + (Kic*Vic) – (Koi*Voi)] [4]

  Quality score = Cq[(Kcip*Vcip) + (Kcs*Vcs) + (Kc*Vc) + (Kos*Vos)] [5]

  Reliability score = Cr[(Kft*Vft) + (Kcps*Vcps) + (Kces*Vces) + (Kwp*Vwp)] [6]

Individual cluster scores and total supplier scores will be calculated for both Bangladeshi and Vietnamese suppliers. Then these scores will be compared. Scoring scale for each Cluster's factors are described below (Gary Teng & Jaramillo, 2005) (Table 7):

Table 7

Scoring scale (Gary Teng & Jaramillo, 2005) for each cluster's factors

Cluster	Factors	Scale			
		1	2	3	4
Delivery	Geographic Location	Very far: suppliers located in the Far East and the Pacific Rim	Far: suppliers located in Europe, Africa, Middle East, and some other South American countries	Close proximity: suppliers located in Andean countries and Brazil	Very close proximity: suppliers located in Mexico, Central America, and Caribbean countries
	Freight Terms	Poor	Fair	Good	Excellent
	Trade Restrictions	Free-trade agreements between countries	Low trade restrictions	Moderate trade restrictions	High trade restrictions
	Total Order Lead Time	Poor: beyond 30 days	Fair: from 26 to 30 days	Good: 21 to 25 days	Excellent: from 15 to 20 days
Flexibility	Capacity	Low	Acceptable	High	Very High
	Inventory Availability	Low	Acceptable	High	Very High
	Information Sharing	Low Monthly updates and no EDI facility	Acceptable Updates in one or two weeks and low level EDI facility	High Weekly update and compatible EDI facility	Very High Real time update and compatible EDI facility
	Negotiability	Low	Acceptable	High	Very High
	Customization	Low	Acceptable	High	Very High
Cost	Supplier's Selling Price	Very Low Price	Low Price	Acceptable Price	High Price
	Internal Cost	Very Low Internal cost	Low Internal cost	Acceptable Internal cost	High Internal cost
	Ordering and Invoicing	Poor	Fair	Good	Excellent

Table 7: continued

Quality	Continuous Improvement Programs	Poor: Never presents signs of improvements	Acceptable: Rarely presents signs of improvements	Moderate: Occasionally presents signs of improvements	High: constantly presents signs of improvements
	Customer Service	Poor: supplier never attended complaints or requests promptly	Fair: suppliers attended complaints or requests promptly occasionally	Good: supplier attended complaints or requests promptly most of the times	Excellent: supplier always attended complaints or requests promptly
	Certifications	Poor: no certification	Acceptable: Has certifications for the U.S. market	High: has ISO 9000 certification but no supplier certifications for the U.S. market	Very high: has ISO 9000 certification and other supplier certifications for the U.S. market
	Percent of On-time Shipments	Low: less than 85%	Moderate: 85 to 90%	High: 90 to 95% of shipments	Very high: more than 95% of shipments
Reliability	Feeling of Trust	Low	Moderate	High	Very High
	Country's Political Situation	Poor	Fair	Good	Excellent
	Currency Exchange Situation	Non-Favorable	Neutral	Favorable	Very Favorable
	Warranty Policies	Non-Favorable: The supplier does not take any responsibility on non-conformities or late shipments.	Neutral: The supplier only takes partial responsibility on non-conformities	Favorable: The supplier takes partial responsibility on non-conformities or offers rebates when deliveries are not received on time	Very Favorable: the supplier takes full responsibility on non-conformities and offers rebates on late shipments

Second phase: Interview. For the second phase of research, narrative data from the interviews are analyzed to deduct generalized ideas. The participants' responses are mentioned using long, short, and text-embedded quotes. These responses and quotes are

also intertwined with the researcher's interpretation (Creswell, 1994). Then, by using existing literature, the researcher tried to identify a general scenario from these responses.

Chapter 4: Results & Discussions

PVH's Company Profile

Phillip's Van Heusen (PVH) Corporation is one of the world's largest dress shirt and neckwear companies. The company was founded in 1881, and is headquartered in New York. It owns and markets the famous brands of Calvin Klein and Tommy Hilfiger. It has a diverse set of products of clothing, accessories and footwear including shirts, neckwear, sportswear, jeanswear, intimate apparel, swim products and handbags, etc. It owns the heritage brands Van Heusen, IZOD, Bass, Arrow, etc. It has retail operations in North America, Europe, Asia and South America (e.g., Brazil). All the segments have licensing collaboration with domestic and foreign parties to manufacture and wholesale specific brand products. Its major outsourcing destinations are Brazil, China, Bangladesh, India, and Vietnam, etc. Globally, PVH is outsourcing from 2430 factories around the world. Only 40 of those are in U.S. (PVH, 2015). It has a total of 34,100 employees (February 1, 2015) including 16,500 part-time employees (Mergent, 2017). PVH's net income amounted to approximately 500 million USD, whereas their total revenue reached to 8 billion USD in 2016 (Figure 2). Among the U.S. apparel manufacturing companies, PVH stands the third regarding total revenue in 2016 (Table 8).

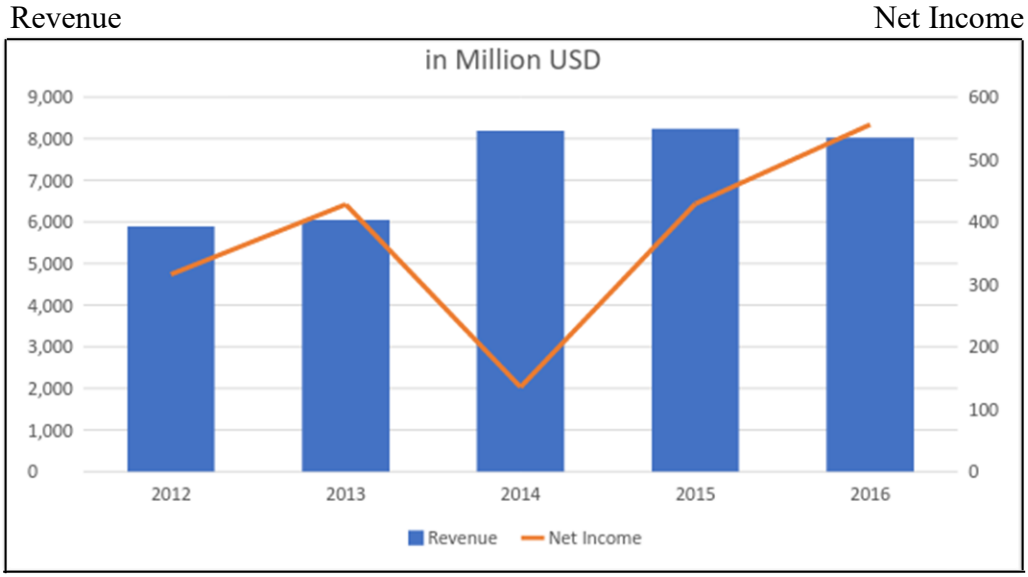

Figure 2. PVH's revenue vs net income (2012-2016) (Mergent, 2017)

Table 8

Top five U.S. apparel manufacturing brands (Hampton, 2017)

U.S. Rank	Company	Sales (Million USD)	Employees	Gross Profit Margin	Head-quarter
1	NIKE, Inc.	32,376	70,700	45.39%	Beaverton, OR
2	V.F. Corporation	12,376	69,000	48.45%	Greensboro NC
3	PVH Corp.	8,020	34,200	52.45%	New York, NY
4	RALPH LAUREN CORPORATION	7,405	26,000	55.27%	New York, NY
5	Hanesbrands Inc.	5,731	67,800	37.76%	Winston Salem, NC

PVH's Role in Bangladeshi Apparel Manufacturing Industry

From the interview, it is known that PVH started outsourcing its apparel products from Bangladesh in 1997. Currently it is operating a local office in Dhaka, capital city of Bangladesh. The office is known as the PVH Far East Limited. Most of the employees

are Bangladeshi. Core responsibility of the Dhaka office is to execute sourcing operation. It has a raw material division to approve trims and fabric locally, a tech division to supervise technical aspect of apparel, a washing division to approve washing panels of garment, and a corporate responsibility division. These divisions are mostly run by Bangladeshi textile and apparel professionals. The corporate responsibility division takes care of the compliance and sustainability issues in the suppliers' manufacturing activity. Almost all brand products are manufactured through PVH local office in Bangladesh. For example, they include Calvin Klein, Calvin Klein Jeans, IZOD, Van Huesen, Arrow, and BASS.

The office is documented as a regional hub office in the South Asian manufacturing region including Sri Lanka, India, and Pakistan. There are around 18 apparel suppliers working through this office in Dhaka, Bangladesh. Some suppliers are located in Chittagong, the country's second largest city and a major seaport city. Bangladesh is one of the largest suppliers for PVH. In 2015 and 2016, nearly 42% and 36% respectively of total apparel of PVH is outsourced from Bangladesh. The outsourced products were woven shirts (80%), woven bottoms (10%) and sweaters & knitwears (10%).

PVH is working on the "free on board" (FOB) package in Bangladesh. The FOB package works as follows: Initially, it gets sales target from all of the brands, and then they check whether the suppliers can meet it. The benefit of the FOB package is that the buyer does not have to bother about fabric price, trim price, yarn price because the buyer gives the supplier a price, a realistic price, and then suppliers do their best to match that

price. They negotiate with their yarn, fabric and trim suppliers and then consult with the buyer. For PVH, yarn, fabric, and trim suppliers are nominated. The product price is mainly dominated by the fabric price.

Bangladesh's Outsourcing Performance Comparison

Supplier evaluation data was collected for Bangladesh along with Vietnamese suppliers. Out of 20 factors, Bangladeshi suppliers have met 11 factors (Capacity, Information Sharing, Negotiability, Customization, Continuous Improvement, Supplier's Selling Price, Internal Cost, Customer Service, Certifications, Feeling of Trust, Country's Political Situation) as buyer's expectations (1.0 or above). On the other hand, Vietnamese suppliers have met 13 factors (Freight Terms, Capacity, Information Sharing, Negotiability, Customization, Internal Cost, Continuous Improvement Programs, Customer Service, Certifications, Feeling of Trust, Country's Political Situation, Currency Exchange Situation, Warranty Policies) as buyer's expectations. In four factor areas (Inventory Availability, Ordering and Invoicing, Percent of On-time Shipment, and Currency Exchange Situation), Bangladeshi suppliers are close (in between 0.75 to 1.0) to the expectations limit. On the other hand, in three factor areas (Inventory Availability, Ordering and Invoicing, Percent of On-time Shipments), Vietnamese suppliers are close to the expectations limit. In two of the factor areas, both Bangladeshi and Vietnamese suppliers have poor (on or below 0.33) performance. Those factors are same for Bangladesh and Vietnam (Geographic Location, and Total Order Lead Time). Three of the factor areas (Freight Terms, Trade Restrictions, and Warranty Policies), Bangladeshi suppliers are in the moderate (around 0.50) level of performance where Vietnamese

Table 9

PVH's buyers' Bangladeshi and Vietnamese supplier evaluation results

Cluster	Cluster Weight (C)	Factors	Factor Weight (K)	Buyer's Desired Value (DV)	Bangla-deshi Supplier Score	Score (V= Bangla-deshi Supplier Score/ DV)	Vietna-mese Suppli-er Score	Score (V= Vietna-mese Supplier Score/ DV)
Delivery (Cd)	0.19	Geographic Location	0.10	3	1	0.33	1	0.33
		Freight Terms	0.20	3	2	0.66	3	1
		Trade Restrictions	0.30	2	4	2	3	1.5
		Total Order Lead Time	0.40	4	1	0.25	1	0.25
Flexibility (Cf)	0.21	Capacity	0.20	2	3	1.5	3	1.5
		Inventory Availability	0.20	4	3	0.75	3	0.75
		Information Sharing	0.20	3	3	1	3	1
		Negotiability	0.20	3	4	1.33	3	1
		Customization	0.20	2	2	1	3	1.5
Cost (Cc)	0.25	Supplier's Selling Price	0.60	2	1	0.5	3	1.5
		Internal Cost	0.30	3	2	0.66	3	1
		Ordering and Invoicing	0.10	4	3	0.75	3	0.75
Quality (Cq)	0.19	Continuous Improvement Programs	0.15	3	4	1.33	4	1.33
		Customer Service	0.15	3	3	1	4	1.33
		Certifications	0.35	3	4	1.33	3	1
		Percent of On-time Shipments	0.35	4	3	0.75	3	0.75
Reliability (Cr)	0.16	Feeling of Trust	0.30	3	3	1	3	1
		Country's Political Situation	0.30	3	3	1	4	1.33
		Currency Exchange Situation	0.20	4	3	0.75	4	1
		Warranty Policies	0.20	3	2	0.66	3	1

suppliers have moderate level of performance in two factor areas (Trade Restrictions and Supplier's Selling Price). Trade restriction, Supplier's Selling Price, and Internal Cost have a negative impact on the final evaluation score. Therefore, these factors' reciprocal values are considered in the above analysis. From the data in Table 9, the cluster scores for Bangladeshi suppliers are computed in table 10.

Table 10

Cluster scores calculations for Bangladeshi suppliers

Clusters	Calculations
Delivery score	= Cd[(Kgl*Vgl) + (Kft*Vft) - (Ktr*Vtr) + (Ktolt*Vtolt)]
	= 0.19[(0.1*0.33) +(0.2*0.66) - (0.3*2.0) + (0.4*0.25)]
	= -0.063
Flexibility score	= Cf[(Kc*Vc) + (Kia*Via) + (Kis*Vis) + (Kn*Vn) + (Kc*Vc)]
	= 0.21[(0.2*1.5) +(0.2*0.75) +(0.2*1) +(0.2*1.33) +(0.2*1)]
	= 0.234
Cost score	= Cc[(Kssp*Vssp) + (Kic*Vic) – (Koi*Voi)]
	= 0.25[(0.6*0.5) + (0.3*0.66) - (0.1*0.75)]
	= 0.106
Quality score	= Cq[(Kcip*Vcip) + (Kcs*Vcs) + (Kc*Vc) + (Kos*Vos)]
	= 0.19[(0.15*1.33) + (0.15*1) +(0.35*1.33) +(0.35*0.75)]
	= 0.204
Reliability score	= Cr[(Kft*Vft) + (Kcps*Vcps) + (Kces*Vces) + (Kwp*Vwp)]
	= 0.16[(0.3*1) +(0.3*1) +(0.2*0.75) +(0.2*0.66)]
	= 0.141

Therefore, Total Bangladeshi supplier score = delivery score + flexibility score + quality score + reliability score - cost score = -0.063+ 0.234+0.204 +0.141 -0.106= 0.410 From the data in Table 9, the cluster scores for Vietnamese suppliers are computed in table 11.

Table 11

Cluster scores calculations for Vietnamese suppliers

Clusters	Calculations
Delivery score	= Cd[(Kgl*Vgl) + (Kft*Vft) - (Ktr*Vtr) + (Ktolt*Vtolt)]
	= 0.19[(0.1*0.33) +(0.2*1.0) - (0.3*1.5) + (0.4*0.25)]
	= -0.022
Flexibility	= Cf[(Kc*Vc) + (Kia*Via) + (Kis*Vis) + (Kn*Vn) + (Kc*Vc)]
score	= 0.21[(0.2*1.5) +(0.2*0.75) +(0.2*1.0) +(0.2*1.0) +(0.2*1.5)]
	= 0.242
Cost score	= Cc[(Kssp*Vssp) + (Kic*Vic) – (Koi*Voi)]
	= 0.25[(0.6*1.5) + (0.3*1.0) - (0.1*0.75)]
	= 0.281
Quality score	= Cq[(Kcip*Vcip) + (Kcs*Vcs) + (Kc*Vc) + (Kos*Vos)]
	= 0.19[(0.15*1.33) + (0.15*1.33) +(0.35*1) +(0.35*0.75)]
	= 0.192
Reliability	= Cr[(Kft*Vft) + (Kcps*Vcps) + (Kces*Vces) + (Kwp*Vwp)]
score	= 0.16[(0.3*1) +(0.3*1.33) +(0.2*1) +(0.2*1)]
	= 0.176

Therefore, Total Vietnamese supplier score = delivery score + flexibility score + quality score + reliability score - cost score = -0.022 +0.242 +0.192 +0.176 -0.281 = 0.307

The data show that, in the cost cluster, Bangladesh has a greater advantage than Vietnam. In addition, Bangladesh is more advanced in the quality cluster than Vietnam. In the rest of the three clusters, Vietnam has marginal advancement compared with Bangladesh. Currently, Vietnam has almost double the amount of exports to the U.S. than Bangladesh in terms of U.S. dollars and their business growth rate is higher than Bangladesh. As referenced, in Gary Teng and Jaramillo's (2005) case study, they reported that suppliers from Mexico and China got 0.347 and 0.448 scores respectively.

Viewpoints of U.S. Fashion Product Buyers Regarding their Outsourcing from Bangladesh

Key supplier performances: Delivery.

Geographic location. In terms of the seaway distance from various sourcing locations to the U.S., Bangladesh has one of the longest distances to the U.S. (Table 12). PVH local office's personnel consider the geographical location of Bangladesh as an obstacle. Typical transit time from Bangladesh to the U.S. is 35 to 40 days. But PVH's lead time model is allowing 45 days of transit period for Bangladesh. Therefore, the lead time for transit is manageable.

There are two major issues regarding a long geographic distance of Bangladesh. One is the lack of acquaintance among the working teams (Campbell, 1988; Espinosa et al., 2007) and another is the difficulty to supervise suppliers' activity and output (Dibbern

et al., 2008; Ellram et al., 2008; Gray et al., 2011; Stratman, 2008). PVH has their own local office in the Dhaka, the capital city of Bangladesh, where 98% employees are Bangladeshi who can resolve the acquaintance issue and supervise suppliers' activity and output directly. PVH also have Bangladeshi employees in PVH New York Headquarters.

Table 12

Seaway distance from the U.S. to several outsourcing destinations (Sea, n.d.)

Geographic Location	From (Sea Port) - To (Sea Port)	Sea Distance (Nautical Miles)
South Asia	Bangladesh (Chittagong)-New Jersey (U.S.-East Coast)	9,858
	Bangladesh (Chittagong)-Los Angeles (U.S.-West Coast)	9,186
South Asia	India (Mumbai)-New Jersey (U.S.-East Coast)	8,165
East Asia	China (Guangzhou)-Los Angeles (U.S.-West Coast)	6,446
Middle East	Turkey (Istanbul)-New Jersey (U.S.-East Coast)	5,006
Central America	El Salvador (La Union)- New Jersey (U.S.-East Coast)	2,752

Freight terms. The buyer has a concern regarding port facilities. Buyer 1 states that, there is only one major sea port which is 246 kilometers away from the capital city Dhaka. If port facilities fail somehow, there will be huge pressure to the whole economy of Bangladesh. Transportation from manufacturing facilities to the sea port has some restrictions. Most the manufacturing facilities are situated around the capital city Dhaka.

Shipping truck service movement through the city area is allowed only from 10 pm to 6 am. Clearing and forwarding activities at the port are sometimes slow because it is not fully digitalized. In addition, the labor union in the port sometimes strikes which makes the process slow. Therefore, these factors make freight terms inefficient.

Trade restrictions. PVH buyers are concerned with the tariff. As Bangladeshi products are not getting the quota to be entered into U.S., they have to pay high taxes at the U.S. border. Buyer 1 says, "Duty is very high. This is a reason that U.S. companies are now moving towards African duty free countries. They are getting better benefits in terms of price. However, we do not think this tariff rate will go higher. Bangladesh government is working with the U.S. government. We do not know what will happen in near future. If the rate goes down, we will get more benefit." Cancellation of Generalized System of Privilege (GSP) for Bangladesh put a negative impact in the Ready-Made Garments (RMG) industry. Buyer 2 says, "We had GSP cancellation few years back. It certainly affects our business in a negative way. Likewise, we are getting negative perceptions about Bangladeshi industry. So, we think it is a barrier for expansion of Bangladeshi RMG sector."

On January 1, 2005, Bangladesh's tariff free facility under the Multi-Fiber Arrangement (MFA) to the U.S. market ended. After that, the huge amount of tariff schedule impacted Bangladeshi apparel export to the U.S. at that time. From Figure 3, it is observed that, from 2005 to 2007, Bangladesh's export growth rate to the U.S. decreased. But the industry maintained an overall average growth rate of 6.77% during 2002-2016. At the same time, African countries including Ethiopia have been getting

tariff free export facility under the African Growth & Opportunity Act (AGOA) to the U.S. This increases their export to the U.S. They have obtained an average growth rate of 44.59% on apparel export (OTEXA, 2017). PVH has already started sourcing from Ethiopia, and it is encouraging its Bangladeshi suppliers to invest in Ethiopia for its own purpose.

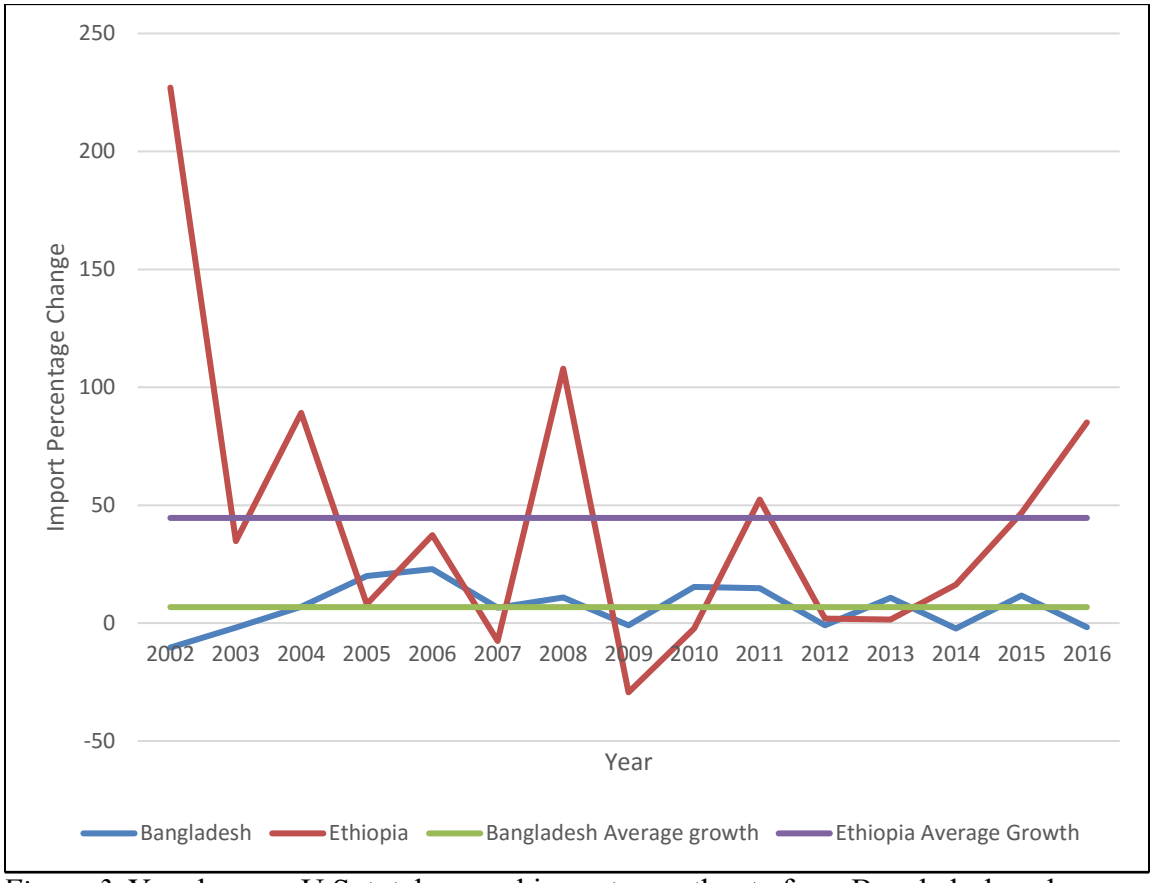

Figure 3. Year by year U.S. total apparel import growth rate from Bangladesh and Ethiopia (2002-2016)

Total order lead time. PVH's required lead time for Bangladeshi apparel industry is 100 to 120 days which is quite enough to execute the order. Compared to China (only 30 days), India and Pakistan (45 - 60 days), this duration is very long (Nuruzzaman,

2008). Therefore, buyer's evaluation (0.25) for this factor is "poor." But PVH considers geographic distance, insufficient backward linkage industry, and other problems of Bangladesh and allows long lead time. Most of the suppliers are not struggling to maintain this quite long lead time.

In general, buyers would like to have their products as soon as possible. For Bangladesh, such a long lead time is caused by lack of sufficient backward linkage industry (Habib, 2009).

PVH is giving a good volume of orders to the vendors considering suppliers' priorities and capacities. Under a regular situation, there is no problem to maintain the schedule. Only when unexpected situations like political instability or labor unrest may shut downs the factory for one or two weeks, the lead time issue comes to the picture. Otherwise, the lead time that the vendors are getting causes no problem.

Key supplier performances: Flexibility.

Capacity. Bangladeshi suppliers' apparel manufacturing capacity of productivity is increasing day by day. As PVH has been doing business in Bangladesh for 20 years, it is implementing its effort to increase the suppliers' productivity. According to their corporate responsibility report in 2015, they took their program to the next level with three key initiatives: strengthening their supplier partnerships, driving operational excellence, and moving beyond compliance by enhancing their remediation and capacity-building (PVH, 2016a). They have a formal continuous improvement program, for quality and capacity improvement, named as "Good Manufacturing Practice" in their authorized production units. The program evaluates the performance target and develops

the management system in the suppliers' units (PVH, 2016b). PVH buyers are straightforward regarding their capacity issue. Buyer 2 says "PVH is doing large volume business with whoever is the supplier. That is one feature of PVH; volume is always higher. So, suppliers must have to have sufficient capacity. So, we do business with those who have that capacity."

Table 13 shows PVH's business for 2012-2016 in Bangladesh. Total quantity and value of business has been increased year by year; their business has almost doubled during the last five years.

Table 13

PVH's business for the year 2012-2016 in Bangladesh

Year	Total Quantity of Business (million pieces)	Total Value of Business (million USD)	Business Growth rate
2012	119.77	$808.03	N/A
2013	152.63	$1,154.47	42.87%
2014	256.92	$1,790.75	55.11%
2015	277.09	$1,941.50	8.42%
2016	277.82	$1,902.86	-1.99%

Inventory availability. As PVH is working on large volume business with large volume manufacturers, their suppliers have an available inventory of fabric. PVH has a program named "Core Replenishment (CR)", whereby the supplier must keep a safety stock of common category fabrics. If any new quantity requirement of a previous design arises from the buyer's side, the supplier has to produce and supply the product within 30

days. The program is limited to regular and less complicated design products. Inventory availability is related to the backward linkage industry and Bangladesh has moderate support in this regard. Buyer 3 says, “Bangladesh is not backed up 100% in backward linkage industry. 40 to 50% of the fabric is supplied from Bangladesh. Trim manufacturing is increasing. Currently, it is 30-40%, but it will be 70% within few years.”

Not having fully covered backward linkage industry restricts the suppliers to have a flexible inventory level. Also, it limits designing capability, which binds them to produce low and medium end products or commonly designed products within a short period of time (Table 14).

Table 14

PVH’s product order percentage for Bangladeshi supplier in 2017

Product category level	Total order percentage
High end	10%
Medium end	40%
Low end	50%

Information sharing. PVH has their own online communication system called Work-in-Progress (WIP). All the responsible persons from their headquarters, local office and vendor have access to it. In addition, suppliers are regularly updating their production status in the system. When the shipment is done, their updating is done. Therefore, PVH

and its suppliers are utilizing the Electronic Data Interchange (EDI) technology to quicken their supply process.

Negotiability. PVH has been doing business in Bangladesh since 1997 and it has developed good relationship with its partners. In apparel outsourcing, price negotiation is a big part of the process. PVH's suppliers are working on "Free-on-Board" (FOB) manufacturing package. Most of the pricing components are fixed here. The main areas for negotiation are fabric price and Cost of Making. Since the consumption of fabric is variable, fabric price is not fixed and there is some scope of negotiation. Sometimes negotiation is done on the supplier's quoted price of fabric.

There is a basic Cost of Making (CM) price for apparel production. For example, for short sleeve basic shirt, PVH's CM is fixed and for long sleeve basic shirt, there is another fixed basic CM. If there is any additional design to the product, a supplier asks for additional CM. A buyer negotiates with the supplier on that part. The negotiation goes smoothly as long as both parties have a long-term relationship and understanding.

Customization. The buyers show their satisfaction regarding customization of product. PVH has some specific Bangladeshi suppliers who can do the high-end products, and what buyers need. The specific suppliers are capable to give buyers quality or customized products. However, PVH does not place a higher percentage of orders that require customization.

Key supplier performances: Cost.

Supplier's selling price. Bangladesh has advantage of low labor cost compared to other major apparel manufacturing countries. It was the main reason for the development

of the apparel industry in Bangladesh. Bangladeshi suppliers are offering very competitive selling price where the Cost of Making or labor cost is very low compared to the competing outsourcing countries (Figure 4). All the buyers showed their full satisfaction on selling price offered by the suppliers. Table 15 shows suppliers' selling

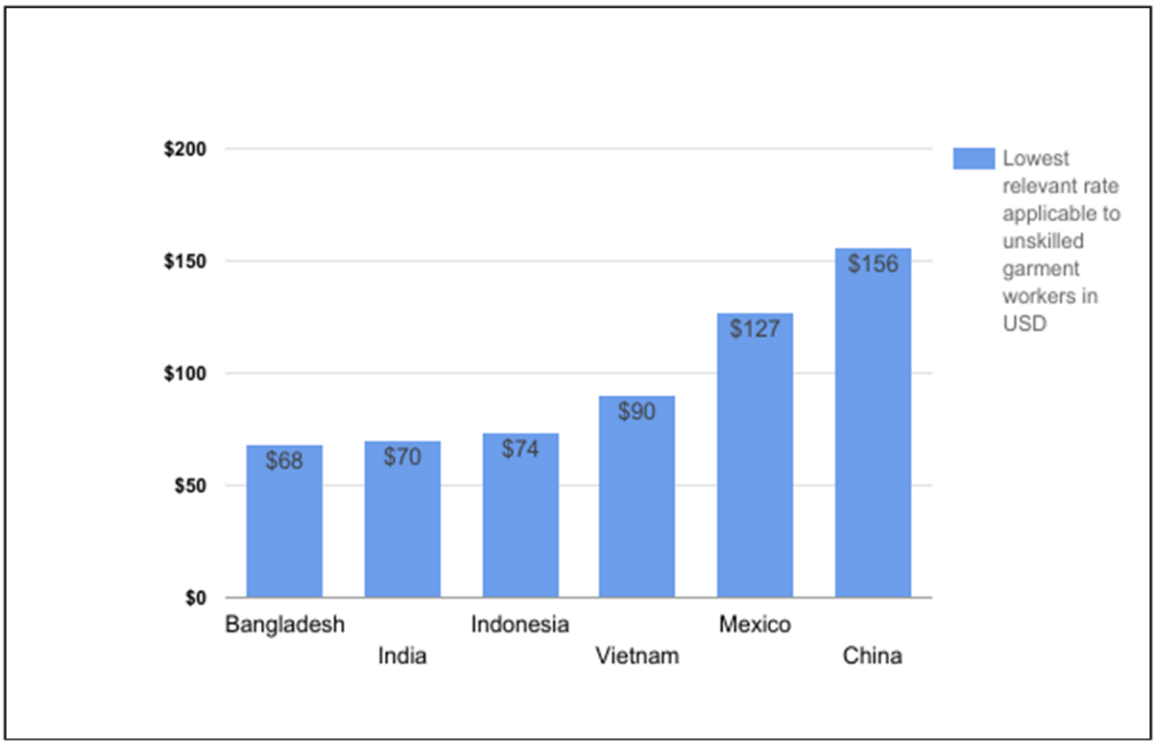

Figure 4. Monthly minimum wage of the unskilled garment worker for the top six apparel-exporting countries to the U.S. (Luebker, 2014)

Table 15

Suppliers' selling price ranges

Product category level	Selling price (USD)
High end	15.0 - 30.0
Medium end	7.0 - 15.0
Low end	4.5 - 7.0

price ranges based on data collected from the buyer interviewees.

From the cost breakdown of PVH's sample high, medium, and low end products (Table 16), it is seen that the cost of fabric is the most significant (37% to 59% of the total FOB price) based on data collected from the buyer interviewees. Reduction in fabric price is supposed to reduce the total suppliers' selling price. But Buyer 1 thinks that the fabric price is more or less same whether it is imported from China or sourced from Bangladeshi factories. Moreover, Chinese fabric is cheaper than Bangladeshi fabric as China has strong backward linkage industry that keeps the price lower. After adding the shipping cost of fabric from China to Bangladesh, total fabric price gets more or less equal to Bangladeshi fabric price.

Table 16

Cost breakdown of high, medium, and low end products of PVH

Product category level	Total fabric cost	Total fabric cost %	Trims cost	Trims cost %	Cost of Making (CM)	Cost of Making %	Wash cost	Wash cost %	Total FOB price
High end men's jacket	$7.33	37.06	$7.10	35.89	$4.80	24.26	$0.55	2.78	$19.78
Medium end (men's woven bottoms)	$6.46	59.42	$2.36	21.69	$1.70	15.63	$0.35	3.22	$10.88
Low end (men's woven tops)	$2.93	57.58	$0.77	15.13	$1.39	27.31	N/A	N/A	$5.09

Internal cost. Transportation cost has been fixed for many years. Sea transportation is higher compared to others competitive countries (Table 17). The table shows rate for 20 feet container shipping $250,000 valued apparel products from

Table 17

Shipping rate for top 6 apparel exporters to the U.S. (Freight, 2017)

Country and sea port	Shipping Rates, US$
Mexico, Mazatlan	$257 - $284
Bangladesh, Chittagong	$1,750 - $1,934
China, Shantou	$963 - $1,064
India, Mumbai	$1,739 - $1,922
Vietnam, Saigon	$1,992 - $2,202
Indonesia, Jakarta	$1,738 - $1,921

different ports to Los Angeles port, U.S. (Freight, 2017).

According to the Buyer 2 and Buyer 3, tariff rate is the most significant factor among the internal costs. As Bangladesh is not getting tariff free rate at the U.S. border (Table 18), they are lagging behind other African countries like Ethiopia. If the tariff rate is reduced, the total internal cost would get reduced more.

Table 18

Tariff rate for top apparel suppliers to the U.S. (USITC, 2017), (AGOA, 2017)

Harmonized Tariff Schedule (HTS) code (10-digit level)		62011340	62034245.11	62033210	62052020.03	61102010	61099010	61091000
Product category Description		Men's or boys' overcoats, carcoats, capes, cloaks, anoraks, windbreakers and similar articles, carcoats, capes, Woven Polyester	Men's or boys' suits, ensembles, suit-type jackets, blazers, trousers, bib and brace overalls, breeches and shorts: Denim Jeans Woven Cotton	Men's or boys' suits, ensembles, suit-type jackets, blazers, trousers, bib and brace overalls, breeches and shorts: Woven 36% =<flax & cotton	Men's or Boy's Dress Shirts Woven Cotton/ CVC	Sweaters, pullovers, sweatshirts, waistcoats (vests) and similar articles, knitted or crocheted: 36% =<flax & cotton	T-shirts, singlets, tank tops and similar garments: knitted or crocheted man-made fibers	T-shirts, singlets, tank tops and similar garments, knitted or crocheted cotton
Countries	Bangladesh	27.7%	16.6%	2.8%	19.7%	5%	32%	16.5%
	China	27.7%	16.6%	2.8%	19.7%	5%	32%	16.5%
	India	27.7%	16.6%	2.8%	19.7%	5%	32%	16.5%
	Indonesia	27.7%	16.6%	2.8%	19.7%	5%	32%	16.5%
	Vietnam	27.7%	16.6%	2.8%	19.7%	5%	32%	16.5%
	Mexico	Free	Free	Free	Free	Free	Free	Free
	African Countries under AGOA	Free	16.6%	Free	Free	Free	Free	Free

Cost of doing business (Table 19) in Dhaka, Bangladesh is relatively cheap compared to major business hubs in Asia (JETRO, 2010).

Table 19

Cost of doing business in (top 5 Asian apparel exporters to the U.S.) major apparel business hubs in Asia

City, Country	Legal Minimum wage (USD)	Employers' Social Security Burden ratio* (%)	Office Rent (Monthly, Per Sq. KM) (USD)	Housing Rent for Foreigners (monthly) (USD)	International Call Charge (for 3 Minutes to Japan) (USD)	Diesel Oil Price per Liter (USD)	Corporate Income Tax Rate (%)
Dhaka, Bangladesh	2.5	7.5	14.4	1,810	1.1	0.6	37.5
Guangzhou, China	9.1	34.5	20.5	2,930	3.5	0.9	25.0
Jakarta, Indonesia	8.8	5.0	20.0	2,738	1.8	0.5	25.0
Ho Chi Minh, Vietnam	5.4	21.0	57.0	2,550	0.7	0.8	25.0
Chennai, India	7.0	18.4	14.2	1,754	0.7	0.8	30.0

Note: *Percentage of pension, insurance, etc. against monthly wage

Since other costs regarding waste, defects, plant visit, local office operations are insignificant, the final price can be maintained low compared to the third-party outsourcing. Therefore, buyers' view in internal cost is low. Meanwhile, some factors such as increase in fiber price, increase in Cost of Making (CM) and labor wage influence

suppliers selling price. Subsequently, buyer's retail price is getting effected and buyer's profit margin decreases.

Ordering and invoicing. As it is mentioned before, PVH is now trying to place orders to the supplier through their online system called Work-in-Progress (WIP). It was first implemented in Bangladeshi factories in 2014. It expedites the process better than before.

The official language of the U.S. and Bangladesh are not the same and there is a time zone difference of 11 hours. Using the electronic ordering system reduces human interaction, language barrier, and time zone difference problems. The banking system in Bangladesh is not fully efficient. All the export- and import-related documentation for invoicing is done through paper copy. Some documentation is done through email but the bank still requires a paper copy, which slows the ordering process.

Key supplier performances: Quality.

Continuous improvement programs. PVH has some ongoing quality process program with its Bangladeshi supplier which is called "Good Manufacturing Practice" (GMP). It is a continuous process. Under this process, the buyer's quality team goes to the factory, it checks and estimates everything. Based on that, there will be another re-audit after three, six or twelve months. Upon receiving good a rating, further re-audit will be done after extended period. "Good Manufacturing Practice" is a program that implements lean manufacturing. Lean manufacturing focuses on improving production efficiency, having large economy of scale, reducing cost and waste throughout the process, and improving product quality (Kunz, Karpova, & Garner, 2016).

Regarding technology, PVH does not have any continuous program with Bangladeshi supplier. However, it is trying to implement some new technology in information technology (IT). It will give access to the supplier into the online system so they can download Product Design Manual (PDM) and purchase order package directly.

Customer service. After the product shipment is delivered, sometimes buyers find defects in the products, like mold formation on the apparel surface or failure in product testing, etc. In such case, buyers express their claims to the suppliers and negotiate with suppliers. Buyers get their refunds easily from some suppliers, but with difficulty from others. In addition, suppliers usually give a discount on the FOB price or sometimes make an adjustment on the next purchase order quantity.

Before shipment from order placement, suppliers try to respond to all the inquiries and complaints properly and without any delay. In the global apparel business, suppliers are committed to provide better quality and operation to satisfy the customer. Thus, the suppliers make themselves competitive (Griffiths, James & Kempson, 2000).

Certifications. Currently PVH is requiring "ACCORD" or "ALLIANCE" certificates from its suppliers. These authorities do independent inspection in the factories and provide an inspection report. Based on the report, they make a "Corrective Action Plan" (CAP). PVH was the first U.S. Brand who signed one of these two agreements within three weeks of the "Rana Plaza" factory building collapse which killed over 1000 people in a garment district of Savar near the capital city of Dhaka, Bangladesh. They committed to contribute $2.5 million USD to this program (Pasquarelli, 2013).

PVH requires certification from the Occupational Health and Safety Management System (OHSAS 18001) for its suppliers. It certifies workplace health and safety management. PVH also asks suppliers to be certified with the International Organizations of Standardization's ISO14001 framework to develop Environmental Management System. To prevent the use of hazardous chemicals, PVH has its own guidelines for suppliers.

PVH also operates "Good Manufacturing Practice" (GMP) audit, in which compliance issue is very strict. They monitor all the compliance activity regularly, and the supplier always tries to meet the requirement of the PVH compliance.

PVH is giving a self-fit certificate. Earlier, in the PVH Dhaka office, there was only one person to certify fitting quality of the garments. Now it is certifying fitting technicians in the supplier end. The technicians are now checking self-fitting and sending qualified products to the buyers.

On-time shipments. Although there is inefficiency in the Bangladeshi customs processing, PVH is experiencing above 90% on-time shipment from Bangladesh. Buyer 3 says, "We are very strict in shipment deadline. Our schedule is very important. If supplier fails to meet the deadline, we warn them to ship by air at their own cost". Under any unexpected situation such as political unrest, labor unrest, port strike, shipment may not be done on due time. Bangladesh has a vulnerable political system which allows these kinds of situations. But above 90% on-time shipment of total order quantity is good. According to the supplier evaluation model used in this research, more than 90% on-time shipment falls under the score 3 (high percent of on-time shipment). Previous researchers

have found 85.9% on-time shipment of purchase order (Haque et al., 2011) from a Bangladeshi apparel supplier. In the current research, buyer's desired performance was 4 (very high percent of on-time shipment) for this factor. Although the supplier's performance is low, it is an improvement on percent of on-time shipment compared to the past data.

Key supplier performances: Reliability.

Feeling of trust. In terms of trust issue, PVH is very straightforward. It keeps a long-term relationship with suppliers as long as they follow its terms and conditions. Buyer 1 says, "I am doing business here. With some vendors, we work like 15-20 years. There may have some trust has grown up between PVH and vendors, but still terms and conditions come first." This Buyer gave one example in this regard, "PVH has interest to source from Africa, because of duty free entrance, and thus one or two of our suppliers agreed on investing in Ethiopia, Africa. Some of the suppliers didn't agree on that part. So PVH is not interested to do business with them. Those suppliers had other difficulties and challenges, but this was a strict condition. So, terms and conditions are firm for PVH. Maybe other suppliers don't see future there."

As it is stated earlier, when buyers give importance on speed, quality and cost elements of sourcing, trust issue is overlooked (Borneman, 2005a; Borneman, 2005b). Missing buyer-supplier mutual understanding impacts on future relationships. It may bring the relationship to an end followed by losing market share (Kumar & Samad, 2007). Previous literature suggested that U.S. companies should evaluate their

relationship with suppliers as assets regarding getting the maximum support of suppliers' technical, managerial, or analytical capabilities in the long run (Campbell, 1998).

Country's political situation. Some buyers mentioned political instability of Bangladesh as a threat to outsourcing apparel product from Bangladesh. However, currently the situation is stable.

Bangladesh has long history of internal political instability. The apparel manufacturing industry in Bangladesh has suffered a lot from this. In the case of such instability, transportation management around the country gets disrupted. Bangladesh's main apparel districts are located around the capital city Dhaka, and major parts of the products are shipped at Chittagong Port. In the case of a strike, products cannot be transported to the port from the facilities. Also, manufacturing operation gets halted. For example, in the year 2014, there were 45 days of strikes called by the opposition political parties. Total loss of $154 million occurred in garment industry in that year (Uddin, 2014). But after that year, political unrest has calmed down. It is now in a favorable position that suits economic activities.

Currency exchange situation. In general, currency devaluation favors the buyer's interest. According to Buyer 2, "We do business with our suppliers in the U.S. dollar currency. But the suppliers are giving the salary to their workers in the Bangladeshi Taka currency. When there is inflation, they are getting more Bangladeshi money against one U.S. dollar than previous situation. But they are not giving the more money to the workers. So, the suppliers are getting benefits for the inflation. Suppliers are getting 5-10% more money due to inflation. Therefore, we are asking our suppliers to give that

money back to us. We do not know what will happen in case of deflation. Since we never experienced deflation, we are negotiating this thing with suppliers. We got little benefit. The inflation is not high. For instance, before inflation, we fixed the FOB like five dollars, but after the inflation, the FOB should be less than five dollars, because the factory is giving the salary in Taka." Buyers do not want suppliers to keep inflation money unless suppliers give that to the workers. Therefore, buyers demand that money back from the suppliers.

Warranty policies. There is no formal warranty agreement between parties. When the purchase order is given to a supplier, it works as an informal warranty. As a Buyer 3 says, "Purchase order is actually works for the warranty document for us. If any anomaly happens, we claim that to the supplier. Sometimes, suppliers do not agree on that claim and sometimes agree. This is negotiated between us."

Viewpoints of Bangladeshi Fashion Product Suppliers of Exporting to the U.S.

Key supplier performance: Delivery.

Geographic location. Suppliers do not have any view here.

Freight terms. Supplier 1 says, "Garment industry in Bangladesh is expanding at an exponential rate. So, the pressure on the sea shipment is increasing day by day. We have two seaports. However, main port is in Chittagong. So, all the pressure goes to the one point. So, there are lots of backlogs, which delay the shipment in both cases of import and export. So, it should be extended. Our government has already taken initiative to open a deep-sea port. So, it is a good thing for our business to expand."

Suppliers have their own shipping agents who take care of export documentation, which reduces hassles related to clearing and forwarding. Supplier 2 says, “Freight forwarding does not have massive hindrance. But sometimes, worker's strike, overloaded dockyard or dearth of vessel due to calamities create problems.”

Shipping from manufacturing facilities to sea port is done through road transportation. Very busy and narrow roads make the transportation slower. Most recently, the Dhaka-Chittagong highway was upgraded to double lanes from a single lane. If a shipping deadline is missed, the supplier has to ship the product though air transport which increases trade cost (Russell, 2016).

Trade restrictions. Suppliers have similar views as buyer regarding trade restrictions. Cancellation of GSP facilities for Bangladesh put a negative impact in the RMG industry. Although the GSP for the U.S. market doesn’t include apparel and textiles, its cancellation gives an overall negative idea to the U.S. buyers. Also, the huge amount of tariff for exporting to the U.S. is inevitable. If tariff rate does not decrease, buyers may move to other Tariff-free outsourcing regions.

Total order lead time. Improving lead time basically depends on raw material approval. Likewise, PVH gives nominated suppliers for raw materials outsourcing. Therefore, achieving items from the nominees are quite easy. There is no approval issue, and therefore it reduces the lead time.

Key supplier performance: Flexibility.

Capacity. Respondent suppliers have expressed their interest in increasing productivity. Supplier 2 says, “Productivity increase is a part of the business expansion.

We have a plan to increase our capacity by several times for PVH and we are trying to get approval from one more factory for PVH order."

Inventory availability. PVH's suppliers maintain sufficient fabric inventory. Some suppliers have integrated the backward linkage industry, which provides fabrics to the apparel-manufacturing floor. Supplier 3 states, "All the fabrics are coming from in-house as we have our own in-house facilities except some special fabrics from China and Taiwan." Suppliers who do not have their own facilities outsource the raw material from the PVH-nominated companies. These companies are located both in Bangladesh and abroad. Supplier 1 states, "PVH has their nominated suppliers for raw materials, but sometimes we use our own sources. If the lead time is very short, or the price is very high from the PVH-nominated suppliers, we can ask permission from PVH to use our own sources. Of course, we maintain the quality of the materials from those sources. In that case, we need to take approval from the buyer. Most of international raw material suppliers have their own production facilities or vendor offices in Bangladesh, which are of international quality."

Information sharing. Some of the PVH suppliers have their own information sharing systems, which only allow their internal use. Supplier 2 says, "Actually the ERP system is set all for our internal activity record and ease of operations. Buyers have nothing to do with the ERP. For PVH, we maintain a special progress report called WIP (Work-in-Progress). It serves the basic purpose that an ERP does. The WIP is very critical as opposed to ERP. It is basically an excel file that we are to upload to the website of PVH but there are lots of criteria that have to be maintained."

Negotiability. Supplier 1 showed his frustration regarding negotiation. As the business is mostly buyer driven, suppliers have not many opportunities to bargain (Ahmed, 2009). According to him, buyers are not that lenient about price.

Customization. Most of the suppliers manufacture a small amount of high-end customized products. Supplier 2 states, "We mostly do the low-end products. We do roughly 10% high-end, 35% medium-end and 55% low-end products. Our average price is ranged from $5.5 to $8.5."

Key supplier performance: Cost.

Supplier's selling price. According to Supplier 1, fabric cost is the major part in supplier's FOB. It takes more than half of the price.

Internal cost. This factor falls into buyer's own area of activity. The suppliers have no view here.

Ordering and invoicing. With the use of EDI technology, a supplier gets the order easily. Supplier 1 says, "The order setting is decided in their NY office depending on the performance of sampling and previous orders. Once it is decided, we get informed of the probable order volume, style, color/size breakdown, and few weeks later the official purchase order (PO) is given. The POs are uploaded in the corresponding website and we download it."

Key supplier performance: Quality.

Continuous improvement programs. Suppliers are working hard to maintain PVH's quality. Supplier 3 says, "Whenever we have to buy any raw materials like fabrics or trims, we buy those very carefully. In most cases, we have our own sources. When we

select suppliers for raw materials, we check whether they can maintain PVH quality or not. If they meet all the standards, then we go for them. We are purchasing best quality according to purchasing standards of PVH." Suppliers are also conscious of new technologies. As Supplier 3 says, "In a competitive market, we are concerned about quality. For apparel production, a machine is operated manually. In order to increase productivity of this manual process, updating the process with the most modern machinery is necessary." As Supplier 2 says, "Although we have some new technologies, we are trying to increase productivity to an optimum level." Suppliers have shown their eagerness to participate in the improvement programs which buyers require. They are participating in PVH's training program regarding quality and productivity improvement.

Previous researchers have found performance improvement of Bangladeshi suppliers who adopted lean manufacturing techniques. Various business challenges including high competition, pressure from customer's company, cost reduction, and reduced order drove the companies to acquire lean manufacturing (Ferdousi & Ahmed, 2009).

Customer service. Suppliers always respond on time whenever an issue arises. Supplier 1 says, "We do respond to buyers in a timely manner. Whenever they have concerns regarding product quality, production update, and product design, we promptly give update to them. We have a buyer-driven industry. If we do not give the service in a timely manner, there may be some problems in our future relationship." In a buyer-driven market, suppliers have to follow customers' instructions and provide service as they need. Successful order fulfillment impacts a supplier's future market

share. Use of the EDI technology can process orders more timely, quickly, and accurately (Yeung et. al, 2008). Suppliers express that, their primary services are given through online communication which are officially recorded for the future references.

Certifications. All the suppliers have certifications regarding chemical use, social compliance, etc. Currently, companies are going under intense auditing and "corrective action plan" by ACCORD and ALLIANCE (Appendix E). They are fulfilling the safety requirement. Although there is slow progress, they are improving a lot more than before.

On-time shipments. Supplier 1 states, "When we perceive that the shipment cannot be met within the deadline, we ask for extension from the buyer. If we get extension, we try to cover up all the shipment in due time. Even after the first extension, if we cannot meet the deadline, then we have to ship the goods by air. We bear the cost. That moment is very much horrifying, because we are responsible for the shipment. So, missing deadline is an unwanted situation. PVH gives us a great amount of lead time. So, in most cases, we do not need extension. Therefore, production runs smoothly. But in some emergency, we ask for extension and we try our best to ship the goods on time. Almost 50% or more of the profit margin is lost from our selling price if we ship through air."

Key supplier performance: Reliability.

Feeling of trust. Suppliers have a positive feelings of trust issue. Supplier 3 says, "Definitely we want to build a good relationship with PVH and other customers. Therefore, mutual relationship will take us ahead. So, we look for a good long-term relationship."

Country's political situation. The current political situation is quite nice. Supplier 2 says, "The situation wasn't good three years back. Political unrest and labor unrest were daily issues then. But these are resolved now. Garments workers are getting minimum wages, the government diminished political crisis. Labor unrest is now quite invisible nowadays. Buyers who gave up few years back come back to Bangladeshi apparel industry and re-establish their business."

Supplier 3 expresses his experience in managing an unwanted situation: "In the past, we had some experience in managing labor unrest, fuel shortage, and political unrest issues, etc. When the situation was not good, workers were creating chaos on a regular time basis. They had their demands. Workers Union was creating pressures on us. They were raising some of their demands. We have a great community like Bangladesh Garments Manufacturers and Exporters Association (BGMEA), Bangladesh Knitwear Manufacturers & Exporters Association (BKMEA). We had discussed all these issues with them. Finally, we present our situation to our Prime Minister. Eventually, we managed to send them back to their work. Workers were quite happy because they were getting their minimum wages. They were quite happy now as well as our buyers."

Currency exchange situation. Supplier 2 says, "The currency exchange rate is favorable to Bangladesh. Because of huge difference between Bangladeshi Taka and the U.S. Dollar, Bangladesh is getting good number of orders. Also, the labor cost is very cheap compared to other countries."

Warranty policies. Suppliers express the similar view regarding warranty policies. Traditionally, they do not practice any formal warranty policy with the buyers.

Most of the time, long-term relationship, and feeling of trust help them negotiate any post-shipment issues successfully. Supplier gives discount on FOB value or increase on next order quantity.

Chapter 5: Conclusion

Key Findings

In this study, the U.S. fashion brand's outsourcing practice from Bangladesh was investigated. In the first phase of the study, Bangladeshi suppliers' apparel outsourcing performance was identified and compared with Vietnam using the supplier evaluation model to answer the first research question. In the next phase, the views of buyers and suppliers on outsourcing from Bangladesh were investigated and analyzed to answer the second and third research questions. Finally, the ways of improvement to make the future U.S.-Bangladesh fashion business sustainable were explored to answer the final research question. The evaluation model showed that Bangladeshi apparel suppliers have a competitive position for exporting apparel products to the U.S., and they have advanced in cost and quality than Vietnamese suppliers. However, buyers showed their concerns in geographic location, trade restrictions, country's political situation, warranty policies, and currency exchange situations. For some factors such as customization, total order lead time, certification, suppliers were not fully efficient, but buyers were satisfied with some progress in those factors. Buyers and suppliers are running training and improvement programs, which increases suppliers' capability and performance. For other factors such as feeling of trust and capacity, buyers were very straightforward to their standards. For some factors such as capacity, inventory availability, supplier's selling price, negotiability, buyers were satisfied with the performance of suppliers. From the suppliers' points of view, they have similar opinions to buyers for the factors of freight terms, trade restrictions, capacity, customization, continuous improvement programs,

certification, and country's political situation. Suppliers were willing to upgrade their standards to buyers' requirements. But suppliers were dissatisfied with the factors of trade restriction, negotiability, and on-time shipment.

Improvement Needed to Make the Future U.S.-Bangladesh Fashion Business Sustainable

Delivery. As buyers like PVH set up their own office in Bangladesh, Bangladeshi suppliers can also do the same thing by setting up their offices in the U.S. to reach small and medium size U.S. brands. Bangladeshi Big suppliers can invest in this area. However, in terms of geographic distance, it is sometimes difficult for small and medium size buyers and suppliers to overcome the obstacle to reach the buyers or suppliers directly.

The Bangladeshi government has plans to improve the port facilities. Chittagong Sea Port is the principal sea port of Bangladesh as it handles 92% of the total imports and exports of the country. Bangladeshi government is trying to increase its standard to the international level through development programs (MOF, 2016). Using another port named Mongla Port would alleviate the load concentrated on the principal sea port. The delivery would be more efficient after completing the Padma Bridge on the Padma river, establishing gas and power supply and building the Khulna-Mongla Railway line, Khan Jahan Ali airport, and special economic zone. These are supposed to be completed by 2018-2020. This will surely open a huge opportunity to the Ready-Made Garment (RMG) sector of Bangladesh as Dhaka-based industry can expedite its import and export activity through this port (MOF, 2016). Also, a deep-sea port, named Payra Port at Chittagong is

being established, which will be in full operation within a few years (MOF, 2016). So, it is expected that the port congestion will be reduced by a huge scale by then.

Governments should work closely to overcome trade restrictions. Huge amounts of tariffs (Table 18) block the opportunity to reach diversified buyers in the U.S. The Bangladeshi government also can give a subsidy to the manufacturers in Bangladesh to reduce the trade barrier.

In Bangladesh, there exists a huge lead time which has placed the industry in a backward position. This huge lead time can be reduced by nominating a supplier's own backward linkage by its buyer because the supplier will not require any further approval and sourcing time of raw material will be reduced.

Flexibility. According to the Bangladesh Textile Mills Association (BTMA), there are 308 listed spinning mills, 257 listed weaving mills, 177 listed dyeing-printing-finishing mills (BTMA, 2016) which are partially supporting 4,363 garment manufacturing mills (BGMEA, 2016b). Primary textile facilities in Bangladesh are providing 85-90% knit fabrics and 40% woven fabrics to export oriented knit and woven RMG sector (BTMA, 2016). So, the Bangladeshi apparel industry has large manufacturing capacity and moderate textile manufacturing capacity. Activities, such as "Good Manufacturing Practice" (GMP), are helping the manufacturers to improve their existing apparel manufacturing capacity. But limited textile manufacturing capacity provides less opportunity for having sufficient raw material inventory availability. Previous research has suggested to increase the backward linkage industry. The Bangladeshi government should make it easier for the investors to acquire land and

capital so as to establish textile units. As the woven industry needs more capital to establish textile units, foreign investment needs to be encouraged by the Bangladeshi government. There should be governmental support to upgrade textile productivity by implementing modern techniques in the existing capacity (Rahman, Bhattacharya & Moazzem, 2007; Habib, 2009).

Bangladeshi suppliers are improving themselves in the case of communication. They are increasing their capability to handle EDI. The use of EDI reduces the face-to-face communication problem and time zone differences. Therefore, it is reducing the problem associated with large geographic distance.

The Bangladeshi apparel manufacturing industry is buyer-driven. In other words, the buyer's negotiation power is stronger than the supplier's. This type of industry where the suppliers are fulfilling most of the buyers' requirements without any delay, thereby providing prompt customer service is favorable to the U.S. buyers. But in the long run, this may create problems for the Bangladeshi suppliers. With less negotiation power, the suppliers cannot keep the buyers long-term since the buyers may switch anytime to another buyer-driven outsourcing destination if they do not get all of their requirements fulfilled from the current outsourcing location. Suppliers should have internal collaboration among themselves to improve their bargaining power. National-level suppliers' organizations, such as "Bangladesh Garments Manufacturers & Exporters Association" (BGMEA) and "Bangladesh Knitwear Manufacturers & Exporters Association" (BKMEA) should contribute in this aspect (Nuruzzaman, 2008). It will bring the business in a balanced and sustainable stage.

Bangladeshi suppliers have limited customizability, which forces the industry to manufacture low and medium end products mostly. Buyers should run more continuous improvement program with their suppliers regarding capacity along with customization, so that the suppliers will get adapted with manufacturing high-end customizable product.

Cost. Bangladesh is pretty favorable regarding cost cluster which includes supplier's selling price, internal cost, and ordering & invoicing. However, in the future, rise of labor cost combining high tariffs may degrade this favorability. Bangladeshi government level support is needed to increase local textile manufacturing capacity which will give increased amount of input to the apparel manufacturing capacity. Eventually it will reduce dependency of fabric import and selling price (Rahman, Bhattacharya & Moazzem, 2007; Habib, 2009). Bangladeshi government should negotiate with the U.S. government to reduce tariff which will dilute the trade barriers such as tariff (Demidova, Kee & Krishna, 2012).

Quality. Labor unrest used to be a common practice which was the aftermath of disobeying labor standards and labor rights, disallowing trade union activities, keeping working environments unsafe, not enforcing laws, and discarding fair labor practices by the suppliers. The situation is now improving. Suppliers are getting certification for their facilities' safety issues and going under "Corrective Action Plan" (CAP). The U.S. buyers now can easily observe the suppliers' fair labor practice performance in the "ACCORD on Fire and Building Safety in Bangladesh" (ACCORD) and "ALLIANCE for Bangladesh Worker Safety" (ALLIANCE) website.

Due to the long lead time, suppliers are now capable of supplying more than 90% of their products in time. Whoever wants to do business in Bangladesh should consider the backlogs of the industry and offer a convenient lead time until other conditions get improved. Also, Bangladeshi firms are not favorable for fast fashion products which need a shorter lead time. It is moderate for regular fashion products. Therefore, Bangladesh would be an attractive outsourcing destination to the unexplored U.S. regular fashion brands. To meet the buyers' expectation, Bangladeshi suppliers need to improve more in on-time shipment. Reduction of total order lead time by implementing lean manufacturing is needed to increase percent of on-time shipment. This will help suppliers to remain competitive in the global apparel industry (Sultana & Islam, 2013).

Reliability. It was found that the Bangladeshi apparel manufacturing industry is currently reliable regarding trust issues, political situation, currency exchange rates, and warranty. There are a lot of obstacles in this industry including lack of 100% backward linkage industry, high lead time, trade barrier, lack of infrastructural development, and dependence on imported goods (Ahmed, 2009; Habib, 2009). But suppliers are working hard to provide the best quality product to the buyers upon managing all obstacles (Ahmed, 2013; Berg et al., 2011). Bangladeshi industry's increasing productivity is a great sign for this reliability cluster. It would not be possible without the buyer-supplier long-term collaboration. Strengthening mutual trust between both parties can make the partnership sustainable. Both the party and other stakeholders of the industry including governments, labor organizations, and Non-Government Organizations (NGO) should collaborate here to make it more reliable.

Chapter 6: Implications, Limitations and Future Studies

This study is a case study on a company, which is Phillips Van-Heusen (PVH). It is difficult to draw a generalized idea over the total industry based on a company's data and opinions. The sample company is one of the top U.S. apparel manufacturers, and sample suppliers were leading apparel exporters from Bangladesh. Therefore, the current results are applicable for the leading suppliers from Bangladesh and leading buyers from the U.S. Since there were no past evaluation data based on supplier evaluation model for Bangladesh, comparison with previous research was not possible.

This study may have academic and industrial implications. Since there was no case study based on apparel companies connecting to Bangladesh suppliers and the U.S. buyers using supplier evaluation model, this study provides a unique perspective regarding problems and proposed solutions between Bangladesh suppliers and the U.S. buyers. The current results can be used as a milestone for the future research in the fields of outsourcing, supply chain performance in apparel business. As a future study, case studies on separate clusters can be conducted to get more detailed understanding of U.S. fashion brand's outsourcing from Bangladesh.

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Appendix A: Questionnaire for Buyers (PVH)

1. Which responsibilities are maintained by the PVH's Bangladeshi local office?

2. Which brands of PVH are made in Bangladesh?

3. Which sourcing countries are under the regional hub office in Dhaka?

4. What is the number of direct suppliers in Bangladesh you have?

5. What percentages of your total number of the product are outsourced from Bangladesh?

6. What category of products (mention the HS code) are mainly outsourced from Bangladesh?

7. Is Bangladesh the only country where you outsource that specific category of products?

8. Describe your sourcing method in Bangladesh (Full package or Cut-make- trim outsourcing) and why you have chosen this method?

9. How the suppliers source the raw materials to manufacture? Is there any specific requirement from buyer?

10. Tell us about backward linkage industries (Yarn, fabric, accessories production facilities) in Bangladesh which support your apparel sourcing.

11. Let us know about PVH's motivations to outsource from Bangladesh? Is geographical location of Bangladesh an obstacle to do business?

12. Describe the shipping terms and condition in Bangladesh. How favorable are they?

13. Describe your experience with the supplier about maintaining Order Lead Time.

14. Tell us about "feeling of trust" in your long-term relationship with your supplier or in

case it depends only on “terms and condition.”

15. Describe the effect of change in currency exchange rate.

16. Describe your order placement procedure.

17. Describe the significant cost that effects selling price.

18. How much significant is the cost except product cost for sourcing from Bangladesh?

19. Describe your assessment of sustainability aspects among your suppliers. Are Bangladeshi suppliers capable enough to maintain U.S. standards (product quality, compliance, etc.)?

20. How do you deal with your suppliers if they violate your compliance code?

21. Is there any continuous improvement program with your supplier regarding quality, compliance, technology, certification, etc.? If yes, please describe.

22. Describe customer service you get from your supplier.

23. What do suppliers do if they fail to ship on time?

24. Describe the supplier’s shipment process for PVH order.

25. Describe supplier’s capability to customize the product according to requirement.

26. Do Bangladeshi suppliers have sufficient capacity to handle the PVH’s demand?

27. Describe your method of communication with the supplier. Do you use integrated (Enterprise Resource Planning) ERP software? If yes, how much integration is there? does supplier have access there?

28. Describe your price negotiation process with Bangladeshi suppliers.

29. Describe Bangladesh’s forward linkage industries (efficient port facility, efficient banking system, facilities to port transportation, clearing and forwarding, etc.) which

support your apparel sourcing.

30. Describe the threats to source apparel product from Bangladesh.

31. Describe the prospect of Bangladeshi apparel industry in U.S. market.

Describe other issues rather than labor cost, that makes Bangladeshi Ready-made Garments (RMG) sector competitive.

32.Please give an example from your experience that shows how you deal problems regarding sourcing related issues in Bangladesh.

33. Is there any difference between US and rest of the world apparel product suppliers in doing business? Like PVH is handling suppliers from all over the world who (supplier) have different set up. So, is there anything particularly special for Bangladeshi suppliers? (It can be cultural, ethical, social, policy, financial, etc.). If any, how do you handle these issues?

Appendix B: Supplementary Questions for Buyers

1. What percentage of your total employees in PVH's local office is Bangladeshi?
2. Please provide last five years' business data for PVH in Bangladesh.
3. How is your inventory requirement for buyer?
4. What percentage of high, medium, and low end products are manufactured for PVH in Bangladesh? What are the price points?
5. What is the percentage of on-time shipment from Bangladesh?

Appendix C: Questionnaire for Suppliers

1.When did you start business with PVH?

2. What is the current volume of production for PVH in your company? (in terms of USD and pieces)

3. What portion of your total export is ordered by PVH?

4. Do you use sub-contractors for PVH's production? If yes, how many sub-contractors? If yes, please describe your sub-contracting procedure. Do they follow buyer's compliance issues?

5. Describe the product category you manufacture for PVH.

6. Do you have business with any other U.S. Buyer?

7. Describe your actions that maintain product quality for PVH standard.

8. How do you source raw material (yarn, fabric) & accessories for PVH's order.

9. Describe how you improve your total order lead time.

10. Describe your adoption of new technology for production.

11. Describe your plan for future capacity or productivity increase.

12. Describe your Compliance related activities required by PVH.

13. How the compliance checking affects apparel productivity in your company?

14. How do you manage the issue of failing to ship on time?

15. Describe your view in port facilities of Bangladesh.

16. Describe any national or international trade policy/restriction, which restricts you from doing more business with U.S. companies.

17. Describe the socio, economic and political situation that affects your production.

18. How does “feeling of trust” play role in doing business with PVH?

19.Describe your experience in managing labor unrest, fuel shortage, political unrest issues, etc. in past.

20. how is your information sharing process with your buyer?

21. How do you get “purchase order” from buyer?

22. Which costs are significant in the FOB price?

23. How favorable is the negotiation process with buyer?

24. Can u give an approximate percentage of high-end, medium-end and low-end product order from PVH? Like which price point products order you get most and which least?

25. How are the obstacles regarding shipping process?

26. Is there any difference between US and rest of the world apparel product buyer in doing business? Like Bangladeshi suppliers are handling buyers from all over the world who (buyers) have different set up. So, is there anything particularly special for US buyers? (It can be cultural, ethical, social, policy, financial, etc.). If any, how do you handle these issues?

27. How much significant is the internal cost for buyer to do business in Bangladesh?

Appendix D: Supplementary Questions for Suppliers

1. How do you give customer service to your buyer?
2. What is the current certification process?
3. How is currency exchange rate?
4. How is your warranty policy with the buyer?

Appendix E: ACCORD 'CAP' Report for Interfab Shirt Manufacturing Ltd. (One of the PVH's Vendor)

18-Jan-2017

STRUCTURAL & BUILDING SAFETY

Bangladesh Accord Remediation Summary of Actions Required

Factory Name & Address	Interfab Shirt Mfg Co Ltd, 302/547 Gacha Union Road, Kunia, KB Bazar, Gazipur, Gazipur, Dhaka
Date of Inspection by Accord	25-Mar-2014
Accord Rating	
Finance Plan Agreed	Yes

Item No	Accord Inspection Observation	Accord Action Plan	Final Action Plan	Final Timeline	Comments from Accord	Accord Timeline	Progress Status
1	Factory Engineer to review design, loads and columns stresses. Verify insitu concrete stresses by 100mm dia. cores from 4 typical internal columns	Factory Engineer to review design, loads and columns stresses. Verify insitu concrete stresses by 100mm dia. cores from 4 typical internal columns	DEA has been approved by Accord. Retrofitting work is going on & almost 60% works done.	15/02/2017		6 Weeks	In Progress
2	Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.	Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.	We have planned to produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity	31/03/2015	Loading plan produced.Post ed on column.During our visit we saw loading condition within allowable limit.	6 Months	Corrected
3	Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.	Consider applying a new waterproofing membrane.	We will provide a new waterproofing membrane at our roof top. We will provide self adhesive,bituminous water proffing membrance. Quatation Collected	31/03/2015	New water proofing membrane already installed.	6 Months	Corrected

Date
18-Jan-2017

FIRE SAFETY

Bangladesh Accord Remediation Summary of Actions Required

Factory Name & Address	Interfab Shirt Mfg Co Ltd, 302/547 Gacha Union Road, Kunia, KB Bazar, Gazipur, Gazipur, Dhaka
Date of Inspection by Accord	3-Apr-2014
Accord Rating	
Finance Plan Agreed	Yes

Item No	Accord Inspection Observation	Accord Action Plan	Final Action Plan	Final Timeline	Comments from Accord	Accord Timeline	Progress Status
1	The exit stairs are not separated from work areas on each floor by fire-rated construction.	Provide minimum 1.5-hr fire rated doors and seal all unprotected openings to separate the exit stairs from work areas and other building spaces on all floor levels. Ensure that the fire doors are self-closing and positive latching and that they are provided with fire exit (panic) hardware where serving production floors. If fire doors are required to be held open for functional reasons, provide automaticclosing devices tied to the fire alarm system.	Already, most of the fire doors have been installed and further. Additional fire doors installation is going on.	30/10/2016	On 28/06/2016: In progress. Installation of fire rated door is going on. On 25/09/16: Still listed fire rated door is missing on some exit stair. Already L/C has been opened for fire door. Shed-2, Exit stair	3 Months	In Progress
2	Egress doors / gates with locking features are provided at building exits, exit stairs, along egress routes, exit discharge all exits.	Remove locking features from all egress doors / gates. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.	We have removed locking features from all egress doors / gates. If locks are required for security reasons we will utilize special door locking features complying with NFPA 101. We need more time to adopt the	30/06/2014	On 23/03/2016: Corrected. On 28/06/2016: Corrected. On 25/09/16:	Immediate	Corrected

3	Collapsible gates / sliding doors are provided at building exits, exit stairs, along egress routes, exit discharge throughout the entire facility.	Replace all gates / sliding doors along the means of egress with side-hinged, swinging egress doors. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.	We will replace all gates / sliding doors along the means of egress with side-hinged, swinging egress doors. If locks are required for security reasons we will utilize special door locking features complying with NFPA	31/03/2015	On 23/03/2016: Corrected. On 28/06/2016: Corrected. On 30-11-2016:	1 months	Corrected
4	The width of egress aisles is less than 36-in along south wall floor 3.	Provide minimum aisle widths of 36-in.	This id for our building Design. However we will provide minimum aisle widths of 36-in.	31/03/2015	On 23/03/2016: Corrected. On 28/06/2016: Corrected. On 25/09/16:	3 Months	Corrected
5	Inspection, testing, and maintenance for the fire alarm system.	Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.	We have started Inspection, testing, and maintenance for the fire alarm system. We are keeping records for this.	31/03/2015	On 23/03/2016: Corrected. On 28/06/2016: Corrected. On 25/09/16:	3 Months	Corrected
6	Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes throughout the factory	Test the emergency lighting system on each floor and provide additional emergency fixtures to provide adequate illumination along the means of egress. Provide a minimum illumination of 10 lux at the floor	After analyzing & testing the emergency lighting system on each floor, additional emergency fixtures have been provided for adequate illumination along the means of egress. We have ensured a	30/12/2015	On 23/03/2016: Corrected. On 28/06/2016: Corrected. On 25/09/16:	3 Months	Corrected
7	Egress doors / gates with locking features are provided at building exits, exit stairs, along egress routes, exit discharge. Both sliding doors and gates are in use. One of these devices can	Remove locking features from all egress doors / gates. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.	We will remove locking features from all egress doors / gates. If locks are required for security reasons we will utilize special door locking features complying with NFPA 101. We are trying an alternative to ensure safety and	31/03/2015	On 23/03/2016: Corrected. On 28/06/2016: Corrected. On 25/09/16:	Immediate	Corrected
8	Exit stairs discharge inside the building. First floor exit discharge on working area of ground floor	Modify stair to discharge directly outside, or provide 2- hr fire-rated exit passageway leading direclty outside	Civil work for modifying exit has been started and continued and fire door has been installed infront of stair.	30/10/2016	On 28/06/2016: In progress. Factory asking	6 Months	Corrected

Date
18-Jan-2017

ELECTRICAL SAFETY

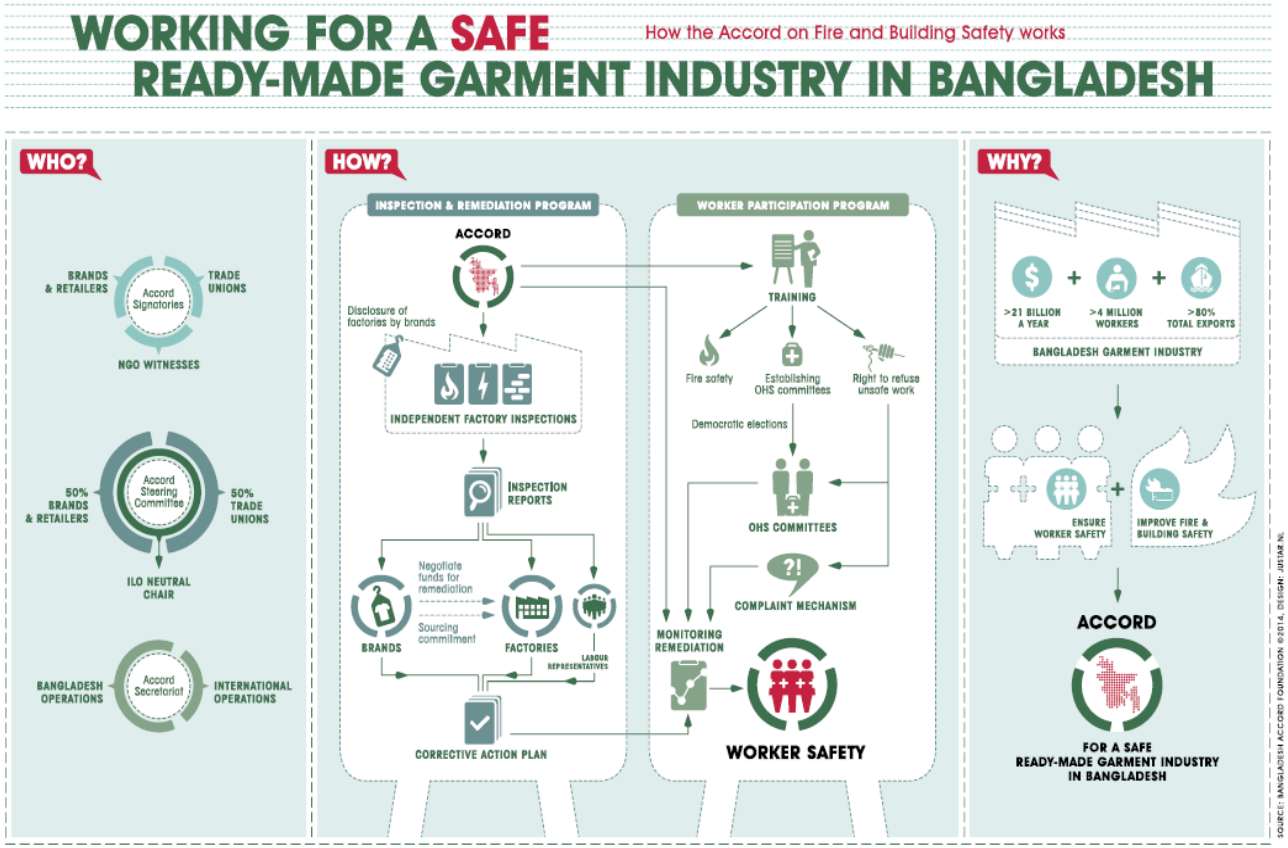
Bangladesh Accord Remediation Summary of Actions Required

Factory Name & Address	Interfab Shirt Mfg Co Ltd, 302/547 Gacha Union Road, Kunia, KB Bazar, Gazipur, Gazipur, Dhaka
Date of Inspection by Accord	23-Mar-2014
Accord Rating	
Finance Plan Agreed	Yes

Item No	Accord Inspection Observation	Accord Action Plan	Final Action Plan	Final Timeline	Comments from Accord	Accord Timeline	Progress Status
1	Cables Installed in shaft taking off at various floor are not supported on cable trays.	All cables should be supported by cable tray	We have provided Cable tray at 100 % of our installation. We will provide cable tray for installtion of cables at every floors.	20/10/2014	Already verified at 1st follow up inspection.	3 Months	Corrected
2	Transformer is placed on floor without any built foundation.	Transformer should have plint foundation built and fixed the base with Nut and bolts	We will communicate REB for solving this problem and will provide a foundation for the tranrformers. As its related to govrment body involvement we need more time for this.	20/10/2014	Already verified at 1st follow up inspection.	3 Months	Corrected
3	Cables entering or exiting Distribution panel are not firmly fixed.	Cables entering panel must be firmly fixed through base plates using cable glands.	We have already refixed the cables of all Distribution panel.	31/12/2014	Already verified at 3rd follow up inspection.	1 Months	Corrected
4	Wires and cables inside distribution panel not arranged and firmly fixed.	Cables and wiring inside panels must be arranged and firmly fixed away to avoid unintendedly touching other parts	Cables and wiring inside panels have been arranged and firmly fixed away to avoid unintendedly touching other parts	20/10/2014	Already verified at 1st follow up inspection.	1 Months	Corrected

5	Transformer oil leakage signs are seen on the transformer.	Leakage must be checked during maintenance and repaird as neccessary.	We have checked the lickage and assured that no oils are leaked.	20/10/2014	Already verified at 1st follow up inspection.	6 Months	Corrected
6	Panel doors are not connected with earth bonding.	Panel doors must be connected with earth bond to prevent electric shock.	We have assured that all the Panels doos and all the electrical appliances are connected with ECC.	20/10/2014	Already verified at 1st follow up inspection.	6 Months	Corrected
7	Conductor colour coding are not followed.	Conductor should be colourcoded to prevent accidents duirng maintenance. PVC boots of required colour may be used.	We have changed most of our ECC wire maintaing color code. We will assure tha conducter color coding are followed.	20/10/2014	Already verified at 1st follow up inspection.	6 Months	Corrected
8	Overhead service cable/line protection not covered.	Service cable/line protection ducts should be covered properly from top to avoid entering rain water and damaging the cable insulation properties.	Service cable/line protection ducts have been covered properly from top to avoid entering rain water and damaging the cable insulation properties.	30/09/2104	Already verified at 1st follow up inspection.	1Months	Corrected
9	Cable trenches are not provided till the panels and transformers.	Trenches should be provided till edge of the panels and transformers.	We will provid Cable treches till edge of the panels and transformers. We have collected quatations and samle for this.	20/10/2014	Already verified at 1st follow up inspection.	6 Months	Corrected
10	Panels room is small and less space for operations & Maintenance.	Panels should be installed in a room with enough space for Operation & Maintenance	We have started assessing the issue. Panels will be installed in a room with enough space for Operation & Maintenance. But	30/09/2014	Already verified at 2nd follow up inspection.	9 Months	Corrected

Appendix F: ACCORD Working Procedure in Bangladesh Infographic



ACCORD
on Fire and Building Safety in Bangladesh

For more information visit www.bangladeshaccord.org or follow @banglaccord on twitter.

Appendix G: IRB Approval for this Thesis

https://leo.research.ohio.edu/secure/leo/IRB/viewApprovalLetter.leo?fo... https://leo.research.ohio.edu/secure/leo/IRB/viewApprovalLetter.leo?fo...

Project Number	16-N-24
Project Status	APPROVED
Committee:	Office of Research Compliance
Compliance Contact:	Rebecca Cale (cale@ohio.edu)
Primary Investigator:	H M Rakib Ul Hasan
Project Title:	Analysis of the U.S. Fashion Brand's Outsourcing from Bangladesh: Problems and Proposed Solutions
Level of Review:	Non Research

If applicable, informed consent (and HIPAA research authorization) must be obtained from subjects or their legally authorized representatives and documented prior to research involvement. In addition, FERPA, PPRA, and other authorizations must be obtained, if needed. The IRB-approved consent form and process must be used. Any changes in the research (e.g., recruitment procedures, advertisements, enrollment numbers, etc.) or informed consent process must be approved by the IRB before they are implemented (except where necessary to eliminate apparent immediate hazards to subjects).

The approval will no longer be in effect on the date listed above as the IRB expiration date. A Periodic Review application must be approved within this interval to avoid expiration of the IRB approval and cessation of all research activities. All records relating to the research (including signed consent forms) must be retained and available for audit for at least three (3) years after the research has ended.

It is the responsibility of all investigators and research staff to promptly report to the Office of Research Compliance / IRB any serious, unexpected and related adverse and potential unanticipated problems involving risks to subjects or others.

This approval is issued under the Ohio University OHRP Federalwide Assurance #00000095. Please feel free to contact the Office of Research Compliance staff contact listed above with any questions or concerns.

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