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Multinational enterprises in labor-intensive GVCs: Examining aspects of productivity, linkage, and control without ownership

PhD thesis

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Declaration

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

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Date: 29 December 2023

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Abstract

Abstract

This thesis examines the multinational enterprises (MNEs) operating within labor-intensive global value chains (GVCs)—a category of MNEs that remains relatively understudied in the international business (IB) literature. While the dominant discourse in IB has traditionally focused on large, hierarchically integrated MNEs with strong firm specific asset (FSA) based advantages and equity-based control mechanisms, this thesis shifts the focus to MNEs that act as either lead or supplier firms within labor-intensive GVCs, particularly, where control is decoupled from ownership. The research addresses conceptual gaps around how these MNEs establish and sustain competitiveness and governance as they operate in GVCs. The thesis draws on and extends FSA theory, classifying FSAs into asset-type FSA (FSA_A), transaction-type FSA (FSA_T), and recombinant type FSA (FSA_R) categories, and investigates how these are deployed by MNEs in low-tech, high-labor contexts. The empirical analysis is based on three papers, each contributing a distinct lens. The first two papers focus on supplier MNEs (SMNEs) operating in Bangladesh's Export Processing Zones (EPZs), using quantitative firm-level data to explore issues of productivity and cost competitiveness relative to domestic supplier firms. The third paper adopts a qualitative case study approach, drawing on interviews and documentary analysis within the Bangladeshi apparel industry beyond EPZs, to examine how lead firms exert control over suppliers in multi-tiered GVCs without equity ownership.

Key findings include the following:

- SMNEs in labor-intensive sectors often possess weak FSA_A, given the limited technological complexity of their operations. However, some SMNEs that successfully leverage FSA_T and / or FSA_R based on the degree of multinatioanlity may outperform domestic rivals in both productivity and cost terms. The thesis contributes to the FSA theory by empirically demonstrating that FSA_T and/or FSA_R may, in certain contexts, overcome the deficiencies in FSA_A, especially, in sectors dominated by low-skilled labor and commodified input materials.

- The thesis also reveals how lead firms in apparel GVCs allow participation of OEM first-tier suppliers firms in a split governance arrangement and still maintain control without ownership along the apparel GVCs.

Overall, the thesis makes both theoretical and empirical contributions to the IB field by expanding the applicability of FSA theory and offering new insights into non-equity governance, and situating Bangladesh as a strategic context for understanding how MNEs operate in labor-intensive sectors. The findings carry implications for managers, policymakers, and scholars interested in the evolving nature of global production, industrial upgrading, and sustainable GVC governance.

Chapter One: Introduction

1.1 Introduction:

This thesis examines the multinational enterprises (MNEs) operating in the labor-intensive global value chains (GVCs). International business (IB) literature is replete with discussions on large and powerful MNEs that operate hierarchically integrated subsidiaries in different countries across the world (Kano et al. 2020). Instead of looking at such integrated MNEs, I take interest in those types of MNEs that have positioned themselves in the GVCs acting as either lead firms or supplier firms in different tiers. Discussions on such types of MNEs operating in the labor-intensive GVCs are still very limited in the extant IB literature. My thesis attempts to fill gaps in our understanding of such types of MNEs that are playing increasingly important roles along the labor-intensive GVCs.

The thesis comprises of three papers where the first two papers focus on the supplier MNEs (SMNEs), and the third paper focuses on the lead MNEs. The first paper examines how SMNEs in the labor-intensive sectors are able to outperform the domestic supplier firms in terms of productivity. The second paper examines how these SMNEs in the labor-intensive sectors remain cost competitive despite creating fewer linkages than the domestic supplier firms. The third paper examines how the lead MNEs along the apparel GVCs maintain workable control without ownership over the suppliers operating in different tiers.

1.2 Theoretical context:

An overarching theme across all the three papers is the role of firm specific asset (FSA). The role of FSA that MNEs possess in remaining competitive in the host markets and / or in the GVCs has been a key topic of discussion in the extant IB literature. Primarily the literature discusses about two types of FSA - a) asset type FSA (FSA_A) and b) transaction type FSA (FSA_T) (Dunning 1988; Cantwell and Narula 2001; Dunning and Lundan 2008). Later, IB scholars have talked about recombinant type FSA (FSA_R) (Verbeke 2009; Hennart 2009). Various theoretical and empirical studies are available in IB literature that discusses how large and powerful MNEs that tend to internalize have been able to remain competitive relying mainly on FSA_A. My main interest in this thesis is not to look

at the role of FSA_A, rather to look at the roles of FSA_T and/or FSA_R in helping the supplier MNEs remain competitive in the host countries or along the GVCs.

The first paper of this thesis examines, in light of FSA theory, whether FSA_T and / or FSA_R can drive superior productivity of the SMNEs operating in the labor-intensive sectors. IB literature suggests that the notion of superior productivity of the MNEs is due to the possession of some FSAs (Hymer 1960 and 1976; Dunning 1973; Caves 1974 and 1996), and according to Madhok (2015), this notion is due to the use of some FSA_A. MNEs that operate in the technology or knowledge-intensive sectors possess FSA_A such as proprietary technology or brand that may drive superior productivity vis-a-vis the domestic firms. What happens to the SMNEs that operate in the labor-intensive sectors where there prevail weaknesses in FSA_A? Can such SMNEs become more productive than the domestic supplier firms by overcoming the deficiencies in FSA_A? In absence of FSA_A, the role of FSA_T / FSA_R in driving superior productivity of SMNEs has not yet been examined. In this paper, I examine this question empirically and show that FSA_T and / or FSA_R can overcome the deficiencies in FSA_A that may prevail among the SMNEs operating in the labor-intensive sectors. Superior productivity of SMNEs may be achieved if some of them are able to generate advantage(s) from FSA_T and / or FSA_R based on the degree of multinationality.

The second paper examines within the same theoretical framework whether SMNEs operating in the labor-intensive sectors can rely on FSA_T and / or FSA_R to remain competitive in the host countries despite creating fewer linkages than the domestic supplier firms. MNEs in technology or knowledge-intensive sectors usually create fewer linkages than the domestic firms due to the requirement of using specialized input materials that are mostly unavailable locally (McAleese and McDonald 1978; Rodriguez - Clare 1996) and such MNEs rely on some FSA_A such as proprietary technology and brand in order to remain competitive in the host countries. There is no discussion in the literature on what happens to the SMNEs that operate in the labor-intensive sectors where specialized input materials are not required and the portfolios of FSAs of those SMNEs reflect weaknesses in FSA_A. In the second paper, I show that FSA_T and / or FSA_R can overcome the deficiencies in FSA_A that may prevail for the SMNEs operating in the labor-intensive sectors. Empirically, we find that SMNEs in the labor-intensive sectors

may remain cost competitive in the host countries despite creating fewer linkages than the domestic supplier firms if some of the SMNEs are able to generate advantage(s) from FSA_T and / or FSA_R based on the degree of multinationality.

The third paper examines, under a split governance arrangement, how the lead firms with the help of FSAs are able to exert workable control without ownership over the entire GVCs. One of the key FSAs of the lead firms stems from the capability of dealing with the suppliers in different tiers along the GVCs (Narula 2019). The traditional IB notion of control with ownership and no effective control without ownership has become obsolete in contemporary times (Alcácer et al. 2016). Scholars more or less agree that absolute control is not possible to achieve, especially, in inter-firm relationships. Not only ownership, but also contracts (Buckley and Casson 2019; Buckley et al. 2023), commitment of technological and managerial resources (Yan and Child 2004), key contributions (Karhunen et al. 2008) and several other factors may affect MNEs' control rights. Strange and Humphrey (2019) identify a few mechanisms such as contracts, direct coordination, embedded coordination, and strategic alliances that the lead firms often use in absence of ownership to maintain workable control in the entire GVCs. Empirically, we find that the lead firms are able to maintain direct control over the first tier supplier firms that they govern with the help of some forms of contracts along with a direct coordination mechanism, and indirect control over the suppliers in the lower tiers that they no longer govern through maintenance of some relational capital in the form of pools of enlisted suppliers in those tiers.

1.3 The empirical context: Story of Bangladesh's economic development

Bangladesh became independent in 1971 with an area of only 147,569 square kilometers and a population of approximately 75 million. The fertility rate of the country's population was almost 5 at that time (Khan 2017: 8) versus the current fertility rate of two (approximately). Total arable land is currently 62.3%, which is equivalent to 7.7 million hectares. More than 80% of the population at that time was living below the poverty line (Dhaka Tribune 2023) and the literacy rate was as low as 18% (Daily Sun 2023). The GDP per capita in 1971 was only USD 128 as per World Bank data. Agricultural sector contributed 55% of Bangladesh's GDP employing almost 80%

of the population (Khan 1972). Contribution of industrial and service sectors to the GDP as well as to the total employment was negligible at that time (The Daily Star 2021). Just after independence, Bangladesh was following the public sector-led import-substituting industrialization strategy, and accordingly, all the large industrial units abandoned by the non-Bangladeshis were nationalized (The Daily Star 2021). The country was hit by a famine in 1974 (New York Times 1974) due to which hundreds of thousands of people died of starvation. Like most of the Asian less developed countries, Bangladesh's economy had been characterized by the abundance of unskilled labor force and a declining / almost stagnant amount of arable land (Alauddin and Tisdell 1995).

Table 1: Bangladesh's GDP per capita, GDP growth, contribution of agriculture, industry and service to GDP / employment since 1971

Year	GDP Growth	Per capita GDP	Share of Agriculture in GDP	Share of Agriculture in employment	Share of Industry in employment	Share of Service in employment
1971	-5.50%	128/-	55%	80%	-	-
1981	7.20%	235/-	33.10%	66%	11%	24%
1991	5.50%	283/-	29.50%	64%	13%	23%
2001	5.10%	410/-	25.00%	58%	11%	31%
2011	6.50%	856/-	19.95%	47%	19%	35%
2021	6.90%	2,458/-	11.63%	38%	22%	41%

Source: World Bank data

One of the major challenges that the newly born country was facing was to ensure employment for the huge amount of surplus labor engaged at that time in the agricultural sector. It is noteworthy that, China during the 1950s adopted the path of industrialization in both rural and urban areas in order to absorb the surplus labor from the agricultural sector. The policy makers did not consider the same path appropriate for Bangladesh as it might have required infrastructure and other investments (Khan 1972). Instead of following the usual path of creating employment opportunities in the

industrial and service sectors, they were exploring a few unconventional alternative paths; such as, - a) creating non-agricultural employment opportunities in the rural areas, b) exporting part of the unskilled surplus labor force to other countries, and c) setting up of labor-intensive industries. First, Grameen Bank model of microcredit program focusing mainly on the rural poor women helped diversify agricultural activities into many non-crop activities. Second, Bangladeshi wage earners in the oil rich Middle Eastern countries later expanded into the Southeast Asian countries such as Malaysia, Singapore, Brunei etc. Third, the government of Bangladesh started attracting investments from the private sector in labor-intensive manufacturing facilities both in the export processing zones (EPZs) as well as in the domestic tariff areas (DTAs) since the late 1970s.

1.3.1 Labor-intensive industrial development in Bangladesh

This labor-intensive export led industrialization drive was primarily aimed at employing the unskilled surplus labor force. Among the many sectors that the country's policymakers experimented with, the export-oriented apparel sector grew massively. Export basket of Bangladesh that was once dominated by the jute and jute related products is now mainly driven by the apparel manufacturing and related textile industry. Over a period of more than five decades since the independence, Bangladesh has now become the 2nd largest exporter of apparel items in the world market just after China (Hamja et al. 2019; The Daily Star 2024). Garment and textile industry's share in total national exports of Bangladesh kept growing from 0.2% in 1980 to 35% in 1990 to 54.8% in 1995 (General Agreement on Tariffs and Trade 1993; World Trade Organization 1996). The share of Bangladesh's apparel exports in total national exports has grown further in the recent years; i.e., 84% in 2024 (The Daily Star 2024). The context of labor-intensive industrialization, especially, in the apparel sector in Bangladesh can be considered as an exemplary success story of growth and employment. Bangladesh's labor-intensive industrialization in both EPZs and domestic tariff area (DTAs) can be a lesson for the other developing countries.

1.3.1.1. Labor-intensive industries in EPZs:

Various export promotion measures were undertaken by the government to attract private investments particularly of foreign origin by making use of the country's cheap labor force. One such measure that eventually became successful was the establishment of Bangladesh Export Processing Zones Authority (BEPZA). The legal framework that created BEPZA and various export processing zones (EPZs) in various parts of Bangladesh comprised of the BEPZA Act No. XXXVI (1980) followed by the Ordinance No. XLIX (1984) and Ordinance LII (1988) (Bhattacharya 1998). The first EPZ was set up in 1983 in Chittagong followed by another EPZ in 1993 in Dhaka. In 1996, a total of 96 firms were in operation while 81 others were in the process of commencing business in the two EPZs in Dhaka and Chittagong, and they brought together cumulative investments to the tune of $ 231.5 million up to 1996. They exported goods and services worth $ 337 million during the year 1995-96, and employed a total of 45,815 local people as of 31 December 1996 (Bhattacharya 1998). Over the years, BEPZA has developed eight EPZs in various locations throughout the country.

The initial two EPZs in Chittagong and Dhaka later expanded to other EPZs in Adamjee (Narayanganj), Ishwardi (Pabna), Mongla (Khulna), Comilla, Nilphamari, and Karnaphuly (Chittagong). In each EPZ, supplier firms are engaged in labor-intensive production of goods and services solely for the purpose of exporting. A total of 464 firms with a mix of supplier MNEs and domestic supplier firms (including joint ventures) operated in 2016 in these 8 EPZs. The operating units are all afforded the same benefits in terms of tax holidays, and are all governed under the same set of labor and environmental laws. Irrespective of the industrial sector, all units operate under a homogenous environment. Almost 73% of the firms were engaged in the production of ready-made garment, garment accessories and textile materials. In 2016, firms in BEPZA administered eight EPZs exported almost USD 6.5 billion worth of goods. Average export amount per firm was USD 17.5 million and average employment level per firm was 1,139. Total value of exports from Bangladesh was around USD 35 billion in 2016. Thus the 8 EPZs contributed over 18% of the total national exports. BEPZA is now working towards setting up two more EPZs.

1.3.1.2 Labor-intensive industries in DTAs:

- Domestic market oriented industries

The then East Pakistan Small and Cottage Industries Corporation (EPSCIC) that was established in 1957 had been turned into Bangladesh Small and Cottage Industries Corporation (BSCIC) in 1972 with a mandate to continue the spread of labor-intensive industrialization mainly with domestic market orientation. The main objective was to eradicate poverty and create employment opportunities for the surplus unskilled labor force all across the country by setting up of several micro, cottage, small and medium industries to be engaged in producing simple products mainly for domestic consumption. An overall strategy of balanced regional industrialization of the country was planned. Accordingly, industrial plots were allotted to the emerging local entrepreneurs to set up small-scale labor-intensive industries with a view to producing handicrafts, jute products, handloom, leather goods, pharmaceutical products, light engineering, food processing etc. and sell mainly in the DTAs. BSCIC undertakes various programs with a view to - a) set up industrial parks in different parts of the country, b) identify and develop entrepreneurs, c) help market their products, d) provide training, and d) facilitate financing for the entrepreneurs. A total of 82 industrial parks has been established by BSCIC in several parts of the country where 11,271 plots have been allotted and 6,200 industries have been set up. Total employment generation from these 82 industrial parks has been to the tune of 62,000 people. The entire operation of BSCIC is broadly divided into four regions such as Dhaka, Chittagong, Rajshahi and Khulna. Dhaka region operates the highest number of industrial parks, i.e.; 27 followed by Chittagong region with 23, Rajshahi with 18 and Khulna with 14.

- Apparel manufacturing for the world market

In addition, the country started encouraging domestic enterprises to step in the apparel manufacturing business targeting the world market since the late 1970s. Initially, a few firms mainly from South Korea, Taiwan and Hong Kong etc. were actively considering the establishment of production facilities in countries such as China, Sri Lanka Bangladesh etc. amid the quota imposed on them by the US and other Western countries. One such move was with Desh Garments in Bangladesh that was established

with active collaboration from Daewoo Corporation of South Korea. Desh was to provide local resources including the cheap labor of Bangladesh and Daewoo was to provide technical know-how and access to international markets. Daewoo was keen to enter Bangladesh market to avert US quota restrictions and continue to maintain its market share of fabrics. On the other hand, Bangladesh had no quota imposed on it by the US government at that time and was keen to find a partner to learn the basics of apparel manufacturing. Therefore, both Desh and Daewoo complemented each other for gaining mutual benefits. The collaboration between Desh and Daewoo is considered a milestone in the history of Bangladesh's success in apparel manufacturing (Rhee and Belot 1989).

Daewoo and Desh did not engage in a joint venture company, rather they signed a collaboration agreement for 5 years between themselves in 1979. Daewoo agreed to provide technical assistance against a fee and marketing services against a commission. In addition, Daewoo sold machinery and fabrics to Desh against suppliers' credit arrangements. Under the technical assistance arrangement, a total of 130 newly recruited Desh workers were sent from Bangladesh to Daewoo's factory in Pusan, South Korea for a eight month long training program out of which 14 were female trainees (Rhee and Belot 1989). The trained staff of Desh in Daewoo plant in Pushan in South Korea was later moved out to either join in other similar enterprises or establish their own ventures within a few years. This created a whole new export oriented industrialization move by the local entrepreneurs by setting up apparel manufacturing facilities in rented houses in Dhaka and Chittagong metropolitan areas.

Government of Bangladesh provided necessary policy support schemes for the growth of this new labor-intensive industrial sector - such as relaxing labor laws, making unique financial arrangement popularly known as back-to-back letters of credit, allowing duty free import of raw materials in a bonded warehouse arrangement, and finally making the entire export earnings tax free. No foreign firms were allowed to enter into this special arrangement since the arrangement was specifically designed to achieve the growth of a strong base of domestic entrepreneurs in the export-oriented apparel manufacturing business. The logic behind this discriminatory policy was based on the assumption that foreign owned supplier firms were footloose. Foreign apparel manufacturers might go anywhere else based on the amount of policy incentives. Three

relevant trade bodies such as Bangladesh Garment Manufacturers and Exporters Association (BGMEA), Bangladesh Knit Manufacturers and Exporters Association (BKMEA), and Bangladesh Leather Goods Manufacturers and Exporters Association (BLGMEA) were entrusted with the responsibility to allow memberships to the domestic entrepreneurs only. As a result, foreign apparel manufacturers failed to get registered with the government's relevant sponsoring agency outside the EPZ areas since they were denied memberships of any of these trade bodies (Wahed and Rahman 2018). The justification for such a mechanism was to protect the domestic firms from the competition of foreign firms. The result of such a protectionist measure is today's success of Bangladeshi apparel manufacturers in the world market and the lion's share of apparel exports today comes from them.

Over the past four and half decades, Bangladesh's apparel sector has dealt with several obstacles to survive and grow from there. Among the export-oriented industries, contribution of the sector to GDP and total exports are 11% and 84% respectively. The export oriented apparel sector of Bangladesh created employment for more than 4.2 million people (ILO 2023), reduced poverty by generating employment (Alam et al. 2023) and particularly empowered women at the grassroots level. The country has become the second largest exporter of apparel items (Habib et al. 2021) amid several ups and downs. Almost all the leading brands and / or lead firms are currently present in Bangladesh. The country's cheap and abundant labor force was the initial reason for the international brands and manufacturers with a view to availing low cost apparel items (The Daily Star 2024). Having generalized system of preference (GSP) in place with European Union made it even more attractive manufacturing destination for the international brands and lead firms.

1.3.2 Tragic Rana Plaza disaster and its impact on reforms

In 2013, a tragic accident known as Rana Plaza disaster took place in Bangladesh. Rana Plaza, a multistoried building hosted several apparel factories (Rahman and Rahman 2019), which led to the demise of more than 1,100 workers and injuries to more than 2,500 workers (Lohmeyer and Schubler 2019; Bair et al. 2020). This accident drew attention of the entire world through extensive media coverage on the sorry state of

Bangladeshi apparel factories. Following the tragic event, pressures from various stakeholders mounted on the lead firms to put an end to the ongoing wrongdoings that were taking place in the apparel GVCs, and particularly, in the Bangladeshi apparel factories (Reinecke and Donaghey 2015). The US government immediately stopped the preferential trade benefits to the apparel items from Bangladesh (Alam et al. 2023). Government of Bangladesh and the Bangladeshi export-oriented apparel manufacturers felt the need to do something about the sector. Apparel brands from North America and apparel brands mainly from Europe formed two separate joint initiatives known as Alliance and Accord respectively to carry out reforms in the areas of fire, electrical and building safety in the Bangladeshi apparel factories.

Extensive reforms undertaken after the Rana Plaza disaster brought back the confidence of the North American and European brands in Bangladesh's apparel sector. Through these reforms, the country's apparel manufacturers ensured relatively safer working conditions to the satisfaction of Alliance and Accord joint initiatives. Apparel manufacturing facilities in Bangladesh are now more socially compliant (Alam et al. 2023). Many of such manufacturers have become more environmentally compliant as well (Akter et al. 2022). In addition to the availability of cheap labor, Bangladesh's apparel manufacturing sector is known for fairly large production capacity, good quality, and consistent level of growth (Maalouf et al. 2021). Therefore, most of the lead firms from North America, Europe and Asia continue procuring various apparel items from Bangladesh by maintaining local buying offices.

1.3.3 Top apparel manufacturing countries

China is still the largest exporter of apparel items with 30.6% market share followed by countries such as Bangladesh with 6.4%, Vietnam with 6.3%, India with 3.0%, Turkey with 2.5% and Indonesia with 1.5% market shares. Amid rising wages in China, trade tensions between US and China may lead to further restrictions on Chinese made apparel items. Therefore, some market shares of global apparel exports may move to the other competing countries. Bangladesh currently enjoying in the second position with US$ 34 billion exports and Vietnam enjoying the third position with US$ 33 billion exports are in very close competition with each other. Collectively Bangladeshi apparel

factories are capable of producing quite a large volume of apparel items at low cost, especially, the basic apparel items. Bangladesh's apparel factories still pay the lowest to its labor force - around only US 100/- per month that is much less than that in the other competing countries like China or Vietnam. Moreover, majority of the apparel manufacturers in Bangladesh underwent reform programs after Rana Plaza disaster in 2013 and had been certified as factories with safer working conditions by Accord and / or Alliance. After Rana Plaza disaster, Bangladesh's apparel manufacturing sector made significant transformations where multi-stakeholders collaborated successfully. Over the last decade, Bangladeshi apparel factories have made improvements in terms of social and environmental compliance too (The Daily Star 2024).

It is true that Vietnam is trying to snatch away Bangladesh's position with the hope that it has almost similar level of strengths in the areas where Bangladesh is strong too. Moreover, the country is geographically and culturally proximate to the current leader - China. Vietnam, therefore, expects that apparel factories in China in large numbers may relocate to the neighboring country. Bangladesh also expects a due share of the Chinese apparel factories that may be relocated here (Alam et al. 2023). India, being present in the apparel exports market for many years, is currently enjoying the 4th position in the apparel exports market. Despite having certain strengths, India lacks mainly the policy support and the labor law regime that may be appropriate for the further growth of the apparel sector. Indonesia and Turkey are too small in terms of market share at the moment when they are compared to Bangladesh. A South Asian country Sri Lanka, Bangladesh's closest neighbor Myanmar, and East Asian countries like Cambodia and Laos were emerging as apparel manufacturing competitors at one point in time in the recent past. Political unrest of the past and recent economic turmoil in Sri Lanka does not show much good sign for the country. Military coup of the recent past and the subsequent political instability spoiled Myanmar's potential in the world apparel market. African countries such as Ethiopia could not make a sustainable progress so far (The Daily Star 2024).

1.3.4 Relationship between lead and supplier firms

Most of the lead firms of the mainstream apparel industry from North America and Europe are currently sourcing from Bangladesh and whoever temporarily put a hold after the Rana Plaza disaster have already restarted their sourcing operation. Big brands such as H&M, M&S, Zara, C&A, Primark, Walmart, JC Penny, Target, Disney etc. have already reconnected with the apparel manufacturers in Bangladesh. In most of the cases, lead firms along the apparel GVCs in Bangladesh deal with the first tier supplier firms and refrain from directly dealing with the suppliers in the other lower tiers. The evolved relationship between the lead and first tier supplier firms has, predominantly, been upgraded from a cutting, sewing and trimming (CMT) level to an original equipment manufacturing (OEM) level. OEM first tier supplier firms are known as suppliers with full package capability to perform value-adding services in addition to the core manufacturing services (Frederick and Daly 2019). Therefore, the lead firms are currently consolidating their sourcing activities by relying on fewer OEM first tier supplier firms who are more capable to grow further. Many of the OEM first tier supplier firms are now considering investments for more automation and building additional capacity. If higher productivity can be achieved and the progresses that have been made after the Rana Plaza disaster can be sustained, Bangladesh should be able to retain its position in the global apparel market. Not by solely relying on cheap labor, Bangladesh should catch up with China in terms of higher productivity at the factory floor level. The chemistry of the new relationship between the lead and OEM first tier supplier firms shall definitely play a vital role in determining the extent of Bangladesh's future success in the global apparel market.

1.4 Methods

I have used both quantitative and qualitative methods to examine the research questions. Quantitative method, i.e.; multivariate regression analysis has been used in case of the first two papers, whereas qualitative method, i.e.; case study approach has been used in case of the third paper. Data for the entire thesis has been collected from Bangladesh. For paper 1 and 2, I have collected data from the eight export processing zones (EPZs) in Bangladesh. A total of 464 firms are there with a mix of SMNEs and domestic supplier firms (including supplier joint venture firms) that operate in these EPZs. These supplier firms operate primarily in the labor-intensive manufacturing

function along the GVCs, thus providing an ideal setting to conduct our research on productivity of and linkages created by the SMNEs vis-a-vis domestic supplier firms in the labor-intensive sectors. For paper 3, we have collected data on a pair of apparel GVCs as embedded cases - a British MNE orchestrates one while a Swedish MNE orchestrates the other. Besides, we collect data on eight Bangladeshi first tier supplier firms as embedded cases within the above pair of case studies.

1.5 Contributions of the three papers

My thesis contributes primarily to the IB literature by empirically examining previously untested theoretical propositions. The first two papers provide empirical evidence on FSA substitution patterns. FSA theory discusses a number of possibilities to substitute one FSA for another. Cantwell and Narula (2001) suggest that FSA_T are sometimes considered as sufficient for the MNEs to remain competitive when there prevails weaknesses in FSA_A. Deficiencies in one class of FSA may be overcome by the strength in another (Collinson and Narula 2014; Narula 2012 and 2017; Madhok 2015). Lee et al. (2021) further argue that deficiencies in one particular class of FSAs can be overcome by the strength in FSAs from not only another class but also within the same class. These theoretical suggestions have never been put in an empirical context to examine how SMNEs operating in labor-intensive GVCs drive superior productivity or remain cost competitive in the host countries despite creating fewer linkages given the weaknesses in FSA_A? The first two papers of the thesis attempt to address this yet unfinished task.

The third paper contributes to the strand of the literature that examines control without ownership. The IB literature has, so far, remained focused on the issue of control with ownership, and almost silent on the issue of control without ownership. Amid proliferation of GVCs, it has now become a question of significant importance. The third paper places internalization theory perspectives in GVC settings in order to analyze this question empirically.

The most important value added of my thesis is that it shows empirically that supplier MNEs can remain competitive vis-à-vis domestic supplier firms in labour-intensive GVCs through the strategic deployment of FSAs, while lead MNEs in labor-intensive apparel GVCs are able to maintain effective control without ownership also by leveraging FSAs.

The thesis can also be seen as a contribution to the literature at the confluence of IB and GVC. In examining productivity and linkage aspects from FSA theory perspectives, we look at the SMNEs operating along the labor-intensive GVCs. In examining the issue of control without ownership, we look at the lead MNEs operating along the labor-intensive GVCs from internalization theory perspectives. In recent times, it has been stressed that IB and GVC literature should integrate wherever possible to find answers to some new questions (Sinkovics and Sinkovics 2019; Strange and Humphrey 2019; Benito et al. 2019). Therefore, the thesis utilizes a quintessentially IB concept, namely FSA, in examining the operations of a class of MNEs that have been at the limelight in the GVC literature. My thesis will be positioned, in the IB literature, as an attempt to take a closer look at the MNEs that operate in the labor intensive GVCs either as lead firms or as supplier firms. In light of FSA theory, my thesis, specifically, examines how SMNEs remain competitive both in terms of productivity and cost, as well as how do the lead MNEs are able to maintain control without ownership despite the emergence of split governance arrangement. Discussions on such MNEs operating in the labor-intensive GVCs are still very limited in the extant IB literature.

1.6 Theoretical implications

Theoretical implications of the paper 1 include a) it further reinforces the role of FSAs in helping SMNEs remain competitive in the host countries by becoming more productive than the domestic supplier firms even in the context of labor-intensive sectors, and b) it shows that it is possible to use advantages(s) derived from FSA_T and / or FSA_R based on multinationality to overcome the deficiencies in FSA_A.

The second paper also has important theoretical implications. In the extant literature on MNE linkages, no study has, so far, been found that has tried to explain MNE linkages in the light of FSA theory in the context of the labor-intensive sectors. This paper of the thesis has shown that FSAs, particularly, FSA_T at both subsidiary level sourcing capabilities (SSC) and global sourcing capabilities (GSC) can fully explain MNE linkages in the labor-intensive sectors. SMNEs in the labor-intensive sectors primarily rely on FSA_T at SSC. I have shown that due to the lack of local knowledge particularly about the domestic input material markets, SMNEs are likely to encounter deficiencies in FSA_T at

SSC leading to creating fewer linkages than the domestic supplier firms. It has also been shown that the deficiencies in FSA_T at SSC may be overcome by the advantage(s) derived from FSA_T at GSC based on the degree of multinationality. All of that has been done with the help of FSA theory and supported by empirical evidence from Bangladesh.

The third paper has some important theoretical implications too. I show how the implementation of cascading compliance has led to the emergence of split governance where lead firms govern up to tier 1 allowing the OEM first tier supplier firms govern in the lower tiers. It has been shown that lead firms maintain direct control over the OEM first tier supplier firms with the help of contracts along with a direct coordination mechanism. It has also been shown that the same lead firms are able to exert indirect control over the suppliers in the lower tiers due to the maintenance of some relational capital in the form of pools of enlisted suppliers in those tiers. Both of these direct and indirect control mechanisms may be added to the existing theory on control without ownership.

1.7 Future Research Agenda

Future research agenda may include the following:

a) Future studies could explore FSAs and competitiveness dynamics of MNEs in other labour-intensive sectors beyond apparel, e.g.; footwear, electronics assembly etc. in other countries such as China, Vietnam, India, Indonesia, Pakistan, Combodia, Malaysia etc. to assess the generalisability of the findings.

b) The thesis highlights the importance of FSA_T and FSA_R in offsetting weaknesses in FSA_A. Further research might develop finer-grained metrics or proxies for these types of FSAs to improve empirical precision.

c) Another research agenda may be to examine productivity as well as cost competitiveness in the labor-intensive sectors where such SMNEs not only export but also serve the domestic market. The main purpose of this agenda is to make the results more generalizable.

d) Future research may explore empirically in different other countries such as China, Vietnam, Cambodia, India, Indonesia, Myanmar etc. to find out what else

mechanisms are there for the lead firms to achieve workable control without ownership along the apparel GVCs. The insights into control without ownership could be extended through longitudinal studies or multi-country comparisons, particularly, focusing on the evolution of governance structures across GVCs in different institutional settings.

e) It is important to examine control without ownership of the lead firms in apparel GVCs where the OEM first tier suppliers firms are MNEs, not domestically owned.

f) Additionally, there is scope for future work to integrate IB and GVC perspectives more deeply, by studying how lead and supplier MNEs co-evolve their strategies in light of changing global regulatory, technological, and environmental pressures.

1.8 The thesis outline

The remainder of the thesis is structured as follows. In chapter two, a literature review focusing mainly on IB literature is presented in order to find the lacuna. In chapter three, we provide with a brief discussion on changes in FSAs and transaction cost considerations. Chapter four presents paper 1 on FSAs and superior productivity of SMNEs in labor-intensive sectors, chapter five presents paper 2 on how FSAs help SMNEs in labor-intensive sectors remain cost competitive despite creating fewer linkages, and chapter six presents paper 3 on lead firms' control without ownership along the apparel GVCs. Chapter seven concludes.

Chapter Two: Literature Review

2.1 Introduction

Contributions to IB literature came from and/or were inspired by various strands of literature, namely; industrial economics (Hymer 1960, 1970, 1976; Kindleberger 1969; Caves 1971), transaction cost economics (TCE) (Coase 1937; Williamson 1975, 1979, 1981, 1984; Teece 1981, 1985, 1986; Dunning 1980, 1981, 1988; Dunning and Rugman 1985; Dunning and Narula 1996; Buckley and Casson 1976; Rugman 1981; Hennart 1982), strategy literature (Penrose 1959; Rumelt 1984; Wernerfelt 1984; Teece 1984; Barney 1991; Peteraf 1993; Zajac and Olsen 1993; Rugman and Verbeke 2003; Madhok 1997 and 2002; Jacobides and Winter 2005; Teece et al. 1997) to name a few major ones. Among these, industrial economics led the way until the early 1970s, TCE came into fore in the late 1970s, and the RBV and capabilities (value-based) approaches from strategy literature started to make inroad since the early 1990s. In the next few sections, I have touched upon early contributions from industrial economics to IB, TCE-based IB literature, value-based IB literature, welfare/developmental aspect of IB literature, alliances including joint ventures, the rise of outsourcing and offshoring, the growing significance of non-equity modes (NEMs), contributions on modularization, and GVC literature followed by a sub-section trying to identify the research lacunae.

2.2 Early contributions from industrial economics

Traditional theories of production and trade with their key assumptions of profit maximization and perfect competition failed to satisfactorily explain the phenomenon of the emergence of MNEs (Buckley and Casson 1976). International economists dealing with trade theory had their primary focus on the country level trying to explain trade and investment (both portfolio and direct investment) on the basis of macro factors such as comparative advantages in terms of factors of production, interest rate etc. (Rugman et al. 2011). It was none but Hymer (1960) who first identified foreign direct investment (FDI) as a distinct phenomenon and offered two major reasons why firms became MNEs by committing FDI - a) to reduce potential competition, and b) to exploit firms' special advantages abroad. He pointed out that although the theory of interest rate could explain portfolio investment, largely failed to explain FDI. He showed that unlike in the case of portfolio investments, it was not the rate of interest at the macro

level that had mattered in the case of FDI. Rather it was the issue of active control at the firm level that induced FDI and distinguished it from portfolio investment. Hymer (1960) chose the firm (MNE) as the unit of analysis and argued that MNEs possessed some ownership advantages through which they overcame the liability of foreignness (LOF)[1] and tried to create near monopolistic or oligopolistic situations in host countries over their domestic competitors. According to him, firms with such special advantages will prefer to engage in FDI rather than to license its advantages to a foreign firm in order to avoid the risks of bilateral monopoly situations, misappropriation of technology, and complicated negotiations with the potential licensee (Teece 1986). Hymer's landmark contribution did not come to light until 1976 when it posthumously came out as a published work. Various scholars based their work on Hymer's original work to advance the theoretical and empirical understanding of the MNEs. Dunning (1981, 1984), in particular, further clarified Hymer's arguments in his famous eclectic paradigm. Hymer had, however, been criticized for putting too much emphasis on MNEs' special advantages in creating monopolies and thereby exerting excessive market power[2] to undermine consumer welfare (Dunning and Rugman 1985).

Vernon (1966) proposed his product life cycle theory to explain why and how US firms internationalized during the post World War II period. The theory argues that at the early stage of a product's development, investment for production facilities take place in the home country, at the stage of maturity in relatively advanced countries, and at the stage of standardization in lesser developed countries. Vernon (1979) had revisited his product life cycle theory to suggest that his hypothesis of the late 1960s had strong predictive power up to two decades after the World War II and largely lost its predictive power to explain international investment activities of firms of subsequent times due to

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[1] Liability of foreignness (LOF) refers to the relative disadvantage of foreign firms arising from the lack of knowledge of local institutions and situations.

[2] Teece (2014) observed that Hymer failed to distinguish between competitive advantage and monopolistic market power. According to Teece (2014: 30), possessing competitive advantage by firms does not necessarily mean that they also possess 'any policy-relevant market power'.

two major changes - a) increase in the geographical spread of MNE activities, and b) decrease in the differences between advanced industrialized countries' domestic markets. He, however, argued that the product cycle theory might still be able to serve some purpose in the cases of a) developing countries where a large difference might still exist when compared to the developed world, and b) smaller firms that might still depend on home-based innovations.

2.3 TCE-based IB literature

Coase (1937) is considered to be the father of the theory of the firm and its underpinning transaction cost principles. He first brought the idea of transaction costs on board to provide rationales for the emergence of a firm as an economic institution. However, his initial analysis did not go beyond national borders. Few decades later, Williamson (1975 1981, 1985, 1991) elaborated further on transaction cost economics. Teece's (1982, 1985, 1986) contribution on TCE, in the purview of MNEs, has also been noteworthy. They both shed lights on the issue of buyer uncertainty[3], asset specificity[4] and bounded rationality[5] and discussed the implications thereof on transaction costs.

Buckley and Casson (1976) proposed their internalization theory by extending Coase's (1937) TCE principles to the international context. The theory argues that market

[3] Buyer uncertainty refers to a situation where the buyer is skeptical about the true value of a particular knowledge on sale and therefore, wants to know more details prior to reaching any deal. The seller, in such cases, have quite an opposite tendency not to divulge detailed information before a concrete deal is made due to the fear of opportunistic behavior.

[4] Asset specificity refers to the requirement of deploying any transaction specific asset to perform a transaction giving rise to a lock-in situation for one of or both of the parties leading to increase in transaction costs.

[5] Bounded rationality refers to the fact that there will always be limited information available at any point in time, and therefore, entrepreneurs and managers have to make decisions on the basis of available information.

imperfections[6] for intermediate products give rise to the need of bypassing the market mechanism due to the considerations of mainly economizing on transaction costs. Firms, in such situations, may tend to internalize markets across national boundaries by bringing the market mechanism under common ownership and control giving birth to the MNEs. Internalization theory assumes rational action by the managers of the firms. They will tend to internalize markets up to the point where the benefits of internalization either equal or exceed the costs of internalization. Rugman (1981) and Hennart (1982) also made important contributions to further develop internalization theory. Rugman (1981), in particular, identified firm specific advantages (FSAs) and country specific advantages (CSAs) as the key determinants of FDI. Unlike Buckley and Casson's (1976) internalization theory, he focused on the MNE as the unit of analysis adopting a managerial point of view (Narula and Lee 2020). Rugman (1981) proposed a FSA/CSA matrix for analysis of MNE activities. He tried to make internalization theory a general theory of the MNE, and added strategic management thinking to it by adding the concepts of location bound[7] and non-location bound[8] FSAs (Eden 2005). Hennart (1982) applied Williamson's (1975) concepts such as buyer uncertainty, asset specificity and bounded rationality in internalization theory and developed models that can distinguish between vertical and horizontal integration (Rugman and Verbeke 2008). Hennart (1988) is also credited for his contribution towards providing the TCE perspective in case of joint ventures.

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[6] Hymer (1960) also spoke about market imperfections, but of final outputs only. He completely ignored the fact that market imperfections for intermediate products also existed and perhaps more relevant to understanding the phenomena of FDI and MNEs. Buckley and Casson (1976) first brought this to light in their famous internalization theory.

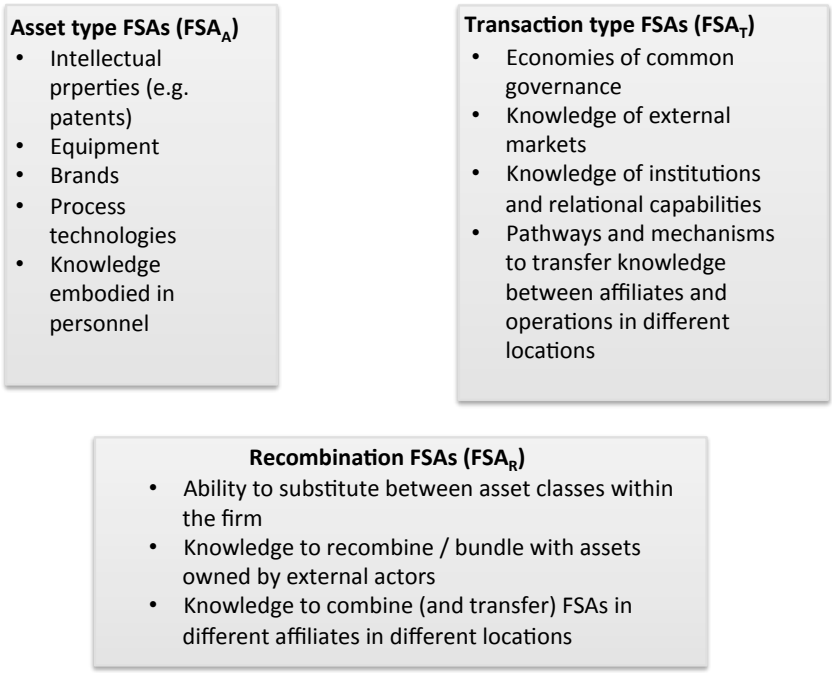
[7] Location bound (LB) assets, simply put, refers to assets that cannot be transferred from one location to any other location.

[8] Non-location bound (NLB) assets, contrarily, refer to assets that can be moved or transferred from one location to other locations.

Dunning (1980, 1981, 1988, 1992) proposed his eclectic paradigm considering three factors: Ownership (O), Location (L) and Internalization (I) advantages to determine international activities of MNEs (Rugman 2010). Dunning's eclectic paradigm is popularly known in IB literature as the OLI framework. The paradigm, however, later expanded into investment development path (IDP) theory to explain the relationship between FDI and stages of development of countries (Dunning and Narula 1996). Rugman's (1981) FSAs are often referred to as the combination of both O and I advantages of Dunning's OLI framework, while CSAs refer to L advantages of the same (Rugman 2010). Likewise, Hymer's (1960) monopoly type advantages are often considered similar to Rugman's (1981) FSAs. However, Dunning opted for a broader definition of O advantages[9] by integrating both asset-based (Hymer type) and transaction-based (internalization theory type) advantages. After years of reconciliation, IB scholars nowadays interchangeably use the terms one for another, such as; O advantages for FSAs, and L advantages for CSAs. Dunning (1993) went further to add advantages of common governance for MNEs having the ability to access resources of alliance partners in an alliance or in a network. Some scholars termed this advantage as recombinant advantage by which MNEs recombine or bundle newer internal or external resources with their existing resources and/or capabilities (Kogut and Zander 1993; Rugman and Verbeke 2008; Hennart 2009). In summary, there are three types of O advantages or FSAs that an MNE may have - a) asset type advantages (FSA_A), b) transaction type advantages (FSA_T), and c) recombinant type advantages (FSA_R). Figure 1 below illustrates the classification of FSAs:

[9] Teece (2014) observed with reference to Cantwell that Dunning's O advantages were not limited to firm specific advantages only, whereas Rugman's (1981) FSAs were specific to individual firms.

Figure 2-I: Classification of FSAs



Source: Based on Narula (2017)

Host country's L advantages or CSAs include market size, natural resources, infrastructure, education and national innovation system, institutions, political system etc. Sometimes it is difficult to distinguish between O and L advantages. For instance, when the rights to a natural resource is granted to an MNE by a host government that L advantage of the host country immediately turns into an O advantage for the MNE (Rugman 2010). Similarly, some O advantages of firms (domestic or foreign) already operating in the host country will be considered as an L advantage by an incoming MNE in the same industry.

The importance of transfer of O advantages / FSAs by the MNEs to their foreign markets avoiding the risk of dissipation had been at the core of IB literature for decades (Dunning 1958; Hymer 1960; Vernon 1966; Buckley and Casson 1976; Rugman 1981; Hennart 1982). Transaction cost based IB literature assumes the existence of various

types of market imperfections[10] for transfer of FSAs and tends to prefer solutions that economize on transactions costs. For instance, if the FSAs of a firm are difficult to codify, then it will be very hard to find market-based solutions leading to increases in associated transaction costs. Over and above, if asset specificity exists for a particular transaction or a series of transactions, transaction costs will be even more on the higher side. Because, deployment of transaction specific assets will put both or one of the parties in a locked-in situation from where getting out is considered to be costly. Therefore, the party who will invest in a transaction specific asset will expect or ask for special measures to safeguard its investment against potential opportunisms involving tougher negotiations and contractual processes. In such cases, firms will tend to choose internalization in order to economize on transaction costs. By internalizing, a firm will bypass the market-based mechanism with its internal governance system in order to protect its FSAs against potential opportunisms and at the same time, ensure timely deployment and proper use of any transaction specific assets. Contrarily, where FSAs of a firm are easy to codify and no asset specificity exists, transaction costs will be relatively lower driving firms to opt for market based solutions such as licensing or outsourcing instead of an internal solution.

In summary, TCE takes the transaction(s) as the basic unit of analysis and provides a basic framework to assess transactions to decide on which ones are to internalize and which ones are not. Without TCE framework, IB literature, especially the internalization theory, would be incomplete (Teece 1986). The key limitation of transaction cost based IB literature has been the overemphasis on cost optimization and FSA dissipation risks, while at the same time, under emphasis on value or capability creation. Any assessment of choices between governance modes will remain incomplete if it is done only on the

[10] Market imperfections refer to transactional hazards in an open market exchange ranging from the absence of a suitable buyer to the presence of high transaction costs. There may be both natural and man-made imperfections in the market. Natural market imperfections include problems associated with public good nature of knowledge, buyer uncertainty etc., whereas man-made imperfections include government imposed tariff and other regulatory restrictions, foreign exchange risks etc.

basis of transactional conditions, without taking account of firm's resources and capabilities (Madhok 2002; Jacobides and Winter 2005). Zajac and Olsen (1993) identified two sets of limitations of TCE such as a) single party focusing on cost minimization ignoring the aspects of interdependence and joint value creation, and b) overemphasis on structural features of the exchange ignoring the process issues. TCE, having its limitations, may work well if complemented by the resource or capability based view, and therefore, a convergence between the two has been considered inevitable (Jacobides and Winter 2005).

2.4 Value-based IB literature

To deal with the limitations of TCE, some scholars at a later time engaged with strategy literature, in particular, resource-based view (RBV) (Penrose 1959; Rumelt 1984; Teece 1984; Wernerfelt 1984; Barney 1991; Peteraf 1993) as well as organizational capabilities (OC) (Madhok 1997 and 2002) and dynamic capabilities (Teece et al. 1997) approaches respectively. Penrose (1959) viewed the firm as 'an evolving collection of resources', and her book titled the 'Theory of the Growth of the Firm' had been the intellectual foundation of resource-based view (RBV) of the firm (Rugman and Verbek 2002). She suggests that firms grow by exploiting its existing resources[11] and at the same time, developing some newer ones. RBV assumes that firms are heterogeneous in terms of resource endowments and there always exists a finite limit to firm resources. A single firm cannot always possess all the resources that it may need to generate competitive advantages. Therefore, it is important for firms to keep rejuvenating their resources by generating knowledge internally as well as looking for complementary resources across firm boundaries.

Barney's (1991) seminal work on strategic management assumed that firms possessed heterogeneous and immobile resources, and proposed a resource-based model to assess the resources of a firm to determine its sources of sustained competitive advantages.

[11] Resources refer to assets, organizational routines and processes, firm attributes, information as well as various kinds of knowledge under a firm's control to effectively implement firm strategies (Barney 1991).

Four important criteria[12] had been suggested in this regard - a) value, b) rareness, c) imperfect-imitability, and d) non-substitutability. RBV suggests that sustained competitive advantages cannot be bought in open markets, are available within the firms (Barney 1986 and 1991). Later, Zajac and Olsen (1993) proposed a transactional value approach instead of TCE to overcome the limitations of TCE and to achieve joint value maximization as well as processes through which both parties would co-create value and share the same.

Madhok (1997) introduced the concept of organizational capability[13] (OC) which involved a number of fundamental shifts in approach, e.g.; a) unit of analysis shifted from transaction to firm, b) focus shifted from cost to value aspects, c) default mode of entry shifted from market for TC to hierarchy for OC, c) emphasis on opportunism shifted to bounded rationality. OC questions the justification of TCE's skepticisms on account of opportunism leading to avoidance of some collaborative opportunities, and argues that collaborative relationships must be looked at from the viewpoint of creating and realizing value. Because, in today's competitive world, organizational forms chosen on the sole basis of TC economizing to remain competitive may in turn erode firm's competiveness (Madhok 1997). OC perspective encourages firms to specialize on things that they can do well and build interdependence by collaborating for complementary capabilities, instead of remaining isolated in the name of self-reliance.

Moving further, Teece et al. (1997) introduced the concept of dynamic capabilities highlighting the sources and methods of value creation and capture in rapidly changing environments. They defined the term 'dynamic' as the capacity to renew competences to keep pace with the fast changing business milieu to add to the term 'capabilities' to

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[12] Popularly known in strategy literature as VRIN criteria, a short form of Barney's four criteria of firm resources - value, rareness, imperfect imitability, and non-substitutability.

[13] Capabilities refer to a combination of resources that enables firms to generate higher-order competencies (Madhok 1997). For instance, independent resources such as strong brands, loyal customer base etc. can be transformed into a capability when appropriately combined with a firm's organizational routines and technology (Erramilli et al. 2002).

propose a new integrative framework with more emphasis in the key role of strategic management in adapting, integrating, and reorganizing both internal and external skills, resources, and competences (Teece et al. 1997). Dynamic capabilities approach was later applied by Teece (2014) to offer a dynamic capabilities-based theory of the MNE arguing that MNEs, in today's fiercely competitive world, need to have not just best practices, but 'signature processes', and not just any resources, but resources that meet the VRIN criteria of Barney (1991), and that too along with an appropriate strategic management practice in place. He further argues that MNEs relying on ordinary capabilities will suffer due to the vulnerable nature of ordinary capabilities over a longer period of time. Even some strong ordinary capabilities of MNEs may also erode due to competition and imitation by competitors unless rejuvenated further or protected by some kind of entry barriers (Teece 2014).

Madhok (2002) argued that RBV based and capability based works could be labeled together to call them collectively as 'resource or capability based view'. He referred to the suggestion of Barney (1991) that capabilities were often considered to be included in the broader definition of firm resources. Some scholars (Teece et al. 1997), however, suggested that capabilities should refer to how firms manage their resources. Resource or capabilities based view challenges the TCE view that an activity is conducted within a firm due to market failure, and puts forward quite an opposite view that an activity is conducted within a firm not due to market failure, but due to the firm's success in organizing the activity in a way that the market cannot do (Madhok 2002). Quite a similar view comes from Kogut and Zander (1993) that an MNE does not emerge due to market failure, but due to relative efficiency of the MNE organization in transferring knowledge across borders. Rugman and Verbeke (2003) tried to integrate TCE based internalization theory with the concepts from RBV such as competence creation, transfer, exploitation and even augmentation (Rugman et al. 2011).

In value-based IB literature, emphasis has shifted to firm's idiosyncratic resources and capabilities to create value by either a) exploiting the existing resources and capabilities of the firm, or b) exploring new resources and capabilities of the others. A firm aiming to exploit its resources and capabilities will prefer to internalize in order to ensure more efficient exploitation of the same by keeping better control over its operation and FSAs

which will help reduce the risk of value erosion due to potential opportunistic behavior of external parties. On contrary, when a firm pursues an explorative strategy to avail access to newer resources and capabilities, it will be likely to choose less hierarchical solutions such as joint ventures, non-equity alliances, outsourcing, licensing etc. instead of an internalized solution. In such cases, the firm will be able to gain access to resources and capabilities of others beyond its own organizational boundary and have the opportunity to integrate some new knowledge with less investments and commitment in resources (Kogut 1988; Zajac and Olsen 1993; Mudambi and Tallman 2010). This preference for less hierarchical solutions will be even stronger, if the firm deals with FSAs or competitive advantages that are non-core to the firm and based on some easy to codify or standardized knowledge (Hamel 1991; Narula 2001 and 2002; Mudambi and Tallman 2010; Mariotti et al. 2013). Unlike the TCE, value-based IB literature recognizes the importance of a firm's ability to integrate knowledge developed beyond its organizational boundary. Madhok (1997) argues that the risk of opportunism, highlighted by TC, will be traded-off against long-term value considerations, and suggests that emphasis should be put on managing firm's relationships prudently in order to reduce the costs (including TC) and at the same time, reap the benefits from it.

2.5 Alliances including joint ventures

IB theories suggest that the activities that are considered to be core to the firm are internalized allocating the rest among external parties such as contractors and allies both domestically or globally. But recent evidence suggests that firms are nowadays not only going out for low-end production activities for efficiency sake, but also for high-value knowledge creation purposes such as R&D, design, engineering etc. which have usually been considered as the core for firms' survival and growth (Manning et al. 2008; Pyndt and Pedersen 2006). Mudambi and Tallman (2010) applied TCE, RBV and transactional value perspectives to the case of knowledge process outsourcing (KPO). They have argued that knowledge outsourcing requires a make-or-ally decision framework (hierarchy to alliances) instead of a make-or-buy (hierarchy to markets) decision framework to effectively protect, share and leverage strategic assets of firms. Castaner et al. (2013) examine performance implications of make or ally decisions in the global aircraft industry to conclude that not so much the modes of governance, but more

so an optimal fit/alignment between lead firm's available resources and activity's resource requirements contributes to superior performance for the alliance.

Alliance literature suggests that collaborations have clear benefits in terms of combining resources and capabilities of different parties to the transaction (Kogut 1988; Mitchell et al. 2002; Zajac and Olsen 1993). But at the same time, collaborations may entail disadvantages too such as increases in costs due to growing requirements of coordination at both parties' ends (Gulati and Sing 1998; White and Lui 2005), risks of opportunism by creating potential competitors (Hamel 1991) etc. Inter-firm coordination is not an easy task since there are various forms of distances involved at both organization and country levels. First, organizational routines and cultures vary between firms within the same country. Moreover, formal and informal institutions in different countries are different too making coordination of alliances further complicated. Mitchell et al. (2002) dichotomize alliances - a) scale alliances where parties bring in similar kind of resources, and b) link alliances where firms contribute complementary resources. On the basis of a global study, they report that firms contributing R&D and production resources tend to prefer link alliances taking stronger protection measures against potential appropriation risks, whereas firms contributing marketing resources opt for scale alliances making higher levels of coordination arrangements.

Joint ventures fall within the realm of alliances and are considered to be a cooperative alternative to hierarchy, outsourcing and markets. Joint ventures may be purely horizontal, purely vertical, or a mix of actors from both horizontal-vertical levels, and may be formed by merging two economic actors, or acquiring partially a new entity, or forming a new entity as a greenfield project on equally shared equity or asymmetrically shared equity basis. Kogut (1988) argues that motivations for forming joint ventures are essentially three: a) reduce bargaining (from TCE perspective), b) enhancement of competitive positioning (from value perspective), and c) mutual transfer of knowledge (from organization theory perspective). According to him, joint ventures are formed in order to both minimize TC and maximize joint value, and at the same time, transfer organizationally embedded knowledge assets. The interplay between competitive incentives and competitive rivalry among the joint venture partners goes on. How

successfully this interplay is managed between the partners is crucial to the ultimate success of joint ventures. Mariotti et al. (2013) state that MNEs usually tend to choose partial acquisition keeping the local partner in order to overcome LOF and also to preserve the target's competencies intact for future exploitation.

IB literature, especially the TCE based one, keeps focus on two polarized options - either market or hierarchy (Casson 2013). But there are several other options in between that have, so far, been overlooked or neglected. Collaborative modes such as alliances, especially for R&D at the horizontal level, have been explored by Dunning (1997), Buckley and Chapman (1998); Narula and Dunning (1998); Narula (1999, 2001 and 2002); Narula and Duysters (2004); Mudambi and Tallman (2010). But at the vertical level, very limited efforts have, so far, been made. Value-based IB literature, however, have started to recognize the importance of collaboration at the vertical level for joint value creation by looking at FSA augmentation opportunities beyond firm boundaries.

2.6 Rise of outsourcing and offshoring

With the increased pace of globalization driven by liberalized trade regimes, ease of communication due to advancements of information communication technology (ICT), and reduced transportation costs, the phenomenon of outsourcing and offshoring has been on the rise. Both outsourcing and offshoring mean crossing boundaries. Outsourcing is about crossing the boundary organizationally either home or abroad, while offshoring involves crossing national boundaries either within or beyond firm boundaries (Contractor et al. 2010). Baldwin (2006) spoke about the first and second rounds of unbundling of business activities of firms. Falling transportation costs since the late 19th century caused the first unbundling where production and consumption functions were separated. Whereas, rapidly falling communication and coordination costs caused the second round of unbundling in the mid 1980s where the production function was split both geographically (offshoring) and organizationally (outsourcing). It was no longer necessary for the firms to perform fragmented or fine sliced value added activities in the sphere of the production function to be placed near to each other. International supply chains were established where various slices of the value added crossed national borders multiple times (Baldwin 2009). The second round of

unbundling continued further to split between production and services (Baldwin 2006). Firms shifted to production processes with various 'fragmented production blocks connected by service links' (Jones and Kierzkowski 1990: 31). Various scholars referred to the second round of unbundling either as fragmentation or international production sharing or slicing up the value added chain etc. ((Jones and Kierzkowski 1990, 2000; Yeats 1997; Baldwin 2006). Ando and Kimura (2005) examined the East Asian international production / distribution networks with vertical production chains extended within the region and distribution networks spread throughout the world.

More than half of global exports now comprise of intermediate products and services (Kaplinsky 2013: 4), and the trends are moving towards further rise in the same direction. This growing phenomenon of outsourcing and offshoring is seemingly taking place along some value chains popularly known as global value chains (GVCs) comprising of various economic actors and some lead firm(s) at the helm. MNEs, along the GVCs, are increasingly depending less upon hierarchical modes and entering foreign locations by using various non-hierarchical modes, even in cases of offshoring, due to mainly falling transaction costs and the compelling needs to explore newer resources and capabilities. In this connection, a new strand of literature has emerged since the early 1990s on GVCs led by Gereffi (1994) in complete isolation from IB. Some IB scholars, however, have contributed to IB literature touching upon GVCs and the related concepts, but from a distance (Rugman and D'Cruz 1997; Buckley 2008, 2009 and 2016; Buckley and Ghauri 2004; Casson 2013). Some wrote on modularization, the essential concept in offshoring and outsourcing (Brusoni, Prencipe and Pavitt 2001; Brusoni and Prencipe 2001; Brusoni and Prencipe 2011; Contractor et al. 2010; Jacobides 2008; MacDuffie 2013).

Rugman and D'Cruz (1997) put forward the flagship theory to capture the growing trend of de-internalization and collaboration. They portrayed an MNE as a flagship firm who took on the strategic leadership role of a business network comprising of its key suppliers, key customers, selected competitors and non-business infrastructure. However, this theory could not make adequate impact in the field due to its weak analytical capability and failure to track the ongoing changes taking place at the ground level over a truly global scale. Buckley and Ghauri (2004) recognized the growing trend

of outsourcing and offshoring by the MNEs and termed the governance of such outsourcing and offshoring-based structure of operation as 'global factory'. In this structure, an MNE fine-slices its activities, involves several external parties to work on individual slices of the activities, and arranges to reintegrate the individual slices into one final product. According to them, instead of internalizing, MNEs are becoming much more dependent on networks of suppliers, contractors, sub-contractors, and various other external parties. Even the core functions like design, engineering, branding and marketing are also outsourced to contractors. Casson (2013) examined the growing phenomena of outsourcing and offshoring along the GVCs from an internalization theory perspective. He argued that the growth of outsourcing and offshoring is due to 'changing underlying economics', not because of firm strategy. According to him, offshoring is caused by the ease of communication, lower transportation costs and liberalized trade regime, and outsourcing is boosted by the growth in new capable suppliers and improved protection for property rights.

2.7 Growing significance of NEMs

Due to changes in global economic structure and a growing trend of disintegration of business functions, the use of non-equity modes (NEMs) by the MNEs has been on the rise. The estimated value of global sales generated through NEMs in 2010 was more than $2 trillion (UNCTAD 2011: 123). NEMs can be defined as a group of alternative governance modes that the MNEs use to coordinate and control activities of various actors along their respective value chains. They fall in between full/partial hierarchies and markets, and include leasing, licensing, franchising, contract manufacturing, service outsourcing, contract farming, management service contracts, distributorship or sales agency, various types of non-equity alliances, and several other formal or informal contractual arrangements (Dunning 1988; Erramilli et al. 2002; UNCTAD 2011). If risks are accounted for and contained, NEMs can bring some advantages to MNEs. First, NEMs can sometimes offer efficiency to MNEs. Second, by shifting part of their existing investments, costs, and risks to NEM partners, MNEs can free up some of their scarce resources to be diverted to core activities. Third, MNEs can exercise some degree of

workable control over NEMs even without having any ownership. Fourth, NEMs can bring along complementary resources and capabilities to MNEs.

The precondition for NEMs to emerge is that there must be some form of complementarity between an MNE and its potential NEM partners. Usually, activities that are not core to the MNEs' competitive advantages and involve only standardized or easy to codify knowledge are considered for governance through NEMs subject to either assurance of lower cost or potential for higher value creation and realization. Contrarily, activities that are high-value knowledge creation related and core to firm's competitive advantages involving tacit and difficult to codify knowledge are considered for hierarchy. Although recent IB literature suggests that high-value R&D, design and engineering jobs are also nowadays moving out from hierarchies and entering the realm of NEMs (Mudambi and Tallman 2010).

Alcácer et al. (2016) argue that in the current era of ICT enabled network of value chains, MNEs' control mechanisms transcend organizational boundaries that have traditionally been linked, in IB literature, with ownership. They further argue that MNEs nowadays control much more activities in various facilities worldwide than they actually own and insist that the matter of control in the changed business milieu should be revisited. The question that arises here is how control is achieved by the MNEs in case of NEMs without ownership? First, management may be an alternative form of control in absence of ownership. This is particularly prevalent in management service contracts (Erramilli et al. 2002) and non-equity based alliances. With the right to manage, MNEs can achieve effective control over some types of NEMs. Second, contracts can play a significant role in controlling where formal contracts are in place (UNCTAD 2011). According to Buckley and Casson (2019: 1427), '...it is not only ownership that confers control, contracts also confer control'. Most of the NEMs, perhaps, involve some formal or informal contracts. But contracts may not always be enough due to flawed contract designing and enforcement issues of the same especially in countries where institutions are weaker. Third, heavy dependence of the NEM partners on MNEs to gain access to key resources such as technology, market, innovation etc. may be another lever of control in the form of asymmetric bargaining power (UNCTAD 2011). Fourth, relationships may also act as control mechanism that is termed by GVC theorists as

relational governance (Gereffi et al. 2005). Fifth, literature on modularization suggests that modularity design can also play effective role in controlling the NEM partners (MacDuffie 2013). Firms using modularization may keep some modules less decomposed intentionally even if more could be done. Also by maintaining a divide and rule policy, NEM partners may be exposed to information related to their specific module or component only, not about the other modules or components or even the interface. System integration responsibility and knowledge is also kept confidential from the NEM partners with the aim to control. Lew et al. (2016) suggest that modularity may substitute relational governance and overcome the problems arising from cultural differences. It is, however, noteworthy that the abovementioned drivers of control in absence of ownership do not represent an exhaustive list and may not be mutually exclusive to each other. Rather they may work in conjunction with one or more other drivers to achieve workable controls in absence of any ownership. GVC literature, however, tried to theorize on control in absence of ownership along the value chains and presented a list of five governance modes ranging from market to hierarchy (Gereffi et al. 2005). IB has been almost silent in this area of control without ownership.

The main focus of the mainstream IB literature has, so far, been on export, FDI or licensing only. The reason for that might have been the past trend of MNEs' dominant preference for FDI as the choice of governance modes for their international expansion. Unlike FDI, NEMs, as alternative modes of governance, have not yet been able to draw adequate attention from the IB scholars. Although alliances have been investigated in some details by a number of scholars (Dunning 1997; Buckley and Chapman 1998; Narula and Dunning 1998; Narula 1999, 2001 and 2002; Narula and Duysters 2004; Mudambi and Tallman 2010) as has been mentioned in the earlier section, various other forms of NEMs such as licensing, franchising, contract manufacturing, contract farming, leasing, and management service contracting still remain relatively underexplored areas for future investigation. The global sales volumes for some of these forms of NEMs are quite large and not negligible any more. For instance, contract manufacturing and service outsourcing together represent US$ 1.10-1.13 trillion, licensing represents US$ 340-360 billion, franchising represents US$ 330 - 350 billion, and management service

contracting represents US$ 100 billion (UNCTAD 2011: 123). And more importantly these figures are still growing at a faster rate than that of their respective industries.

Considering its growing significance, NEMs need more attention from IB scholars. Especially, the very issue of how MNEs choose between various options of NEMs along their value chains has not been examined in IB literature. Only exception is, perhaps, the work of Erramilli et al. (2002) that examined this question by applying Madhok's (1997) OC perspective in the global hospitality industry.

As the volume of business activities through alliances and various other contractual arrangements are on the rise, the importance of contract designing is also growing. Unlike economics, both management and strategy literature are dearth of literature on contract designing (Argyres et al. 2007). The same applies to IB too, perhaps, due to relatively less focus on the middle ground between the two poles - market and hierarchy. Licensees, franchisees, suppliers, subcontractors, and even workers in host locations enter into different forms of formal or informal contracts where they have to abide by the terms of such contracts (Buckley 2009 and 2011). Argyres et al. (2007) highlight the importance of developing contracting skills through continuous learning from previous contracts. They further argue that firms go through experiential learning process by entering into contracts for inter-firm collaborations. Their findings from a sample of 386 contracts suggest that contingency planning and task description in contracts complement each other and subsequent contracts are improved by previous learning by both parties to the transaction. Newer sets of contingency planning are added to new contract designs and some of the earlier sets of contingency planning are put into task descriptions in the future contract designs (Argyres et al. 2007). Considering the importance of contract designing skills to firms' success in materializing collaborations, Argyres and Mayer (2007) highlighted this as one of the important firm capabilities.

2.8 Contributions on modularization

Discussion on modularization becomes relevant as and when there arises a need for outsourcing and / or offshoring involving either alliances or some forms of NEMs. Every firm in business adopts a particular type of product architecture - either integral or

modular depending on its strategy. Modular architecture is particularly suitable for outsourcing and offshoring. Modularization helps boost specialization and drives inter-firm collaboration at both horizontal (e.g.; alliances) and vertical levels (e.g.; outsourcing and offshoring). But there are associated organizational challenges that the firms who adopt modular product architecture should be able to take care of. The most important organization related question is - how far to fine-slice or modularize? Should it be at system level, sub-system level, sub-subsystem level, component level, or sub-component level? MacDuffie (2013) calls this modularity-as-framing decision. It is important to find the optimal degree of modularity since after a certain level increases in costs associated with excessive communication and coordination may exceed the benefits of modularization (Contractor et al. 2010). Another important issue is to build / reconfigure the organization according to firm's product architecture that describes key functional relationships, required capabilities, and other resources. For instance, modular organizational arrangements will not be suitable for integral product architecture or vice versa. MacDuffie (2103), however, argues that it is not always the case that product architecture sets the organization that it may need, prevailing organizational structure may also dictate the suitable product architecture that the organization may want to pursue.

Adopting product modularization gives rise to the need for additional efforts in organizational and knowledge coordination. Brusoni and Prencipe (2001) termed this as the additional task of system integration to make sure that all the fragmented components of the product, either internally produced or outsourced, are appropriately reintegrated as a complete product fulfilling desired specifications and quality requirements. In order to be able to perform the job of system integration, firms that are adopting product modularization must know more than what they are specialized to make by themselves (Brusoni et al. 2001). MacDuffie (2013) also highlights the role of system integration. In similar line, Elia et al. (2015) highlight the fact that reintegration is the main issue in offshoring, and a complex modularity involving more interdependencies will require more frequent and intense interaction between the parties to be able to reintegrate the modules giving rise to transaction costs. They

further argue that appropriate use of modularity in offshoring can reduce transaction costs and the risks of leakage of knowledge.

However, it is not easy to modularize everywhere. The ease of modularity varies from industry to industry. In some industries, it is relatively easier to modularize such as personal computer, electronics, apparel etc., whereas difficult in some such as process industries, automotive, high-end manufacturing etc. Industries that can easily decompose firm activities can use modularization and adopt more non-hierarchical forms of coordination such as outsourcing and offshoring. Contrarily, where it is relatively difficult to decompose firm activities, hierarchical solution is required (Levinthal 1997). Also there exists divergence in national systems of doing business between countries that leads to differences in modularity. Jacobides (2008) argues that for value chains to expand globally, there must be global convergence in modularity in the form of institutional modularity. He cites the case of architects from France versus those in the UK in terms of scope and capabilities. Architects in France limits their role up to concept and design level, but in the UK, they go up to detailing. Therefore, the limited scope for the French architects limits their capabilities to expand into the UK construction industry. It is, however, quite difficult for firms to adopt institutional modularity ignoring the country level path dependencies in terms of the nature, structure and operation of the value chain (Jacobides 2008).

Brusoni and Prencipe (2011) highlight the importance of analyzing modularity at product, organization and knowledge levels to gain a more systemic view of firms' successes versus failures. MacDuffie (2013) argues that modularity analysis should use three interrelated aspects such as modularity-as-frame, modularity-as-property, and modularization-as-process simultaneously. According to him, keeping modularity-as-frame in the contextual consideration, focus should be on the interplay between modularity-as-property and modularization-as-process instead of looking at either of these two aspects singly. Modularity is a cognitive frame affecting firm strategy that provides direction, modularity is also a property of the architecture of firms' product, organization and networks, and modularization is a process of ongoing learning about the interdependencies. Modularity as a cognitive frame is for the managers to figure out which activities are to be conducted internally up to what level (e.g.; module or

component or sub-component etc.) and which ones at what level are to be outsourced from specialized suppliers. Macduffie (2013) further argues that modularization is a dynamic process as opposed to modularity as a relatively static design property. Modularization keeps evolving as a process, whereas modularity as property may stabilize. Modularity as processes may lead firms either way - toward further modularity-as-property or quite the opposite direction towards greater integration.

He presents two case studies from the global automotive industry - Hyundai vs. Ford to argue that while framing modularity, emphasis should not be only on achieving higher modularity-as-property, but more on modularization-as-process for the opportunity to learn interdependencies within and across product and organizational architectures and make required adjustments. Module boundaries may vary depending on contexts. For instance, module in production (MIP) will not be similar to module in design (MID) and modules in technical tasks are more complicated than related organizational tasks. Expectations from different stakeholders are also different. For instance, producers may want easy installation, whereas designers may want minimum interaction from modularity-as-property. Setting module boundaries and specifying interfaces between them is not an easy task. Depending on the level such as product, component, sub-component, or organization, evaluation of modularity-as-property will vary (MacDuffie 2013). Elia et al. (2015) cautioned firms with less experience in offshoring not to underestimate the resources and costs associated with coordination and monitoring tasks for reintegration of modules since it might ultimately lead to failure in offshoring activities.

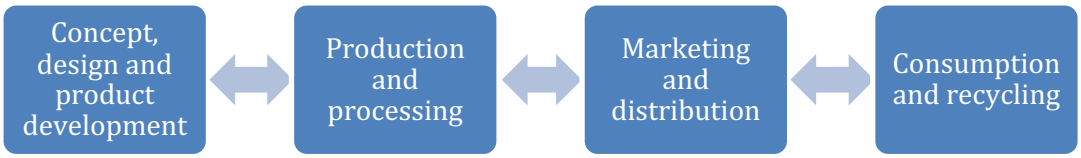
2.9 GVC literature

Gereffi (1994) initially proposed the term global commodity chains to suggest that global production systems are although dispersed around the world, essentially linked in chains coordinated and dominated by few lead firms setting the ultimate rules of the game. He described this rule-setting role as governance and placed it at the center of an analytical framework. Gereffi, in his initial work, broadly divided global commodity chains in two types – a) buyer-driven commodity chains, and b) producer-driven commodity chains (Gereffi et al. 1994). However, in early 2000s, Gereffi along with few

other British scholars worked together for advancement of the concept of value chain and replaced the term 'commodity' by 'value' in order to accommodate 'the full range of possible chain activities and end products' (Gereffi et. al. 2001: 3). Since then the lexicon was changed from global commodity chains to global value chains (GVCs). The proliferation of internet, digital economy and rise of platform companies such as Amazon, e-bay, Alibaba etc. have recently created a third kind of chain known as consumer feedback chain (Li et al. 2019). Gereffi made substantial contribution to develop and popularize the concept of GVCs and therefore, some scholars refer to him as the 'parent of modern GVC theory' (Kaplinsky, 2013: 8).

The term 'value chain' can be defined as the range of activities or functions that a product or service passes through from the origination at the concept level to transformation in production and processing up to the level of its final consumption[14]. Figure 2 below depicts a simple value chain.

Figure 2-II: A simple value chain



Source: Adapted from Kaplinsky and Morris 2001: 4

Each box in figure 2 above represents a link involving a range of activities and inputs. However, simple value chains do not exist in real world, and are often linked with various other chains leading to the creation of extended value chains.

[14] Kaplinsky and Morris (2001) went further to include the function of disposal and recycling too in order to complete the chain.

The idea of value chain was popularized by Porter (1985) to highlight the importance of focusing on a firm's competitive advantage along a chain of value adding activities. According to him, the term value chain refers to the disaggregation of a firm into various strategically relevant activities. He further argues that a firm's value chain is not independent, rather it is embedded in a larger stream of activities comprising of supplier value chains at the upstream level and channel value chains at the downstream level to finally end at buyer value chains. The entire system of such interlinked value chains has been referred to as value system. Figure 2 below illustrates a typical value system.

Figure 2-III: A typical value system

Source: Adapted from Porter, 1985: 35.

As value chains (VCs) have become 'increasingly global in their geographical spread', scholars now call it GVCs (Kaplinsky 2013: 3).

Governance has been central to the GVC framework in explaining how the chain works to deliver final products and services combining inputs from various parties dispersed around the world. There are five types of governance mechanism that Gereffi and his co-researchers have observed along the GVCs. They are – a) market governance, b) modular governance, c) relational governance, d) captive governance, and e) hierarchical governance (Gereffi et al. 2005). In recent times, GVC governance theory has been extended to a cross-sectoral dimension amid the new reality of digital platform economy (Lee and Gereffi 2021).

Upgrading has been another key concept in GVC framework. It refers to shifts or movements of various actors reflecting upon their competitive positions in GVCs. This is a dynamic process, and an actor in a value chain may shift from one position to another along the chain over a period of time. Gereffi and Lee (2016) talk about two types of upgrading - a) economic upgrading and b) social upgrading[15]. There are four possibilities of economic upgrading along a value chain. They are: a) product upgrading, b) process upgrading, c) functional upgrading, and d) chain upgrading (Humphrey and Schmitz 2000). In recent times, GVC scholars have spoken about the fifth possibility, i.e.; the end market upgrading that refers to diversifying into new buyers, new geographic or product market (Li et al. 2019).

Some scholars point to the unequal distribution of value and income along the GVCs (Kaplinsky and Morris 2001; Gereffi 2014). Not everyone benefits from it equally, and not necessarily those who participate are always net gainers from GVCs. Benefits usually flow disproportionately more towards the MNEs from the developed world, and less towards the developing country actors. In this connection, Kaplinsky and Morris (2001: 21) refer to 'immiserising growth'[16] to describe a situation where an increase in overall economic activities with more output and more employment leads to falling economic returns. Many developing countries are unfortunately trapped in such a situation from where it is difficult to find a balance between the agenda of growth or employment and that of net returns.

To some scholars, GVC framework is still a methodology, not a theory yet (Dussel Peters 2008). GVC approach is more descriptive and holistic (Pananond et al. 2020). It mostly consists of case studies on various chains such as apparel, agro-food, automobile,

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[15] Social upgrading refers to the process of ensuring the rights and entitlements of workers along the GVCs in terms of sustainable pay, better working conditions, bargaining rights etc. (Barrientos et al. 2011). More recently, there has been some discussions in the upgrading literature regarding environmental upgrading that refers to the process of minimizing the impact of GVC activities on the environment (De Marchi et al. 2013).

[16] Bhagwati (1958) first introduced the idea of immiserising growth.

electronics etc., and there is very little theoretical work. Yeung and Coe (2014: 31) argue that GVC scholars failed to 'theorize competitive dynamics and evolutionary processes in multi-commodity or multi-industry production networks'. But the framework has received wide acceptance among various quarters such as academicians, businesses, policymakers, and multilateral development institutes due to its usefulness and simplicity. Pananond et al. (2020: 424) state that the GVC literature provides with a 'network to firm perspective on the role of MNEs' versus the IB literature's 'firm to network perspective on MNEs'. Humphrey (2014) admits that GVC theorists have engaged very little with IB literature despite various common elements. IB can, perhaps, lend its theoretical perspectives to GVC framework to theorize more and at the same time, perhaps, embrace the framework within IB domain in order to find answers to some of the unanswered questions of today.

2.10 The swollen middle/ the middle ground / the quasi internal

IB literature's main focus has traditionally been on internalization through FDI vis-a-vis market (Casson 2013), whereas GVC literature's main focus has been on externalization or outsourcing (Strange and Humphrey 2019) in the middle ground. Internalization theory does not say much about how externalized activities are managed whereas GVC theory pays little attention to why firms internalize activities and at what costs (Humphrey 2014). Internalization theory focuses solely on the MNEs whereas GVC theory focuses not only on lead firms but also include the suppliers in different tiers (Strange and Humphrey 2019). To IB theorists, effective control is achieved with ownership (Narula 2019), whereas GVC theory emphasizes that control may also be achieved without ownership (Strange and Humphrey 2019). It is to be noted that IB scholars in recent times have started recognizing the rapid rise of GVCs in the modern economy (Turkina and Van Assche 2018). Many mainstream IB scholars recently are taking keen interest in GVCs (Buckley et al. 2019), which is manifested by a growing number of research / review articles and even special issues on GVCs published in the top ranked academic journals dedicated to the field of IB (see e.g. Kano et al. 2020; McWilliam et al. 2020, Narula et al. 2019; Forsgren and Holm 2022; Asmussen et al. 2022).

IB is not only about internalization theory (Buckley and Casson 2019) but also about other theories such as location theory, studies of entry mode choices and various other issues related to the MNEs. The versions of internalization theory, as proposed by Buckley and Casson (1976); Rugman (1981); and Hennart (1982), are considered collectively as the early internalization theory. Later, new internalization theory has evolved with contributions from various scholars (Benito et al. 2009; Buckley 2009, 2010, 2011, 2012, 2014, 2016a & b; Grogaard and Verbeke 2012; Hennart 2009; Narula and Verbeke 2015; Rugman and Verbeke 1992, 2001, 2003a & b, 2004; Verbeke 2013; Verbeke and Kano 2015 and 2016). New internalization theory highlights the fact that the MNEs develop, transfer, augment, and recombine FSAs in order to remain competitive in the host countries (Kano 2018). Kano et al. (2022) state that new internalization theory suggests that MNEs choose efficient governance that economizes on both bounded rationality (Simon 1961) and bounded reliability (Kano and Verbeke 2015), and that also leads to an environment suitable for value creation (Verbeke and Kenworthy 2008). It is widely accepted that internalization theory has so far been able to explain satisfactorily why MNEs internalize, and on the contrary, GVC theory explains relatively better how lead MNEs externalize in the middle ground (Humphrey 2014; Strange and Humphrey 2019; Benito et al. 2019).

2.11 Welfare / development aspect of IB literature

IB literature is replete with various empirical studies trying to measure the impact of FDI on development. Since the 1990s, FDI has been the prime source of capital, especially for the developing countries, amidst the shrinking flows of aid and debt (Klein et al. 2001). Various studies have suggested that FDI has beneficial effects on host economies in the areas of technology spillover, linkages, trade, growth etc. (Kim et al. 2015). Despite theoretical suggestions of a range of potential spillovers from FDI, review of empirical studies indicates somewhat mixed results and does not provide a definitive answer (Gorg and Greenway 2004). Narula and Driffield (2012) point to the ambiguous empirical evidence regarding the impact of FDI on development especially in developing countries.

Wells (1998: 102) noted, 'Some FDI is good, almost certainly some is harmful'. Gorg and Strobl (2000) suggest that spillovers effect of MNEs on host country firms is very difficult to measure since the flow of knowledge leaves behind no mark to track. The extreme point of view is reflected in this way - 'FDI spillovers literature is, at best, exaggerated, at worst, unsubstantiated' (Gorg and Greenway 2001; Mortimore 2004. cited in Mortimore and Vergara 2006: 54). Blomstrom and Kokko (1996: 33) examined the existing empirical evidences related to the impact of FDI on host countries' development to argue that 'the exact nature of the impact of FDI varies between industries and countries, depending on country characteristics and the policy environment'.

Kosova (2010: 861) referred to the theory on technology diffusion which suggests that MNEs 'confer technology spillovers to domestic firms', and in support, she presented evidence from Czech Republic. A World Bank working paper suggested that spillovers from FDI helped to create a local entrepreneur-dominated RMG and textile industry in Bangladesh (Rhee and Belot 1989). The experience of New Zealand also suggests that the local firms have benefited as a result of FDI inflows into the country (Scott-Kennel 2006). FDI enterprises with more autonomy tend to establish more 'local ties' and thus generate more 'positive spillovers' in the host country (Giuliani and Macchi 2014: 499). FDI enterprises with local market orientation tend to generate more spillovers in the host country when compared to those with export orientation (Blomstrom and Kokko 2003).

Contrarily, several studies suggested that FDI did not have significant positive spillovers (Blomstrom and Kokko 2001). Lall (2003) observed that FDI in Lesotho could not generate spillover effects through local capability building and establishment of linkages. A study on 12 developing countries found no concrete evidence of technology transfer from FDI enterprises to their local competitors (Germidis 1977 cited in Aitken and Harrison 1999: 606). Similarly, India also witnessed FDI causing negative vertical spillovers and no horizontal spillovers in its manufacturing industry (Sasidharan 2006).

Meyer (2005: 2) critically analyzed the impact of FDI on emerging economies and suggested that, on average, the impact had been 'close to nil'. He highlighted various contrasting effects such as positive impact on export versus increases in import, positive

spillovers versus negative spillovers, employment generation versus adversely affecting local labor-intensive businesses etc. Aitken and Harrison (1999: 605) also noted that FDI in Venezuela had a positive impact on small-sized joint venture firms only, while having a negative impact on the productivity of other locally-owned firms. They further argued that the net impact of FDI on Venezuela's economy had been 'quite small'.

Scholars have been divided on the nature and extent of the most cited negative spillover effect of FDI, i.e.; crowding out of local firms. According to Kosova (2010), FDI temporarily crowds out local firms at the beginning, but in the long run domestic demand creation induced by foreign firms help local firms to survive and grow. Agosin and Machado (2005) noted that FDI has both crowding out and crowding in effects. Their findings suggested that FDI crowded out domestic firms in Latin America. Crowding in refers to a phenomenon where FDI generates a positive impact by enhancing the capacity and market share of the domestic firms (Narula and Dunning 2010). Dawar and Frost (1999: 1) suggested that FDI in emerging markets had often been viewed by local firms as a 'death sentence'. Balsvik and Haller (2011) examined the relationship between the mode of entry and impact of FDI in Norway, and noted that Greenfield FDI adversely affected local firms within the same industry.

MNEs, due to their possession of advanced technology and the resultant higher productivity, tend to recruit fewer workers in Greenfield enterprises and cut jobs in the acquired enterprises. They also sometimes prefer to bring employees from their home country (Lall 2003). Contrarily, Wells (1983) suggested that FDI from the south generally prefers local employees to reduce overhead costs. For MNEs with the motive of efficiency-seeking, it is perhaps more true. Wells further noted that FDI enterprises provide their local employees with the opportunity to acquire further skills and knowledge (ibid.). Javorcik (2015) referred to various empirical studies to suggest that the MNEs in developing countries tend to pay higher wages than their local rivals. The same paper has referred to two separate studies, one in Malaysia and the other in Czech Republic, noting that the foreign firms, in both cases, had provided more training to their workers when compared to domestic firms.

Literature review, particularly, in this section, reveals that it is imperative to undertake more research with a view to obtaining more conclusive findings on host countries'

developmental issues such as the impact of MNEs' higher productivity, potential of establishment of various kinds of linkages with the domestic firms, possibility of various kinds of spillovers, crowding in and out effects, changes in wages and other benefits for the host country labor force etc. Policy environment that may help in gaining more benefits from the MNEs' presence in the host countries is also another area of research.

Over the last two and half decades, many MNEs have transformed themselves into lead firms of GVCs that are spread across the world. Many supplier MNEs have joined those GVCs entering into various developing countries and they have been growing fast both in number as well as in size. It is time to study what is the impact of such supplier MNEs' presence in those host countries. Moreover, the lead firms at the helm of those GVCs have also been expanding in the developing world by connecting with both MNE and domestic supplier firms. How these lead firms are impacting the development of the domestic supplier firms of the developing countries should be another important agenda for investigation. Both the lead and supplier MNEs have important roles to play in development of the developing countries.

2.12 Finding the lacunae

TCE-based IB literature focused mainly on exploitation of FSAs by minimizing TC without incurring risks of knowledge dissipation due to opportunism, and ignored the value aspects such as potential for exploration of resources and capabilities beyond firm boundaries. Value-based (RBV and capabilities approach) IB literature filled the gaps to make IB theory more robust to be able to explain more fully why and how firms expand internationally[17]. Now, not only the cost aspect is covered, value aspect is taken care of too. Together, TCE and value-based IB literature now offer a strong theoretical foundation (Jacobides and Winter 2005) to explain more satisfactorily the entry mode

[17] Hennart (2015: 623) argues that the focus should be 'on the nature of the interdependence rather than on the transactors' to have a more general model of internalization that explains why MNEs can more efficiently do both, i.e.; exploit their existing FSAs, and at the same time, explore for new or complementary FSAs to create more value to be shared between the interdependent parties.

choices that are available to MNEs along the value chains. The above literature review reveals that various areas related to the middle ground (e.g.; NEM / externalization / quasi internalization / outsourcing) in between hierarchy and market have largely remained underexplored. Therefore, I focus on the swollen middle (Hennart 1993) or middle ground (Casson 2013) or quasi internal (Cantwell and Narula 2001; Narula and Santangelo 2009) in order to find some areas where further research in the field of IB may be undertaken.

Broadly, the MNEs along the labor-intensive GVCs remain at the core of this thesis. There are two types of MNEs in labor-intensive GVCs - a) lead MNEs, and b) supplier MNEs. IB literature is replete with studies on the conventional vertically integrated MNEs that tend to internalize in order to overcome market imperfections. Not much work has been done on the MNEs that operate in some labor-intensive GVCs either as lead firms or as supplier firms. We aim to address this gap in appropriate empirical contexts in Bangladesh from IB theoretical perspectives. Some of the lacunae that I could identify and intend to explore are presented below.

2.12.1 Lacuna 1: Supplier MNEs' superior productivity

Extant GVC literature has already indicated that many supplier firms in response to the business calls from their respective lead firms have crossed national boundaries (Humphrey 2003; Li 2007; Klein and Wocke 2007; Kawakami 2011) to grow as global suppliers (Sturgeon and Lester 2004). IB literature has not paid adequate attention to these supplier MNEs. The dominant notion of the IB literature that MNEs are more productive than the domestic firms has not been examined in the cases of such supplier MNEs especially in the labor-intensive GVCs. IB literature argues that MNEs become more productive than the domestic firms with the help of FSAs (Hymer 1960 and 1976; Dunning 1973; Caves 1974 and 1996) and the predominant focus, in this connection, has been on the use of some FSA_A (Madhok 2015). MNEs that operate in the technology or knowledge-intensive sectors possess FSA_A such as proprietary technology or brand that may drive superior productivity vis-a-vis the domestic firms. What happens to the supplier MNEs that operate in the labor-intensive sectors where there prevail weaknesses in FSA_A? Can such supplier MNEs become more productive than the

domestic supplier firms by overcoming the deficiencies in FSA_A? Extant IB literature remains silent on this research gap that exists. In absence of FSA_A, the role of FSA_T / FSA_R in driving superior productivity of the supplier MNEs has not yet been examined. We aim to do so in this thesis.

2.12.2 Lacuna 2: Supplier MNEs' competitiveness despite creating fewer linkages

MNEs in technology or knowledge-intensive sectors usually create fewer linkages than the domestic firms due to the requirement of using specialized input materials that are mostly unavailable locally (McAleese and McDonald 1978; Rodriguez -Clare 1996) and such MNEs rely on some FSA_A such as proprietary technology and brand in order to remain competitive in the host countries. What happens to the MNEs that operate in the labor-intensive sectors where specialized input materials are not required and the portfolios of FSAs of those MNEs reflect weaknesses in FSA_A? FSA theory discusses a number of possibilities to substitute one FSA for another. Cantwell and Narula (2001) suggest that FSA_T are sometimes considered as sufficient for the MNEs to remain competitive when there prevails weaknesses in FSA_A. Deficiencies in one class of FSA may be overcome by the strength in another (Collinson and Narula 2014; Narula 2012 and 2017; Madhok 2015). Lee et al. (2021) further argue that deficiencies in one particular class of FSAs can be overcome by the strength in FSAs from not only another class but also within the same class. These theoretical suggestions have never been put in an empirical context to examine how supplier MNEs operating in labor-intensive GVCs remain cost competitive in the host countries despite creating fewer linkages given the weaknesses in FSA_A?

2.12.3 Lacuna 3: Lead MNEs' control without ownership

The issue of control without ownership has not been investigated adequately in IB literature due to its sole focus on control and ownership in hierarchy versus no control in markets. Recent rise of outsourcing and offshoring due to globalization effects brings the issue of control without ownership to the fore. How MNEs achieve a workable control along their value chains without having ownership is an important question that

requires a satisfactory answer. Alcácer et al. (2016) argue that the traditional IB notion of control with ownership and no effective control without ownership has become obsolete in contemporary times especially in MNE dominated GVCs. MNEs now control much more activities than they own and traditional firm boundaries are no longer relevant for assessing MNEs' spheres of control. GVC literature has examined the matter of control without ownership and proposed a governance framework (Gereffi et al. 2005), but devoid of IB theories. Integration of IB theory with GVC framework can help to find a more suitable answer to this key question related to both IB and GVC literatures (Strange and Humphrey 2019; Benito et al. 2019).

How lead firms exert control over the suppliers along the GVCs in different tiers without having any equity ownership? Various ways such as contracts (UNCTAD 2011; Buckley and Casson 2019), management (Erramilli et al. 2002), trust (Benito et al. 2019), heavy dependence of the suppliers on the lead firms for resources, technology, and market power (UNCTAD 2011), relationship (Gereffi et al. 2005), modularization (MacDuffie 2013) etc. have already been discussed in the extant IB and GVC literature. Strange and Humphrey (2019) spoke about contracts, direct coordination, embedded coordination through product standards, and strategic alliances that help the lead firms to achieve control without ownership. Lead firms may have to use one or more of the above ways or even combine newer ways to exert effective control without ownership. That is not an easy task. According to Narula (2019), the capability to run efficient supplier networks within the GVCs is considered as one of the key FSAs of the lead firms. The role of such FSAs in exerting control without ownership along the GVCs in both immediate and peripheral tiers has not yet been examined in the extant literature. Further research attempts based on FSA theory need to clarify what kind of FSAs may help lead firms in achieving workable control over the suppliers.

Chapter Three: Changes in FSAs and Transaction Cost Considerations

3.1 Changing dynamics of FSAs:

RBV suggests that firms are heterogeneous in terms of resource bundling and firms possess unique sets of resources and capabilities on the basis of which they grow in competitive business scenarios. Borrowing from RBV, IB literature suggests that MNEs possess some FSAs on the basis of which they continue to grow beyond national boundaries. With the help of some of these FSAs, MNEs are often able to outperform domestic firms in various host countries. Amid changing business milieu, FSAs are not static, rather dynamic in nature. Let us shed some light on different kinds of FSAs within different contexts and how they may vary from firm to firm and keep changing in course of time. Let us also see how one set of FSAs becomes relevant and valuable while the other becomes irrelevant and of no value for a firm over a period of time. Narula (2012) shows how FSAs and L advantages of the MNEs evolve over time to turn some FSAs into non-proprietary L advantages for all firms, and at the same time, how some L advantages are turned into FSAs for some MNEs.

3.1.1 Location bound and non-location bound FSAs

FSAs can be both location bound and non-location bound (Rugman and Verbeke 1992; Rugman 1996). FSAs that cannot be transferred or moved elsewhere for productive use are termed in IB literature as location bound FSAs, while the FSAs that can be moved or transferred to other foreign locations for productive use are termed as non-location bound FSAs. Possession of some non-location bound FSAs are the key to multi-nationality of firms and without possessing some non-location bound FSAs, MNEs cannot take birth. MNEs are quite successful in transferring many of the FSAs in their portfolios in various host countries as may be necessary in order to create and capture value. Domestic firms, on the other hand, are usually deprived of possession of non-location bound FSAs, and therefore, have to remain limited to doing business in the domestic market only. Almost all of their important FSAs remain location bound, and hence, they cannot grow their businesses beyond their national boundaries.

Successful MNEs possess the capabilities to transform some location bound FSAs into non-location bound FSAs over time (Rugman and Verbeke 2001). For example, in the pharmaceutical industry, over a long period of time new drugs are developed in R&D

labs, then clinical trials are conducted, patents are registered, and approvals for commercialization are obtained from a particular country on case-to-case basis. If the new drug is commercialized only where the first approval for commercialization was obtained, it remains a location bound FSA for the firm. The same becomes a non-location bound FSA as soon as regulatory approvals for commercialization in a second or third country are obtained. For many new drugs, obtaining approval for commercialization in a second or third country never happens. Only a very few new drug formulae becomes non-location bound FSAs for pharmaceutical firms.

Similarly, FSAs of possessing certain skill sets within the firm remains location bound when the people having those skill sets are either unwilling or unable to move across locations. In that case, MNEs willing to invest in a particular host country may not be able to make those skill sets available for productive use in the proposed host country. For example, IT firms in Silicon Valley in the USA are known to have best in class skill sets by employing best talents from around that area. But when a firm from Silicon Valley wants to relocate some people elsewhere, those people may refuse to move. Or, for example, a software firm in India may want to move some of their software engineers to USA and may fail to do so due to strict visa requirements of USA applicable for Indian citizens. Recent technological advancements in the ICT sector are redefining the traditional boundaries between location bound and non-location bound FSAs (Brouthers et al. 2016). People with specific skill sets are not always required to move from one location to another, instead they can provide some training sessions along with practical demonstrations through some combinations of virtual realities and augmented realities (Porter and Heppelmann 2017). Available options of online briefing, monitoring and coordination activities through video calls from one location to another are making some of the location bound FSAs almost non-location bound FSAs.

MNEs with a portfolio of location bound FSAs that has transformed into non-location bound FSAs may proceed to exploit the same in various host countries wherever applicable for the purpose of further value creation and capture. Similarly, if domestic firms find some location bound FSAs in their portfolios have turned into some non-location bound FSAs may decide to cross the national boundaries for exploring further growth opportunities, and thus may become MNEs. Both MNEs and domestic firms

import FSAs, recombine them to create newer sets of FSAs and disperse the same through GVCs (Anand et al. 2021).

Non-location bound FSAs may also turn into location bound FSAs in course of time. One example is that sudden introduction of legislation or regulation may bar use of some knowledge or technology beyond some particular national boundaries. For instance, recently e-cigarette has been banned in India, Argentina, Brazil, Uruguay, Venezuela, Mexico, Panama, Colombia, Singapore, Malaysia, Indonesia, Thailand, Taiwan, Philippines, Vietnam, Cambodia, Brunei, Jordan, Lebanon, Oman, Qatar, Egypt (The Sun 2020) changing the status of FSA of possessing vaping technology from non-location bound to location bound. Vaping technology was on the rise globally and it was a non-location bound FSA for many tobacco majors worldwide. A report on e-cigarettes published by the World Health Organization (WHO 2019) escalated the situation. Sudden policy change in India and in many other countries of the world made its use limited to some locations including Europe and USA. Australia, Japan, Canada and few other countries implemented a restricted use policy instead of a complete ban of e-cigarettes. Under the circumstances, two kinds of scenarios may emerge for the firms having the FSA of possessing vaping technology - a) spread of the existing ban throughout rest of the world due to strong anti-tobacco campaigning and lobbying, and b) removal of the existing ban in India and other countries as a result of lobbying and some conclusive and positive research findings on the effects of vaping. The former scenario, if occurs, will make the FSA of possessing vaping technology extremely location bound and at one point in time turn into of no value to those who currently hold it. On the other hand, the latter scenario, if occurs, will make the current location bound FSA of possessing vaping technology non-location bound to reap huge rent from around the world.

3.1.2 FSAs and types of ownership of firms:

FSAs may vary on the basis of type of ownership of firms. When a firm is domestic, its FSAs are location bound and they are meant to generate rent out of the domestic market. As soon as it turns into an MNE, a different set of non-location bound FSAs is needed to be acquired in order to generate rent out of both home and international

markets. When an MNE and a domestic firm form a joint venture firm, a new set of FSAs emerge by blending both MNEs' and domestic partners' FSAs. The bundles of FSAs of MNEs are, therefore, different from that of joint venture and domestic types of firms.

IB literature suggests that FSAs of MNEs are, usually, superior to that of domestic firms and therefore, they are expected to be able to compete effectively against their domestic rivals in various host countries worldwide. This is true especially in a developed home versus developing host country setting. Market power with strong brand names, superior management know-how, economies of scale, R&D driven proprietary technologies etc. are some of the commonly cited FSAs of MNEs. Moreover, MNEs possess the advantage of common governance (Dunning 1993) that some scholars termed as recombinant advantages by which MNEs recombine or bundle newer internal or external resources with their existing FSAs (Kogut and Zander 1993; Rugman and Verbeke 2008; Henart 2009). In summary, there are primarily two types of FSAs that a multinational firm possesses - a) asset type FSAs (FSA_A), b) transaction type FSAs (FSA_T) (Dunning and Lundan 2008). A third type has also been discussed in the literature as recombinant type FSAs (FSA_R) (Verbeke 2009; Hennart 2009).

Domestic firms usually do not possess the abovementioned FSAs that MNEs do. Instead, FSAs of domestic firms are usually limited to relatively better knowledge of local market and institutions, flexible access to informal sector of the economy etc. Without having possession of any of the FSAs that MNEs possess, domestic firms continue to take advantage of their own FSAs as has been mentioned above. The above FSAs of the domestic firms often provide some sort of cost advantages to them over the MNEs. Especially, if the industry falls in a low-tech and labor-intensive type in the manufacturing sector, MNEs' ability to compete effectively against their local rivals reduces substantially. Nowadays, this difference has been reducing. In the recent past, a domestic firm could feel free to use inputs such as material and labor from either formal or informal sector of the economy as per convenience. Cost of inputs (such as labor and material) has been considerably lower in the informal sector due to lower wages even below the minimum wage in a host country, non-payment of tax, bare minimum infrastructure and overhead etc. Whereas, MNEs could not do so either due to the lack of adequate knowledge of the informal sector in the host country or due to its global

compliance requirements for maintaining the market reputation (Narula 2019). As a result, MNEs were in relatively disadvantageous position vis-a-vis domestic firms in terms of costs. MNEs had to hire people expensive, procure materials expensive, and at the same time remain socially and environmentally compliant by incurring substantial amount of additional costs that domestic firms did not have to.

Due to the growing pressure worldwide across all industries for ensuring social and environmental compliance requirements, it is no more considered to be just an option to remain compliant both socially and environmentally (Narula 2019). Growing awareness of the public about universal compliance requirements made it almost mandatory for domestic firms to ensure social and environmental compliance as well by bringing both types of firms at the same line in the race. There is no longer the benefit of being local in a host country having the ability to remain unwatched and continue to enjoy the benefits of low cost. As a result, domestic firms are gradually losing out the relative advantage of having access to informal non-compliant labor, material and logistics markets.

Moreover, formal institutions have been improving in many host countries around the world as part of government initiatives to ensure ease of doing business for firms. For example, MNEs coming from the developed world were facing difficulties in dealing with red tapes in bureaucracy and associated corrupt practices in most of the host countries in the developing world (Kuldosheva 2021). Nowadays, one stop registration service for new firms are coming up, web based solutions for expatriate work permits are available, online application and processing of import and export licensing etc. are on the offer in many emerging and developing countries. These facilities are erasing some of the differences that exist between an MNE and a domestic firm in being able to deal with the tasks related to formal institutions in a host country that were once considered to be relatively difficult for the MNEs. Therefore, the advantage of being local in the host country for a domestic firm has been reduced to a great extent, and will, perhaps, reduce further in the future as local institutions become more and more transparent. As MNEs are coming closer to the domestic firms in terms of their capabilities in dealing with local institutions in host countries in the developing world, domestic firms need to look for newer sets of FSAs to remain competitive in business.

The margin of bounded rationality for MNEs has been squeezed in recent times due to growing availability of various types of information in formal ways. A decade ago, bounded rationality of firms was suffering from asymmetric information availability which has been resolved to a great extent in recent times due to the era of information super highway and growing levels of transparency obtained with regards to formal institutions. Whom to rely on and whom not to in a host country - have always remained as the big time dilemma for MNEs. Due to the relative unfamiliarity with the host country situation, MNEs usually suffer a lot in terms of non-delivery and late delivery of products and services, hiring of under-skilled people by mistake, various kinds of opportunism etc. Growing online availability of credit reports, client reviews, company profiles and website etc. has, in recent times, reduced the risk of encountering these kind of experiences and thus squeezed the margin of bounded reliability for MNEs in host countries. In sum, the absolute supremacy of domestic firms in being familiar with the host country's ground level reality vis-a-vis MNEs has been reduced quite a lot in recent times.

In some cases, domestic firms are also catching up with the MNEs in terms of possessing and honing some of the non-location bound FSAs that the subsidiaries of MNEs put in productive use in host countries. This happens in two ways - a) unintended technology or knowledge transfer through horizontal spillovers, and b) intended technology or knowledge transfer through vertical linkages. The former mostly happens in the same industry in various ways such as employee migration from MNEs to domestic firms, social interaction, copying or imitating through demonstration etc., whereas the latter happens through vertical linkages especially in GVCs where supplier firms receive learning from lead firms directly. The spread of learning through both intended and unintended technology / knowledge transfer has been contributing to reduce the gap of FSAs that exist between MNEs and domestic firms. Hennart (2009) argued for changing the early IB literature's sole focus on MNEs' FSAs and to include the focus on local partners' FSAs.

3.1.3 FSAs along the GVCs:

FSAs of wholly integrated firms were different than that of firms doing business by adopting specialization. Earlier, MNEs were required to possess portfolios of wholesome FSAs in order to do business worldwide. Amid proliferation of GVCs, FSAs of firms are built within the areas of some particular specializations. When we look at firms along the GVCs, FSAs of firms differ on the basis of respective positions of firms in GVCs. Lead firms' FSAs are different from that of supplier firms in different tiers. Some FSAs are suitable for the production function while some are suitable for the upstream and downstream. For example, in a buyer driven GVC, a lead firm usually keeps control of the upstream and / or downstream functions, while the supplier firms in different tiers mostly operate in the production function. Therefore, FSAs of lead firms at the upstream are resources and capabilities related to design and development, R&D etc. At the downstream, FSAs of lead firms are resources and capabilities related to market power with strong brand names and retailing networks. FSAs of supplier firms in different tiers have been centered around the production function in most cases. FSAs of tier 1 supplier firms are also different from that of tier 2 and 3 supplier firms. Tier 1 supplier firms taking up the role of OEM suppliers may need some recombinant type of FSAs to be able to deal with various suppliers in the lower tiers. Through upgrading efforts, supplier firms may strengthen their existing sets of FSAs or acquire new sets of FSAs within and beyond the existing functions, and may at the same time divest some of their previously strong FSAs.

Some supplier firms go beyond the production function by undertaking functional upgrading efforts either at the upstream or at the downstream or at both subject to lead firms' approval, of course. In most cases, lead firms obstruct supplier firms' functional upgrading efforts. But a number of lead firms do not strictly bar their supplier firms' upgrading efforts at the upstream. Therefore, many supplier firms endeavor into the area of design and development at the upstream and upgrade as ODM supplier firms. Usually, FSA of possessing the resources and capabilities related to design and development lead to higher level of productivity of supplier firms in buyer driven GVCs. A few supplier firms upgrade successfully at the downstream despite lead firms' strong obstructions. In computer and electronics industry, there are many examples of such

firms. In apparel industry, only a few names can be cited. Supplier firms upgraded at the downstream possess FSAs related to having brand names and retailing networks.

Supplier firms in tier 1, having very strong FSAs related to the production function, nowadays, are growing their businesses beyond national boundaries in response to business calls from their respective lead firms (Humphrey 2003; Li 2007; Klein and Wocke 2007). Lead firms also prefer to have their best in class first tier suppliers to go to multiple low-cost locations for the purpose of their ongoing supplier roster consolidation efforts. These relatively new multinational supplier firms along the GVCs have stronger ties with their respective lead firms (perhaps as the toppers in the lead firms' roster of suppliers), have the experience of managing operation in more than one country unlike the domestic firms, and were very successful in their home country operation with higher levels of productivity (Sturgeon and Lester 2004). With strong FSAs in the portfolio, these multinational supplier firms expect to outperform their domestic rivals along the respective GVCs. Some of them have had a very good track record of upgrading in terms of process, product, and function at the upstream in their home countries. Therefore, in terms of productivity or efficiency, these firms are proven as star performers to the respective lead firms. Some supplier firms in tier 2 and 3 are also moving beyond their national boundaries obtaining necessary nomination or endorsement of the respective lead firms to sell their products or services to the first tier supplier firms (Narula 2019). FSAs of supplier firms in tier 2 and 3 mostly remain limited to the production function. Some go beyond the production function by upgrading functionally at the upstream. For example, multinational garment accessory supplier firms in the apparel industry often invest heavily in R&D efforts in order to remain ahead of others. Their FSAs are in both - a) production function, and b) R&D and design and development functions at the upstream.

Not all MNEs, but only a few that have evolved into lead firms at the helm of today's GVCs possess the most valuable FSA of orchestrating their respective GVCs (Narula 2019). Supplier firms in different tiers are deprived of this FSA that only lead firms possess. Supplier firms participating in GVCs undergo training, knowledge sharing sessions and day-to-day interactions with the lead firms on regular basis to get the opportunity of learning and through that process some supplier firms develop newer

FSAs. For example, an apparel supplier firm working with leading buyers often receives the encouragement and training to develop certain capabilities within the sphere of the production function and in some cases beyond the production function. By undertaking process, product and functional upgrading efforts, supplier firms acquire new sets of FSAs and the lead firms, in turn, may give up some of their existing FSAs. For example, in M&S's apparel GVC, with its active consent and encouragement, some supplier firms are developing design related resources and capabilities in order to upgrade functionally at the upstream. Design and development capability was once considered to be the core FSA of M&S in the apparel industry, and now it is gradually becoming FSA of M&S's first tier supplier firms. M&S is willing to divest this FSA as soon as its first tier supplier firms are able to take over the responsibility of providing design and development services to M&S. The lead firm M&S wants to focus more on strengthening its FSA further at the downstream.

It is to be noted that the relative strengths of FSAs vary between firms in the same industry. It is true across all functions in the value chain. For example, FSAs of supplier firms in the apparel industry operating in the production function are not necessarily equal to each other when looked at in terms of strength. Therefore, we see that productivity figures of these firms vary despite the fact that all of these firms operate within the same function and within the same industry. Similarly, the relative strengths of FSAs of the lead firms at the upstream in the apparel industry are not equal to each other. In similar line, the relative strengths of FSAs of lead firms at the downstream in the apparel industry are dissimilar to each other. Over time, these relative strengths may change from lower to higher position or vice versa.

In sum, FSAs of firms are evolving over time. Some are divested completely by the firms, while newer ones are acquired or developed in order to keep pace with the time. Some strong FSAs of the firm may lose relevance or value at some point in time, while some weaker ones in the firm's portfolio may suddenly become relevant and valuable in the changed business milieu. Supplier firms used to be of mostly domestic origins once in the past, and hence, their FSAs were mostly limited to having local knowledge about the market, institutions, and also knowledge of how to access the informal economy for achieving lower labor and logistics costs (Narula 2019). They were simply expected to

outperform the MNEs in those regards in host countries. Nowadays, the supplier firms have been undertaking newer and larger roles even outside their national boundaries (Humphrey 2003; Li 2007; Klein and Wocke 2007; Kawakami 2011; Sturgeon and Lester 2004; Sturgeon 2013), and therefore, the nature of their FSAs has also changed. The differences between the FSAs of firms on the basis of ownership and respective positions along the GVCs are not constant, rather subject to continuous changes. Firms strive to allocate resources to further strengthen some FSAs or acquire new ones in the existing function or in other functions to remain competitive in businesses. In doing so, sometimes they forego some existing FSAs to free up resources in order to reinvest in FSAs in priority areas. Finally, digitalization of recent times not only brings down the overall cost of transferring FSAs but also brings changes to those FSAs (Strange and Zucchella 2017).

3.2 Some changes in TCE considerations:

Transaction costs have been reduced due to the regime of enhanced patent rights and the emergence of new management system such as Total Quality Management (Kano 2018). TCE considerations for many inter firm relationships have already changed due to the ease of day-to-day communications (Chen and Kamal 2016) that have come with the advancements in the conventional ICT sector (Kano 2018). Digital technologies such as big data and analytics, internet of things (IoT), robotics, 3D printing, cyber security, cloud, augmented reality, horizontal and vertical system integration, simulation etc. have also made some progresses (Rüβmann et al. 2015) that may bring about substantial changes in the business milieu. Co-ordination and monitoring activities have become cheaper and easier due to the newer forms and methods of communications (Alcacer et al. 2016; Brouthers et al. 2016). Such methods include emails, conference calls, video calls along with presentations and conversations over popular apps such as messenger, skype, viber, whatsapp etc. (Manning et al. 2015; Kano 2018). Cost of broadband internet and telephone services have become very cheap and in case of using apps, it is mostly free. Availability of 4G mobile telephone services almost everywhere around the world made it possible to communicate with someone in a remote location and resolve any urgent issues instantly. Some firms are even using CCTV surveillance

system installed through broadband internet connection in order to monitor activities in a subsidiary's or supplier's location on a real time basis. Nowadays, day-to-day meetings no longer require physical movement of people from one place to another. Executives travelling from one place to another for face-to-face interaction are not only difficult but also very expensive (Tallman and Chachar 2011). A lot of travelling costs has been saved - airfare, rent for hotel rooms, food, and other exigencies etc. are reduced substantially. Expensive executive time for travelling far away round the year has also been saved to a great extent. Hard copies of numerous letters every week, company profiles, pamphlets, brochures, annual reports, technical drawings and layouts, product catalogues, work orders, invoices, signed contracts etc. are no longer required to be exchanged between firms internally or externally. Almost all are done electronically nowadays saving a lot of costs in this connection. While coordinating with and monitoring of various internal or external parties, a firm can do so without printing a single page or paying a single trip to a host country unless some kind of urgency emerges.

Search costs have already reduced a lot due to increased uses of information technology (Lund et al. 2019) and growing level of transparencies achieved in terms of institutions in host countries. Throughout the world, the spread of e-governance has been making a lot of information readily available to the firms at a distance (Kuldosheva 2021). One stop service in various government offices has been implemented that has substantially reduced the search cost for firms (OECD 2020). The information such as who can do what in a host country can be found on the internet space through a few minutes' google search. Now, it is quite easy to identify the top HR firms in a host country through online search to get help in finding reasonably cheaper labor. Porter and Heppelmann (2017) suggest that certain technologies have the potential to train firms' employees remotely. Similarly, accountants can also be identified and contacted the same way. Who are the best suppliers of materials can also be checked online quite easily without spending a dollar. And credit reports and references can also be obtained, nowadays, from the host country or other countries worldwide by sending a few emails or just by looking at some online reviews on their respective websites. A growing number of service providers and supplier firms now maintain professionally developed and managed websites. Earlier, all of these were quite difficult. For example, for recruiting the required manpower and

sourcing of materials, expensive newspaper advertisements had to be placed in the host country and a number of executives had to visit the host country in order to meet the potential employees, service providers or suppliers to confirm suitability in light of required specifications. Therefore, MNEs' TCE considerations with regards to search costs have been substantially reduced in recent times.

Advancements in major digital technologies such as big data and analytics, robotics, internet of things (IoT), 3D printing etc. likely to substantially influence various international business activities leading to the emergence of new business models (Strange and Zucchella 2017). Both MNEs and domestic firms need to reconsider their future portfolios of FSAs that they need to build on in order to remain competitive against one another and the resultant TCE considerations in the light of ongoing and upcoming changes.

Chapter 4: Paper 1 on Superior productivity of supplier MNEs in labor-intensive global value chains: Examining role of FSAs

Superior productivity of supplier multinational enterprises in labor-intensive global value chains: Examining role of firm specific assets

Abstract:

Every multinational enterprise (MNE) enters the host countries with a threshold of firm specific assets (FSAs) comprising of different proportions of asset type FSAs (FSA_A), transaction type FSAs (FSA_T), and recombinant type FSAs (FSA_R). In technology or knowledge-intensive sectors, MNEs rely on FSA_A such as proprietary technology or brand to drive superior productivity relative to the domestic firms. What happens to supplier MNEs (SMNEs) operating in the labor-intensive global value chains (GVCs) where the portfolios of FSAs reflect weaknesses in FSA_A? Can such SMNEs become more productive than the domestic supplier firms? Using a firm level dataset collected from labor-intensive export processing zones of Bangladesh, we examine the role of FSA_T and/or FSA_R in driving superior productivity of foreign-owned SMNEs vis-a-vis the domestic supplier firms. We find that the SMNEs that can derive advantage(s) from FSA_T and/or FSA_R based on the degree of multinationality may become more productive than the domestic supplier firms.

4.1 Introduction:

The concept of firm specific asset (FSA) remains 'at the core' of international business (IB) theory (Narula 2017: 215). Primarily, two types of FSA are there - a) asset type FSA (hereinafter referred to as FSA_A), and b) transaction type FSA (hereinafter referred to as FSA_T) (Dunning 1988; Cantwell and Narula 2001; Dunning and Lundan 2008). A third type is known as recombinant type FSA (hereinafter referred to as FSA_R) (Verbeke 2009; Hennart 2009) [18]. It has been argued in IB literature that multinational enterprises (MNEs) may become more productive than the domestic firms with the help of FSAs (Hymer 1960, 1976; Dunning 1973; Caves 1974, 1996). The extant literature, however,

[18] It is not yet universally resolved whether to expand the two-way classification of FSAs to accommodate FSA_R as a separate category (Narula 2017). Instead of viewing FSA_R as either FSA_A or FSA_T, some scholars consider FSA_R as 'a higher order FSA' having one leg on FSA_A and the other on FSA_T (Narula 2014; Verbeke and Yuan 2010).

predominantly focuses on FSA_A (Madhok 2015). The MNEs that operate in the technology or knowledge-intensive sectors often possess FSA_A such as proprietary technology or brand that may drive superior productivity vis-a-vis the domestic firms. An important gap in the literature is that there is hardly any discussion on what happens to the MNEs that operate in the labor-intensive sectors where weaknesses in FSA_A prevail. Can such MNEs become more productive than the domestic firms by overcoming the deficiencies in FSA_A?

In this research, we examine the role of FSA_T and / or FSA_R in driving superior MNE productivity in the context of the labor-intensive global value chains (GVCs). By doing so, we try to explain the growing trend of internationalization of supplier firms that mostly operate in the labor-intensive functions along the GVCs. Many supplier firms along the GVCs are, nowadays, following their lead firms to various offshore locations (Humphrey 2003; Li 2007; Klein and Wocke 2007; Kawakami 2011; Pavlinek and Žižalová 2016) to grow as global suppliers (Sturgeon and Lester 2004). We term these supplier firms as supplier MNEs (SMNEs)[19]. These SMNEs increasingly compete against the domestic supplier firms mostly in electronics, automobile and apparel GVCs (Sturgeon 2013). They play a critical role in economic and industrial development, especially, in the developing economies (Azme and Nadvi 2014). The extant literature on productivity has paid little attention to the SMNEs that mostly operate in the labor-intensive sectors. To remedy this gap, we examine productivity of such SMNEs within GVC operations in the developing countries.

We reinforce the argument that FSAs play the key role in driving superior productivity of MNEs irrespective of sectors. Drawing on Collinson and Narula (2014), we argue that all MNEs possess a certain threshold of FSAs that comprise of different proportions of FSA_A, FSA_T, and FSA_R to compete successfully in the host countries. In the technology and knowledge-intensive sectors, such threshold may consist of strong FSA_A such as proprietary technology or brand, whereas the same in the labor-intensive GVCs may reflect weaknesses in FSA_A. As a result, it is possible that the MNEs in the labor-intensive

[19] All SMNEs that have been considered in this research are foreign-owned, none is domestically owned.

GVCs may rely more on FSA_T and/or FSA_R to remain competitive. The extant literature on FSAs discusses a few of such possibilities. For example, Cantwell and Narula (2001) argue that FSA_T are sometimes sufficient for an MNE to remain competitive in the host countries. Going forward, a few scholars suggest that MNEs may overcome the weakness in one class of FSAs by the strength in another (Collinson and Narula 2014; Narula 2012, 2017; Madhok 2015). Furthermore, Lee et al. (2021) argue that FSA_R may complement and substitute more FSA_A in case of absent / weak FSA_T. Building on the above, we examine whether the MNEs in the labor-intensive sectors may rely on FSA_T and/or FSA_R to overcome the deficiencies in FSA_A and provide some empirical evidence in support of the above theoretical suggestions. We argue that the SMNEs that can derive advantage(s) from FSA_T and/or FSA_R based on the degree of multinationality[20] may maintain the proper balance in the portfolio of FSAs, which is essential to drive superior productivity relative to the domestic supplier firms.

We conduct empirical analysis based on firm level data collected from the eight export processing zones (EPZ) in Bangladesh. A total of 464 firms operate with a mix of SMNEs and domestic supplier firms (including supplier joint ventures) that operate in these EPZs. These supplier firms operate primarily in the labor-intensive manufacturing function along the GVCs, thus providing an ideal setting to conduct our research on MNE productivity in the labor-intensive sectors.

The remainder of the paper is structured as follows. In section 4.2, we present a brief literature review touching upon the theoretical framework and the empirical context. In section 4.3, we develop our hypotheses. In section 4.4, we discuss the data and report the summary statistics. In section 4.5, we present the empirical model for a multivariate analysis and report the results along with those from robustness checks. In section 4.6, we provide a discussion of the results and in section 4.7, we highlight theoretical and policy implications. In section 4.8, we conclude.

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[20] The term 'degree of multinationality' refers to the measures of a firm's expansion beyond the home country (Hennart 2011).

4.2 Literature Review:

In this section, we discuss the relevant concepts and ideas that may be necessary for the purpose of developing our hypotheses. The theoretical framework for this paper is the FSA theory that has been discussed mainly touching upon the classification of FSAs. An overview of FSA_A versus FSA_T versus FSA_R, location-bound versus non-location-bound FSAs, and MNE level versus subsidiary level FSAs has been presented initially to set the ground for our research. Then, the empirical context has been discussed along with a brief review of the literature on productivity to gain an updated account of what has, so far, been done.

4.2.1 Theoretical context: FSA theory

Rugman and Verbeke (2002: 777) argue that the concept of FSAs is 'the international version of a competence'. MNEs possess various types of FSAs that may lead to creating advantage(s) over the domestic firms in the host countries (Narula and Driffield 2012). MNEs' ability to remain competitive in various host countries is largely dependent on the acquisition, maintenance and development of their FSAs (Narula 2012). Extant literature highlights the overbearing importance of FSAs in explaining why MNEs usually outcompete their domestic rivals in the host countries (Narula 2012, 2015, 2017; Cuervo-Cazurra 2012; Madhok and Keyhani 2012).

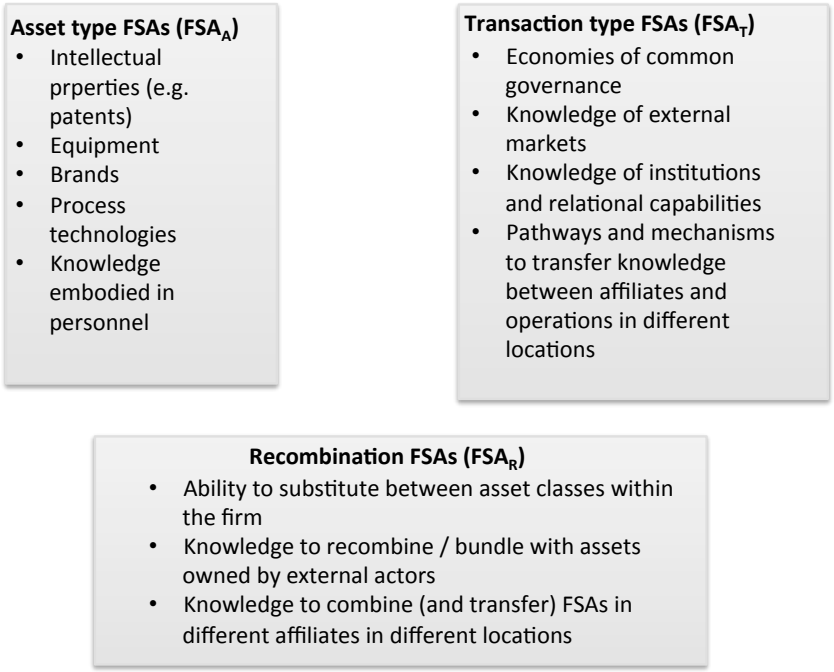
4.2.1.1 Classification of FSAs

FSA_A refers to tangible property or equipment, intellectual property in various forms, privileged access to tangible or intangible resources including the knowledge possessed by the employees etc. (Dunning 1988; Cantwell and Narula 2001; Lundan 2009; Narula 2017). FSA_T refers to organizational capabilities that are used by the MNEs to efficiently control and organize various activities 'to generate economic rents from FSA_A' (Lee et al. 2021: 2). A major sub-set of FSA_T represents the economies of common governance that the MNEs achieve by dint of multinationality *per se* (Dunning 1988; Lundan 2009). Another sub-set of FSA_T is the MNEs' capability to transfer intra-firm knowledge across borders (Kogut and Zander 1993). FSA_R refers to those that emerge when the MNEs engage in rejuvenating their extant FSAs by recombining with the resources available in

the host countries such as accessible L advantages or resources held by other firms (Verbeke 2009, 2013; Hennart 2009; Narula 2014; Narula and Verbeke 2015). Scholars are yet to reach a consensus on whether to expand the two-way classification of FSAs to accommodate FSA_R as a separate category (Narula 2017). Instead of viewing FSA_R as either FSA_A or FSA_T, some instead consider FSA_R as 'a higher order FSA' having one leg on FSA_A and the other on FSA_T (Narula 2014; Verbeke and Yuan 2010).

Figure 1 below illustrates the classification of FSAs:

Figure 4-I: Classification of FSAs



Source: Based on Narula (2017)

Depending on transferability, some FSAs are location-bound while others are non-location-bound (Rugman and Verbeke 1992; Rugman 1996). MNEs have the ability to transfer their non-location-bound FSAs across borders and exploit the same more effectively and efficiently in various host countries within the MNE network than through external market mechanisms (Gupta and Govindarajan 2000). The MNE is, therefore, viewed as an internal market that transcends the national boundaries with

the purpose of efficiently transferring, deploying, augmenting and exploiting the FSAs (Verbeke and Greidanus 2009). Some successful MNEs possess the capabilities to transform location-bound FSAs into the non-location-bound ones, which also belong to FSA_T (Rugman and Verbeke 2001). Figure 2 below illustrates the location-bound FSA_A and FSA_T and non-location-bound FSA_A and FSA_T respectively:

Figure 4-II: Asset portfolio of MNEs

	Location-bound	Non-location-bound
FSA_T	**-Management of stand-alone resources linked to location advantages such as a network of retail locations leading to a dominant market share (Verbeke 2009).** **- Managerial know-how of local business activities such as knowledge of best local practices, markets, and institutions (Collinson and Narula 2014).**	**-Managerial capability to control and coordinate international activities (both intra and inter-firm transactions)(Dunning and Rugman 1985; Rugman 1981).** **-Organizational capability to transfer intra-firm knowledge across borders (Kogut and Zander 1993).** **-Transforming location-bound FSAs into non-location-bound FSAs (Rugman and Verbeke 2001).**
FSA_A	The proprietary ownership of or exclusive privileged access to specific (income generating) assets that cannot be easily transferred and exploited across national borders (Rugman and Verbeke 1992) such as -physical assets -local brands -local distribution networks	The proprietary ownership of or exclusive privileged access to specific (income generating) assets that can be exploited globally (Dunning 1988) such as -technology -patents -international brands -trademarks

Source: Lee et al. (2021)

The dominant idea until the 1990s was that the FSAs are created only in the home country to be transferred to the subsidiaries in various host countries for exploitation (Rugman 1980, 1981). This idea of viewing the individual subsidiaries only as the implementers has been changed later to highlight the role of the individual subsidiaries side by side the parent MNEs in creation, deployment, exploitation, and augmentation of the FSAs. Subsidiaries may also create important knowledge that can be considered as the sources of both location-bound and non-location-bound FSAs. Rugman and Verbeke

(2001) highlight how development and diffusion of FSAs takes place within the MNE network, and how the parent and subsidiaries interact in the process.

4.2.2 Empirical context: SMNEs in the labor-intensive sectors

Mudambi (2008) identifies three stages of GVC activities such as upstream, production and downstream. According to Gereffi (2014), SMNEs mainly operate in the production stage, whereas the lead firms are more focused on the high value-added upstream and downstream stages of the GVCs. Some SMNEs have been able to maintain extensive presence around the globe (Sturgeon and Lester 2004). The proliferation of these SMNEs is particularly noticeable in the labor-intensive GVCs where weaknesses in FSA_A are prevalent. In a setting of standardized machinery/ equipment, production processes and low skilled labor force, such SMNEs get limited opportunities to develop and/or possess strong FSA_A. Very little is known about these SMNEs, particularly, about the nature of their productivity differential vis-à-vis the domestic supplier firms. This paper aims to address this gap.

4.2.3 Literature on MNE productivity

Various empirical studies in the extant productivity literature suggest that the MNEs are on average more productive than the domestic firms (Willmore 1986; Blomstrom and Kokko 1998; Blomstrom and Sjoholm 1999; De Backer 2002; Bellak and Pfaffermayr 2002; De Backer and Sleuwaegen 2005; Sasidharan 2006; Criscuolo and Martin 2009; Arnold and Javorcik 2009; Tang and Wang 2020). The dominant theoretical argument behind this finding is that the MNEs transfer and exploit superior sets of FSAs that they possess which gives rise to superior productivity relative to the domestic firms (Dunning 1973; Caves 1974 and 1996; Koutsoyiannis 1982; Tang and Wang 2020). The focus of the FSA driven superior MNE productivity argument has been on FSA_A, which is largely applicable to the MNEs that operate in the technology or knowledge-intensive sectors. What happens to the productivity of the MNEs when they operate in the labor-intensive GVCs remains largely underexplored.

Our main objective is to examine the role of FSA_T and / or FSA_R in driving superior productivity of such SMNEs, which typically operate in the labor-intensive GVCs. In what

follows, we develop a few hypotheses in this regard, and subsequently test these hypotheses empirically. To set the ground for our main analysis, we, first, ascertain whether SMNEs are, in general, more productive than the domestic supplier firms, or at least, a particular group of SMNEs are there that are more productive than the domestic supplier firms.

4.3 Hypotheses Development:

In this section, we develop a number of hypotheses concerning the role of FSAs in determining the competitiveness of SMNEs that mostly operate in the labor-intensive GVCs. In doing so, we use the FSA theory as a theoretical framework in an empirical setting where SMNEs compete against the domestic supplier firms. How do these SMNEs fare against their domestic rivals in the pretext of inadequacy of FSA_A in their overall portfolios of FSAs? FSAs are representative of SMNEs' unique sets of resources and capabilities based on which they may build competitive advantages to outcompete their domestic rivals. Productivity is taken as a proxy for firms' competitiveness relative to the domestic supplier firms.

4.3.1 Productivity of SMNEs: two plausible scenarios

Let us consider productivity of SMNEs on a continuum - e.g.; less than, or at similar level of, or more than the domestic supplier firms. One may ask whether it is, at all, possible for the SMNEs to sustain operations by being less productive than the domestic supplier firms. Intuitively, the SMNEs that are less productive than the domestic supplier firms are expected to experience natural demise in the host countries. Such SMNEs will essentially fail to compete against their domestic rivals. Therefore, we eliminate the possibility that the SMNEs in the labor-intensive sectors are less productive than the domestic supplier firms.

In any mature industry or sector, MNEs that enter any host country are expected to be productive at the level of the domestic firms at the very least. We, therefore, deduce that there are only two plausible scenarios - a) SMNEs are at the similar level of productivity relative to the domestic supplier firms, or b) SMNEs are more productive than the domestic supplier firms.

By bringing in FSA conversation into perspective, we claim that adequacy (shortfall) in FSAs determines whether or not an SMNE will be more productive than the domestic supplier firms. Some of the SMNEs may possess FSAs that are derived from ordinary resources and capabilities that 'often exhibit commonalities across firms' (Lee et al. 2021: 3). Such SMNEs fail to use those FSAs as the source of sustainable competitive advantages and are likely to remain at par with the domestic supplier firms in terms of productivity. Whereas, a few SMNEs may be there that are able to derive sustainable competitive advantage(s) from their extant portfolios of FSAs may remain competitive by being more productive than the domestic supplier firms.

Therefore, we argue that the SMNEs in the labor-intensive sectors are, at least, similar to the domestic supplier firms in terms of productivity.

The above arguments lead to our first hypothesis:

H1: SMNEs in the labor-intensive sectors are, at least, productive at the level of the domestic supplier firms.

4.3.2 SMNEs from farther distances need to be more productive

In any host country, some SMNEs come from home countries located at farther distances whereas some come from relatively closer distances. According to Ghemawat (2001), four dimensions of distance such as geographic, administrative, cultural, and economic may affect MNEs' strategies as well as performance[21]. For simplicity sake, we consider only geographic distance here. Rugman and Verbeke (2004) show that the MNEs operate more regionally than globally. Although, the MNEs tend to establish subsidiaries in the neighboring countries, some MNEs in the labor-intensive sectors may have incentives to establish subsidiaries in more distant host countries. Little is known about the relationship between MNE productivity and distance between the home and the host

[21] Cultural distance refers to differences in language, social norms, and religion; administrative distance to differences in public policy, political associations etc.; geographic distance to the physical distance; and economic distance to differences in consumer income, quality of natural resources, labor force, infrastructure etc. (Ghemawat 2001).

countries (Lu et al. 2020), especially, in the labor-intensive sectors. These authors empirically find evidence that distance is positively associated with MNE productivity. As technology transfers and other forms of communications become more difficult in case of MNEs from farther distances, only highly productive MNEs are able to survive in the remotely located host countries.

Despite recognizing the disadvantages that the MNEs face in the host countries, IB researchers' predominant focus has, so far, been on the advantages derived from the FSAs that the MNEs enjoy relative to the domestic firms. The approach has been such that the MNEs do not need to worry about the disadvantages since they possess superior sets of FSAs. However, Benito et al. (2003) suggest that distance between the home and host countries negatively affects the transfer of FSAs from MNEs' headquarters to the respective subsidiaries. Distance is considered a barrier not only for the transfer of FSAs from MNEs' headquarters to individual subsidiaries but also for the subsequent exploitation and adaptation of the same by the MNEs' subsidiaries (Bjorkman et al. 2007; Ghemawat 2001). A greater level of distance, in general, raises the chances of coordination problems between the headquarters and subsidiaries (Ceci and Prencipe 2013; Verbeke and Yuan 2005).

Keller and Yeaple (2013) argue that transportation costs rise with geographic distance in the technology or knowledge-intensive sectors where embodied knowledge transfers in the form of traded intermediates take place. Whereas MNEs in the labor-intensive sectors directly communicate disembodied knowledge where only communication costs arise, no transportation costs are there. Nevertheless, MNEs in the labor-intensive sectors that come from farther distances are likely to face higher costs to acquire local knowledge[22], may find it more difficult to achieve legitimacy, and encounter relatively higher discriminatory attitudes shown by the various stakeholders in the host countries. This is also the position of Kostova & Zaheer (1999).

[22] Local knowledge refers to the knowledge that is specifically related to the host countries such as language, culture, politics, society, economy etc. (Inkpen and Beamish 1997; Makino and Delios 1996).

Despite various disadvantages, greater distance between the home and host countries may come with opportunities for local adaptation by the subsidiaries that may not be possible in the host countries that are proximate to the MNEs' headquarters (Dellestrand and Kappen 2012). MNEs in relatively distant host countries may adapt locally leading to the creation of some powerful FSA_R at the subsidiary level. Thus, adaptive subsidiaries in relatively distant host countries may succeed in pursuing some opportunities that may benefit the MNE as a whole (Rugman and Verbeke 2001; Zhu et al. 2015). Verbeke and Yuan (2016) find that greater distance in some cases may help MNEs create stronger FSAs at the subsidiary level.

However, the dominant view in the extant literature remains that greater distance usually affects MNEs' FSAs at the subsidiary level and hence, the performance of the MNEs' subsidiaries (Hutzschenreuter et al. 2014; Nachum and Zaheer 2005). Therefore, we argue that the foreign-owned SMNEs coming from farther distances with a number of disadvantages in the host countries must be more productive than the domestic supplier firms in order to remain competitive in the host countries.

Thus, the empirically testable hypothesis that we derive from the above is as follows:

H2: SMNEs coming from farther distances are likely to be more productive than the domestic supplier firms.

4.3.3 FSA_T and / or FSA_R driving superior SMNE productivity

This sub-section deals with the key question, i.e.; which type of FSAs may enable the SMNEs become more productive than the domestic supplier firms in the labor-intensive sectors? The portfolio of FSAs for the SMNEs in the labor-intensive sectors comprise of relatively weak FSA_A. Therefore, the SMNEs in such sectors tend to possess relatively stronger FSA_T and may as well possess some FSA_R to be able to overcome the weaknesses in FSA_A.

Extant literature on FSAs suggests that FSA_T for an SMNE may be considered as sufficient when it can generate an advantage by achieving economies of common governance (Dunning 1988, Dunning and Lundan 2008), and / or by diffusing knowledge across borders (Kogut and Zander 1993), and / or by transforming location-

bound FSAs into the non-location-bound ones (Rugman and Verbeke 2001). By achieving economies of common governance, MNEs not only excel in internalization but also in externalization in the form of relationship based contracting (Narula et al. 2019). Not all SMNEs are able to achieve economies of common governance by making use of their FSA_T, only a few can. The younger MNES are usually deficient in FSA_T due to which they find it difficult to achieve economies of common governance (Cuervo-Cazurra 2012; Narula 2012, 2014), while the mature MNEs are more likely to achieve economies of common governance.

Out of various types of resources that the MNEs may posses, the intangible knowledge base is considered to be the prime source of competitive advantages (Dierickx and Cool 1989; Lippman and Rumelt 1982). The MNEs that are able to transfer and exploit intra-firm knowledge across borders more efficiently may gain advantage(s) over their rivals (Kogut and Zander 1993; Gupta and Govindarajan 2000). We argue that not all SMNEs are able to gain an advantage from their FSA_T while diffusing such knowledge across borders. Perhaps, a few can.

Conventionally, non-location-bound FSAs are considered essential for the MNEs (Verbeke 2009). Sometimes transforming some of the location-bound FSAs into non-location-bound FSAs might be required to improve upon the MNEs' competitiveness. Rugman and Verbeke (2001) illustrate how the MNEs may transform some of their location-bound FSAs into non-location-bound FSAs - a) in the home countries by the parent, and b) in the host countries by the subsidiaries (for more details, see Birkinshaw 1997) and c) at a 'center of excellence' by a number of subsidiaries (for more details, see Moore and Birkinshaw 1998). We argue that the SMNEs that are able to transform location-bound FSAs into non-location-bound FSAs are more likely to derive advantage(s) from their FSA_T.

Narula and Driffield (2012: 2) argue that FSAs may be derived from the 'multinational nature of the MNE', not from just plant specific assets. We posit that this argument is also applicable for the SMNEs operating in the labor-intensive sectors. Depending on the

degree of multinationality[23], some SMNEs are likely to derive economies of common governance from FSA_T. They may as well derive advantage(s) from FSA_T while diffusing knowledge across borders, or be able to create an edge from FSA_T by transforming some location-bound FSAs into some non-location-bound ones. We argue that the greater the number of countries that such SMNEs operate in with production facilities, the more likely it is that such SMNEs are able to derive incremental FSA_T leading to attaining some sort of advantage(s).

Lee et al. (2021) view FSA_R being one step ahead of FSA_T. According to them, FSA_T are often common across MNEs, while FSA_R are unique to each MNE. FSA_R are developed and used by linking the productive opportunities with the resources that are available / accessible to the MNEs (Verbeke and Yuan 2010). With the degree of multinationality, wider variability of FSA_R may open up newer opportunities for some of the SMNEs to gain competitive advantages. We argue that the greater the number of countries that the SMNEs operate in with production facilities, the more likely it is that newer resources are found by such SMNEs based on which some exploitable FSA_R may be developed.

Considering the difficulties in disentangling FSA_T from FSA_R, we do not take an either or approach for the purpose of analysis. Instead, we argue that FSA_T and / or FSA_R should fully explain any difference in productivity between the foreign-owned SMNEs and domestic supplier firms in the labor-intensive sectors. We assume that depending on the degree of multinationality, SMNEs are able to derive advantage(s) from FSA_T and / or FSA_R. There may exist considerable variation among the SMNEs in terms of possessing FSA_T and / or FSA_R depending on the distance between the home and host countries. It is likely that SMNEs that come from farther distances may possess superior sets of FSA_T and / or FSA_R relative to the SMNEs that come from closer distances. In summary, the reason why the SMNEs may be able to be more productive than the domestic supplier firms is due to their possession of FSA_T and / or FSA_R at the level(s) that may lead to achieving some advantage(s). Given the weaknesses in FSA_A in the context of the labor-

[23] One of the proxies used for the degree of multinationality is the simple count of countries where MNEs operate in (Ramaswamy 1995; Tallman and Li 1996; Yang et al. 2013).

intensive sectors, FSA_T and / or FSA_R leading to attaining some advantage(s) may drive superior productivity of our SMNEs.

This leads to the following empirically testable hypothesis:

H3: SMNEs that can derive advantage(s) from FSA_T and / or FSA_R based on the degree of multinationality are likely to be more productive than the domestic supplier firms.

4.4 Data:

We obtain firm level data from various EPZs in Bangladesh. Notably, Bangladesh Export Processing Zones Authority (BEPZA), a special wing under Prime Minister's Office (PMO), administers all the EPZs in Bangladesh. Since 1983, BEPZA has developed 8 EPZs in various locations throughout the country. In each EPZ, supplier firms are engaged in production of goods and services solely for the purpose of exporting. There are 464 firms currently operating in these 8 EPZs. The operating units are all afforded the same benefits in terms of tax holidays, and are all governed under the same set of labor and environmental laws. Irrespective of the industrial sector, all units operate under a homogenous environment. This is particularly important in terms of ruling out or at least mitigating the effects of many potential confounding factors for our analysis. We obtain data from BEPZA central office on value of exports, procurement, book value of cumulative investments, employment level, industrial sector, firm age, ownership type and country of origin for 370 among these 464 firms. The data on the remaining firms are incomplete (information on export, investment, procurement, or employment level being missing).

In 2016, these 370 firms for which we obtain data exported almost USD 6.5 billion worth of goods from BEPZA administered eight EPZs. Average export amount per firm is USD 17.5 million and average employment level per firm is 1,139. There are a few firms among these, whose export values or employment levels are quite small (less than USD 1 million and employment level less than 50). We consider these firms to be outliers. We also exclude the only wholly-owned subsidiary (WOS) of the Japanese watchmaker Seiko as an outlier since all other firms in our sample are operating in the segment of supplier firms along the GVCs. Therefore, our final sample size stands at 281 firms. The average employment level at the firms in our final sample is over 1,455 and the average

export level of the same is USD 22.67 million. These 281 supplier firms in our sample export goods valued at around USD 6.4 billion. Therefore, our sample can be considered to be representative of the population, since the total value of exports from all the 370 firms in the 8 EPZs is approximately USD 6.5 billion. Notably, total value of exports from Bangladesh is around USD 35 billion in 2016. Thus the 8 EPZs contribute over 18% of the total national exports.

In addition, we also collect firm level data on the degree of multinationality for which the number of countries with production facilities is taken as a proxy. We have been able to collect data for the number of countries with production facilities on 259 firms.

SMNEs are likely to have production facilities in more than one country whereas all domestically owned supplier firms have production facilities only in one country. Mean of the number of countries with production facilities is 3.59 with a standard error of 6.42. Supplier firms in our sample have production facilities minimum in one country and maximum in 72 countries.

Table 1: Summary statistics of key variables

Variable	Obs.	Mean	Std. Dev.	Min	Max
Age (years)	281	13.02	7.32	2	33
Exports (in million USD)	281	22.67	33.39	1.10	247.86
Procurement (in million USD)	281	12.66	17.30	0.20	117.55
Investments (in million USD)*	281	7.52	10.32	0.03	92.73
Number of employees	281	1455	1961	52	14630
Garments and accessories	281	72.6%	-	-	-
Ownership - 100% FDI (SMNE)	281	63.0%	-	-	-
Number of countries with	259	3.59	6.42	1	72

production facilities

Note: * After depreciation

In Table 1, we report the summary statistics of our data. Almost two-thirds of the supplier firms are 100% foreign owned (FDI) and the rest 37% are either 100% domestically owned or partially domestically owned. Almost three quarters of the supplier firms are engaged in ready-made garment, garment accessories and textile sector. The average procurement value is approximately USD 12.66 million. Therefore, the supplier firms generate around 44% gross profits, which is used for wages and other operational expenses, including depreciation, amortization and interest expenses, and profits and/or retained earnings.

We also obtain several years of cumulative investments data for the supplier firms, beginning in year 2010. This information is stored centrally at the EPZs. However, for quite a few supplier firms not all 7 years (2010-2016) of data are available. Investments are used as a proxy for the level of capital. These investments are primarily used for plant and equipment. Therefore, in order to generate a suitable proxy of the book value of the capital stock for each supplier firm, we assume an average straight-line depreciation rate based on the incremental investments in each of the previous 7 years. For the years prior to 2010, we impute the average annual investments based on the growth rate observed during 2010-16. Since the majority of the supplier firms are in the garment sector, we enquire about the usual practices on depreciation in a few such supplier firms. From our informal enquiries, we find out that the average useful life can vary between 10-20 years depending on the function and quality of the machines, and that the usual salvage value is approximately 20%. Therefore, we assume a useful life of 15 years, with a salvage value of 20%. Based on these assumptions, the average capital level (investments excluding depreciation) is USD 7.52 million. The depreciation adjustment procedure is discussed in further details in Appendix 1.

Table 2a: Descriptive statistics by EPZ

EPZ	Number of units	Mean				
		Exports (million USD)	Procurement (million USD)	Investments (million USD)	Number of employees	Age (years)
Relatively larger EPZs						
Chittagong	106	22.29	12.56	6.82	1726	17.42
Dhaka	70	30.17	15.48	8.58	1142	14.26
Relatively smaller EPZs						
Adamjee	31	16.39	8.80	7.10	1296	7.68
Comilla	21	14.11	8.83	7.04	1054	9.10
Ishwardi	8	13.68	8.67	5.68	827	6.50
Karnaphuli	30	24.60	13.79	9.37	1763	7.93
Mongla	7	9.50	7.72	1.95	193	6.9
Uttara	8	22.01	18.49	10.06	2857	6.1

Table 2b: Descriptive statistics by EPZ

EPZ	Proportion of firms	
	Garment sector	**SMNE**
Relatively larger EPZ		
Chittagong	74%	56%

Dhaka	86%	71%
Relatively smaller EPZ		
Adamjee	90%	61%
Comilla	67%	57%
Ishwardi	38%	63%
Karnaphuli	53%	77%
Mongla	29%	57%
Uttara	38%	63%

4.4.1 Composition of the various EPZs

The EPZs vary in terms of number of operating units. The relatively larger EPZs are in Chittagong and Dhaka. These 2 EPZs are also older, and average age of the firms is significantly longer than the average age of the firms in the other EPZs. In our sample, the total value of exports in 2016 from these larger EPZs is USD 4.5 billion, whereas the value of exports from the other 6 relatively smaller EPZs is USD 1.9 billion. The sample size of operating units in the larger EPZs is 176 and in the smaller EPZs, it is 105. In Tables 2a and 2b, we report the descriptive statistics for the various EPZs.

4.4.2 Types of ownership and origin

The firms in these EPZs are of three different types of ownership. A majority of the firms operate under 100% foreign ownership. We use SMNE to denote these supplier firms. Among the others, there are firms that are 100% domestically owned or partially domestically owned. We denote these firms as domestic supplier firms. Our main objective is to examine productivity of SMNEs vis-a-vis the domestic supplier firms.

We group the SMNEs into two categories according to geographic regions from where FDI originates or in other words where the parent firms are based. They are - a) SMNE-Asia (East and Southeast Asia, South Asia and Middle East), and b) SMNE-West (Europe and North America). We assume that SMNE-Asia firms coming from closer distances do

not face substantial disadvantages in the host countries, while SMNE-West firms coming from farther distances do.

4.4.3 Regional variation in FSAs

We collect data on the degree of multinationality for which the number of countries with production facilities is used as proxy. In the labor-intensive sectors, weaknesses in FSA_A prevail. Therefore, we assume that depending on the degree of multinationality, some SMNEs are able to derive advantage(s) from FSA_T and / or FSA_R. Our data shows that there is considerable variation among the SMNEs in terms of possessing FSA_T and / or FSA_R. We notice that SMNE-West are generally superior in terms of possessing FSA_T and / or FSA_R relative to SMNE-Asia. In Table 3, we report the t-test results examining the differences between SMNE-West and SMNE-Asia in terms of possessing FSA_T and / or FSA_R.

Table 3: Possession of FSA_T and / or FSA_R: Regional variation between SMNE-West and SMNE-Asia

Source of FSAs	**Data**	**Type of SMNE**	**No. of firms**	**Mean**		**Difference: SMNE-Asia vs. SMNE-West**		**H_0: Diff.=0 H_a: Diff.<0**
				Est.	Std. Error	Est.	Std. Error	Significance
Multinationality (Number of countries with production facilities)	All firms	SMNE-Asia	116	4.53	0.62	-3.18	1.43	**
		SMNE-West	39	7.72	1.65			
	Garment sector	SMNE-Asia	69	5.07	1.04	-3.73	2.05	**
		SMNE-West	31	8.81	2.04			

Note: *** p<0.01, ** p<0.05, * p<0.10.

4.5 Empirical Analysis:

4.5.1 Preliminary univariate analysis

We examine productivity of SMNEs vis-a-vis the domestic supplier firms using simple mean comparison tests before conducting the multivariate analyses that account for various sources of potential confounding affects. It is possible that the confounding factors influence and invalidate direct comparisons of per-employee exports. Bellak (2004) highlights the limitation of descriptive statistics to state that descriptive evidence often misleads. Nonetheless, a simple model-free analysis of the data provides us an indication of broad differences. In Table 4, we report the results.

Table 4: Means comparison – DV: per employee export value ('000 USD)

Data	**Types of Ownership**	**Number of firms**	**Mean**		**Difference: Domestic vs SMNE**		H_0: **Diff.=0** H_a: **Diff.≠0**
			Estimate	Std. Error	Est.	Std. Error	Significance
All firms	Domestic	104	31.89	6.79	10.94	5.49	**
	SMNE	177	20.96	1.36			
Garment sector	Domestic	66	29.89	7.60	6.69	7.05	
	SMNE	138	23.20	1.81			
Large EPZ	Domestic	67	19.63	2.94	-4.47	3.37	
	SMNE	109	22.39	1.93			

Note: *** p<0.01, ** p<0.05, * p<0.10.

Comparison of per-employee exports shows that on average the SMNEs actually perform worse compared to the domestic supplier firms. However, there is no

significant difference when we compare SMNEs vis-a-vis the domestic supplier firms within only the garment sector and within only the larger EPZs.

4.5.2 Multivariate analysis

A multivariate approach is needed to account for various sources of potential confounding effects. Principal among the confounding factors is the level of capital intensity of the firms. Therefore, we need to take into account the level of investments and also the value of other material inputs in the multivariate regressions for a more thorough analysis.

We choose gross output per employee to be the dependent variable with material input per employee as a factor instead of taking the value-added output per employee as the dependent variable. The latter approach is actually a restricted version of the former approach. We choose the less restricted approach. Examples of using this less restricted approach are available in the extant literature (Bellman and Jungnickel 2002; Temouri, Driffield and Higon 2008).

There are two approaches to conducting multivariate analyses on productivity. One is labor productivity analysis by conducting a regression with per employee output as the dependent variable, and the other is to conduct an analysis on total factor productivity. We use the multivariate regression model on labor productivity as our main empirical model, and use the total factor productivity analysis for robustness check.

We use the full sample of firms and the subset of firms in the garment sector for our analysis. An advantage in our dataset is that almost three quarters of the firms are in the garment and garment related sector. Given that all types of SMNEs and domestic supplier firms exist in several industrial sectors in our dataset, analysis of only one industrial sector should, in-principle, lead to estimates that are less affected by any potential confounding variables that are unobserved, especially those that are industry specific. Conducting the analysis on this subset of data allows us to check whether or not the results obtained with the full sample are stable.

The primary regression model that we use is as follows:

$$\ln Y_i = \beta_0 + \beta_1 \ln K_i + \beta_2 \ln M_i + \beta_3 X_i + \beta_4 SMNE_i + \epsilon_i \ldots (1)$$

In the above equation i denotes firm $i = 1, \ldots, N$; Y denotes per employee output, K denotes per employee capital, M denotes per employee material input, X_i is the set of observable characteristics that are control variables, and SMNE is a binary indicator of whether or not the firm is an SMNE. In our data, we have the following control variables: a binary indicator of whether or not the firm belongs to the larger EPZs, firm age, and industry that we use in the regression model. Out of the various industries, most of the firms in our sample belong to garment, garment accessories, knitting and other textile industry etc. that we group together broadly as garment sector for the convenience of analysis. ϵ_i is the error term that captures the unobservable characteristics.

Test for H1: In Table 5 in columns 1 and 4, we report the estimates using the regression model (1) for the two sets of data. The estimates reported in column 1 are generated using the full sample, whereas the estimates reported in column 4 are generated using the garment sector sub-sample.

In order to test H1, we examine the coefficient on SMNE. Using full sample, this coefficient is estimated to be 0.081 (s.e. 0.040), which is significant at 5% level. The estimated coefficient using the garment sector sample is 0.118 (s.e. 0.046), which is also significant at 5% level. The coefficients on SMNE being positive and significant using both samples indicate that SMNEs, in general, are more productive than the domestic supplier firms. This is consistent with our hypothesis H1.

Test for H2: In order to test H2, we split the SMNEs into two groups: SMNE-Asia and SMNE-West. SMNE-West have home countries that are farther from the host country, relative to the SMNE-Asia. Thus, splitting the SMNEs allows us to test our second hypothesis.

We run the regression as specified in equation (2) as follows:

$$\ln Y_i = \beta_0 + \beta_1 \ln K_i + \beta_2 \ln M_i + \beta_3 X_i + \beta_{41} SMNE(A)_i + \beta_{42} SMNE(W)_i + \epsilon_i \ldots (2)$$

Where, $SMNE(A)_i$ denotes SMNE-Asia, and $SMNE(W)_i$ denotes SMNE-West. We assume that SMNEs from farther distances face substantial disadvantages in the host countries. Our second hypothesis suggests that SMNEs from farther distances should be more productive in order to remain competitive.

The results are reported in columns 2 and 5 of Table 5 using the full sample and garment sector sub-sample respectively. Notice that the coefficient on SMNE-West is 0.229 (s.e. 0.064) using the full sample and 0.277 (s.e. 0.076) using the garment sector sub-sample. In both cases, the coefficient estimates are significant at 1% level. Our dependent variable is log of average output per employee, but SMNE-West is a binary variable that takes the value 1 if a firm is SMNE-West and 0 otherwise. The extent of the difference in average output per employee (our measure for labor productivity) between SMNE-West and a domestic supplier firm is $exp\ (0.229)$*-1* $= 25.7\%$ using the full sample, and *exp(0.277)-1=31.9%* using the garment sector sub-sample. We argue that such SMNEs face substantial disadvantages in the host countries due to which they need to be more productive relative to the domestic supplier firms. These results are consistent with H2.

Test for H3: In order to test H3, we augment the regression model (2) to include the degree of multinationality as the potential source of FSAs. Thus, the regression model is:

$$\ln Y_i = \beta_0 + \beta_1 \ln K_i + \beta_2 \ln M_i + \beta_3 X_i + \beta_{41} SMNE(A)_i + \beta_{42} SMNE(W)_i + \beta_{51} SMNE(A)_i . FSA_i + \beta_{52} SMNE(W)_i . FSA_i + \epsilon_i \ldots (3)$$

FSA_i denotes the source of FSAs. Given the context of labor-intensive sectors, we assume that weaknesses in FSA_A prevail, and the portfolios of FSAs comprise of strong FSA_T and / or FSA_R. Moreover, FSA_T and / or FSA_R that we consider are derived from multinationality for which the proxy used is the number of countries with production facilities. The more countries an SMNE operates in with production facilities, the more likely it is that the SMNE can derive advantage(s) from FSA_T and / or FSA_A based on multinationality. Of course, this variable takes a value 2 or greater for the SMNEs and a value 1 for the domestic supplier firms. The domestic supplier firms in our data do not

have manufacturing facilities in other countries and have only one production unit in the host country. We interact the log of this variable with SMNE - West and SMNE - Asia that allows us to test whether FSA_T and / or FSA_R derived from multinationality are able to drive superior productivity of SMNE - West. The coefficients β_{51} and β_{52} capture any difference in productivity due to the use of FSA_T and / or FSA_R derived from multinationality. The results are reported in columns 3 and 6 of Table 5 using the full sample and garment sector sub-sample respectively.

Hypothesis H3 claims that FSA_T and / or FSA_R derived from multinationality drive superior productivity of the SMNE - West that come from farther distances. Examining the estimates in Column 3 and 6 in Table 5, we find that the coefficient β_{52} is 0.186 (s.e. 0.069) using the full sample and 0.199 (s.e. 0.071) using the garment sector sub-sample. In both cases, the coefficient estimates are positive and significant at 1% from where we infer that SMNE-West firms, which come from farther distances than the SMNE-Asia firms, are more productive than the domestic supplier firms by using FSA_T and / or FSA_R derived from multinationality. This suggests that the SMNEs that are more productive relative to the domestic supplier firms are able to derive advantage(s) from FSA_A and / or FSA_R based on multinationality.

Notice that $\beta_{51}$is non-significant indicating that SMNE-Asia that come from closer distances are unable to derive any advantage(s) from FSA_T and / or FSA_R based on multinationality. Consequently, SMNE-Asia firms are not any different from the domestic supplier firms in terms of productivity even if they have presence in multiple countries. The results are consistent with H3.

Table 5: Labor productivity analysis

DV: Log of gross output / employee	Full sample	Full sample	Full sample	Garment sector	Garment sector	Garment sector
Log of investment / employee	0.041*	0.046**	0.037	0.052*	0.056**	0.045
	(0.023)	(0.022)	(0.023)	(0.027)	(0.027)	(0.028)

Log of material input/employee	0.845***	0.840***	0.842***	0.814***	0.810***	0.811***
	(0.035)	(0.035)	(0.038)	(0.043)	(0.043)	(0.047)
Log of firm age	-0.015	-0.006	-0.018	-0.059	-0.048	-0.065
	(0.042)	(0.042)	(0.043)	(0.053)	(0.053)	(0.052)
Large EPZs	0.032	0.025	0.023	0.091	0.071	0.086
	(0.050)	(0.050)	(0.051)	(0.060)	(0.060)	(0.059)
Garment sector	0.181***	0.152***	0.143***			
	(0.045)	(0.044)	(0.046)			
SMNE	0.081**			0.118**		
	(0.040)			(0.046)		
SMNE Asia		0.025	-0.061		0.047	-0.007
		(0.041)	(0.106)		(0.047)	(0.118)
SMNE West		0.229***	-0.108		0.277***	-0.099
		(0.064)	(0.115)		(0.076)	(0.136)
SMNE Asia x Multinationality			0.073			0.057
			(0.063)			(0.067)
SMNE West x Multinationality			0.186***			0.199***
			(0.069)			(0.071)
Constant	-0.120	-0.109	-0.112	0.011	0.004	-0.022
	(0.161)	(0.158)	(0.169)	(0.186)	(0.183)	(0.191)

Observations	281	281	259	204	204	190
R-squared	0.865	0.870	0.870	0.868	0.875	0.875

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

4.5.3 Robustness check – total factor productivity analysis

An alternative to the multivariate regression model for labor productivity is to conduct a multivariate analysis on total factor productivity (TFP). Syverson (2011) discusses how simply comparing per employee output or per-dollar-investment output may not reflect the productivity differences among firms. Hence, a popular approach is to use an estimation framework that takes into account capital intensity, material input and labor. It is thus useful to consider a production function as follows:

$$Y_i = A_i F(K_i, M_i) \quad \ldots.(4)$$

Here, Y denotes output per employee, K denotes capital input per employee and M denotes material input per employee. Equation (4) suggests that output of a firm i follows a production function $F(.)$, where the production is essentially dependent on the various types of inputs – capital, material and labor. A denotes the level of technology and captures any unknown differences among the firms in the way they transform the inputs into outputs. Thus, A can be said to reflect the level of technology that the firm applied. Therefore, once we account for the effects of the direct inputs, the differences in A will reflect differences in productivity across the supplier firms. However, A is not directly observable and needs to be estimated. Often empirical researchers assume a Cobb-Douglas type production function:

$$Y_i = A_i . K_i^{\alpha} M_i^{\beta}$$

This production function leads to the following equation:

$$\ln Y_i = \ln A_i + \alpha \ln K_i + \beta \ln M_i \ldots (5)$$

The representation in (5) leads to a simple regression model, where $\ln A_i$ can be estimated as the residuals ($\hat{\mathrm{E}}_i$) from the above regression with the log of gross output per employee as the dependent variable and the log of the two types of inputs per employee as the explanatory variables. The residuals are measures of what is known as the multi-factor productivity or total factor productivity (TFP) in economics literature.

Once the residuals are estimated, we can further regress these estimated residuals on the observable characteristics (such as, types of ownership which is our variable of interest), and find whether these characteristics affect the productivity levels. Then the second stage regression could be estimated using the following equation:

$$\hat{\mathrm{E}}_i = \delta_0 + \delta_1 X_i + \delta_2 SMNE_i + \mu_i \quad \ldots . (6)$$

In this model, δ_1 reflects the effect of characteristics X on TFP, since $\frac{d\hat{\mathrm{E}}}{dX} = \delta_1$. If δ_1 is positive (negative) then the characteristic X increases (decreases) TFP. Our interest is to see whether the firms belonging to the category SMNE are generally more productive than the domestic supplier firms. Therefore, the above approach is quite suitable for our purposes.

It is possible that the average TFP can vary considerably across industries. In order to account for such differences, the set of characteristic variables should include the potential factors that can naturally create differences in TFP. For instance, the average TFP in the garment sector may be significantly different from the average TFP in the chemical and fertilizer sector. Therefore, the set of variables X should include multiple characteristics.

Notice that $\hat{\mathrm{E}}$ is essentially $\ln A$. Therefore, δ_2 reflects the partial effect of a unit increase in characteristics $SMNE$ on $\ln A$. Since $SMNE$ is a binary dummy variable, we can write

$\delta_2 = \ln A\ (SMNE) - \ln A\ (non\ SMNE)$. Thus, $exp(\delta_2)$-1 reflects the difference in the level of efficiency between the SMNE and the domestic supplier firms.

Thus, an alternative test (to the one discussed in the previous subsection) of our first hypothesis that the total factor productivity of SMNE is greater than or equal to that of the domestic supplier firms, is to examine whether or not the null hypothesis $\delta_2 \geq 0$ holds. If the regression results show evidence that the null hypothesis cannot be rejected in favor of an alternative hypothesis that $\delta_2 < 0$, then we find evidence in support of our claim in H1. Similarly, the other hypotheses (H2 and H3) can be tested using the following two regression models:

$$\hat{E}_i = \delta_0 + \delta_1 X_i + \delta_{21} SMNE(A) + \delta_{22} SMNE(W) + \mu_i \quad \ldots.(7)$$

$$\hat{E}_i = \delta_0 + \delta_1 X_i + \delta_{21} SMNE(A) + \delta_{22} SMNE(W) + \delta_{31} SMNE(A).FSA_i + \delta_{32} SMNE(W).FSA_i + \mu_i \quad \ldots.(8)$$

In Table 6 in columns 1 and 2 (full sample and garment sector sub-sample respectively), we report the results from our 1st stage regression conducted as per equation (6). The estimates from this regression reveal that both the inputs are significantly positively associated with the level of gross output. It is interesting to note that the coefficient on material input per employee is significantly larger than the one on investments per employee. This is to be expected, as our sample comprises of firms in the low value-added segment of supplier firms along the GVCs with large labor requirement and relatively less capital requirement.

Table 6: Step 1 regression of gross output per employee on capital and input materials

DV: Log of gross output / employee	Full sample	Garment sector

Log of investment / employee	0.049**	0.056**
	(0.021)	(0.024)
Log of material input / employee	0.834***	0.815***
	(0.025)	(0.028)
Constant	0.038	0.024
	(0.114)	(0.128)
Observations	281	204
R-squared	0.857	0.862

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

In Table 7, we report the results from our second stage regressions. We estimate several specifications similar to labor productivity regression as described in equations (6)-(8).

In columns 1 and 4 of Table 7, we report the estimates using the model specified in equation (6). This estimate of δ_2 is 0.078 (s.e. 0.041) using the full sample and 0.116 (s.e. 0.046) using the garment sector sub-sample. In both cases, the estimates are positive and significant at 10% and 5% level respectively. These results are consistent with the hypothesis stated in H1.

In columns 2 and 5, we report the estimates using the model specified in equation (7). The coefficient on SMNE-Asia is estimated to be 0.023 (s.e. 0.043) using the full sample and 0.046 (s.e. 0.048) using the garment sector sub-sample. In both cases, the estimates are insignificant. On the other hand, the coefficient on SMNE-West is estimated to be 0.228 (s.e. 0.064) using the full sample and 0.277 (s.e. 0.076) using the garment sector sub-sample. In both cases, these estimates are significant at 1% level.

Table 7: TFP analysis

DV: TFP		Full sample	Full sample	Full sample	Garment sector	Garment sector	Garment sector
Log of firm age		-0.015	-0.006	-0.018	-0.058	-0.048	-0.063
		(0.042)	(0.042)	(0.043)	(0.052)	(0.052)	(0.052)
Large EPZs		0.035	0.026	0.026	0.093	0.070	0.089
		(0.050)	(0.050)	(0.051)	(0.059)	(0.059)	(0.058)
Garments		0.178***	0.151***	0.140***			
		(0.047)	(0.045)	(0.048)			
SMNE		0.078*			0.116**		
		(0.041)			(0.046)		
SMNE-Asia			0.023	-0.064		0.046	-0.004
			(0.043)	(0.115)		(0.048)	(0.128)
SMNE-West			0.228***	-0.103		0.277***	-0.089
			(0.064)	(0.114)		(0.076)	(0.135)
SMNE-Asia Multinationality	x			0.071			0.051
				(0.067)			(0.072)
SMNE-Asia Multinationality	x			0.182***			0.190***
				(0.067)			(0.069)
Constant		-0.165*	-0.157	-0.118	0.014	0.005	0.029
		(0.099)	(0.100)	(0.105)	(0.119)	(0.118)	(0.118)

Observations	281	281	259	204	204	190
R-squared	0.057	0.097	0.106	0.039	0.092	0.106

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

In columns 3 and 6, we report the estimates using the most general specification as stated in equation 8. In Column 3 and 6 in Table 7, the estimates of coefficient δ_{32} are 0.182 (s.e. 0.067) using the full sample and 0.190 (s.e. 0.069) using the garment sector sub-sample. In both cases, the coefficient estimates are positive and significant at 1%.

All these results are consistent with the results that we reported in sub-section 5.2, and also consistent with the hypotheses stated in H1, H2 and H3. The results also indicate that the inference that we make with the labor productivity regression is robust.

4.6 Discussion:

We have proposed several hypotheses on productivity of SMNEs in the labor-intensive sectors vis-a-vis the domestic supplier firms. The generally accepted notion in the IB literature is that the MNEs are more productive than the domestic firms. However, such arguments in the extant literature have primarily been placed in the context of technology or knowledge-intensive sectors where the MNEs possess FSA_A such as proprietary technology, brand etc. Given the prevalence of weaknesses in FSA_A, what happens to the SMNEs that operate in the labor-intensive sectors? We have drawn on the extant literature to examine whether SMNEs in the labor-intensive sectors may rely on FSA_T and / or FSA_R to overcome the deficiencies in FSA_A, which is essential to drive superior productivity relative to the domestic supplier firms.

We examine these hypotheses using a dataset obtained from BEPZA that administers several export processing zones in Bangladesh. Our final data consists of information on various characteristics of around 281 supplier firms with a mix of SMNEs and domestic supplier firms. Since all these supplier firms are located in a homogenous location, with the same laws and regulations applying for those, we believe that this is an appropriate set of data to test our hypotheses.

Our empirical results reported in section 5, support all our hypotheses. The estimates

appear to be stable across subsets of the sample and with the two main measures of productivity proposed in the literature. We estimate two models, one that has per employee output as the measure of productivity, and the other is total factor productivity.

The results indicate that some SMNEs are more productive than the domestic supplier firms while the others are not any different from the domestic supplier firms. We also find that the SMNEs that are more productive than the domestic supplier firms come from farther distances. When we include FSAs proxied by multinationality in the empirical model, we find that the SMNEs that come from farther distances are more productive than the domestic supplier firms as they are able to generate advantage(s) from FSA_T and / or FSA_R. It has been shown that FSA_T and / or FSA_R can overcome the deficiencies in FSA_A that prevail in the labor-intensive sectors.

4.7 Theoretical and Policy Implications:

Theoretical implications of this paper include a) it further reinforces the role of FSAs in helping MNEs remain competitive in the host countries by becoming more productive than the domestic supplier firms even in the context of labor-intensive sectors, and b) it shows that it is possible to use advantages(s) derived from FSA_T and / or FSA_R based on multinationality to overcome the deficiencies in FSA_A.

Our findings seem to have some policy implications. Governments of host countries, currently, do not have the policy to discriminate between MNEs. Incentives such as tax holidays, tax cuts, subsidized land, and various other special privileges that are usually offered by host governments to attract FDI especially in developing countries are all the same to all MNEs irrespective of their source of investments. This indiscriminate policy of the FDI hungry host nations is based on the notion that MNEs, in general, are more productive than the domestic firms, and, hence, ought to have positive spillover effects on host economies. Our findings that SMNE-West are more productive than the domestic supplier firms and SMNE-Asia are as productive as the domestic supplier firms call for different policy approaches for the two groups of SMNEs. SMNE-West may be offered special incentives for having higher productivity whereas SMNE-Asia must remain at par with that of the domestic supplier firms. The entry of increased number of SMNE -

West with higher productivity may raise the overall national productivity level.

Our finding that FSA_T and / or FSA_R leading to some advantage(s) may drive superior productivity of SMNEs operating in the labor-intensive sectors calls for host governments to consider new sets of policies that recognize the dynamic nature of FSAs and the possibility of spillovers from the SMNE-West to the other types of supplier firms. Especially, the domestic supplier firms in the host countries may reap some benefits by learning the latest production know-how, managerial as well as organizational best practices etc. from the SMNE-West.

4.8 Conclusion:

This paper provides an explanation on the growing trend of internationalization of supplier firms in light of FSA theory. We examine the role of FSA_T and / or FSA_R in driving superior productivity of the SMNEs in the labor-intensive GVCs. SMNEs in such GVCs possess portfolios of FSAs that reflect weaknesses in FSA_A. As a result, such SMNEs possess portfolios of FSAs that comprise of relatively stronger FSA_T and / or FSA_R.

Our results reinforce the key role of FSAs in driving superior MNE productivity even in the labor-intensive segment of supplier firms along the GVCs. We find that FSA_T and / or FSA_R derived from multinationality may help some SMNEs overcome the deficiencies in FSA_A. A few SMNEs that can generate advantage(s) from FSA_T and / or FSA_R are able to become more productive than the domestic supplier firms.

We contribute from both theoretical and empirical perspectives. It is shown that FSA_T and / or FSA_R may overcome the deficiencies in FSA_A and drive superior productivity of SMNEs in the labor-intensive GVCs. The ideas of reinforcing the theoretical relevance of FSAs that put the SMNEs apart from the domestic supplier firms in terms of productivity even in the labor-intensive GVCs and at the same time, pinpointing the most relevant source of FSAs that really matters in driving superior productivity in such sectors / GVCs are novel contributions to the literature.

Appendix 1

Depreciation adjustment procedure:

Let CI_t denote depreciation un-adjusted cumulative investment at year t. We have data on CI_t for the period 2010-2016. We find investment in year t, I_t. We find $I_t = CI_t - CI_{t-1}$, for $t = 2011, \dots, 2016$. We imputed I_t, for $t < 2011$ since the inception of the firm, by applying the average growth rate during 2011-2016. Therefore, for any year t prior to 2011, $I_t = CI_{t+1}.\left(\frac{1}{1+avg\ growth\ rate\ of\ CI\ during\ 2011-2016}\right)$. Once we imputed the CI_t and I_t for all the years, we applied the following formula to calculate the level of depreciated cumulative investments (the proxy for capital) at 2015. Note that if year t is more than 30 (15 x 2) years prior to 2015 (i.e t <1985}, then only 20% of the investment for that year is salvaged after the first 15 years, then 20% of this salvaged value is salvaged at the end of the 2nd 15 year period, following which this remaining value is depreciated using a straight line over 15 years over the remaining years in operation. If year t is between 15 and 29 years prior to 2015, then after the first 15 years of operation, only 20% of this investment is salvaged, following which the remaining this salvaged value is depreciated using a straight line over 15 years over the remaining years. If year t is less than 15 years prior to 2015, then the value of investment in that year is depreciated using a straight line over 15 years over the remaining years in operation. The above arguments are reflected in the following equation:

$$K_{2015} = \sum_{t\in\{t<1985\}} I_t.(20\%)(20\%)(1-20\%).\left(\frac{(2015-t-30)}{15}\right) + \sum_{t\in\{1985\le t<2000\}} I_t.(20\%)(1-20\%).\left(\frac{(2015-t-15)}{15}\right) + \sum_{t\in\{2000\le t<2015\}} I_t.(1-20\%).\left(\frac{(2015-t)}{15}\right) + I_{2015}$$

Since, capital is a stock variable (balance sheet item), a more appropriate approximation of the capital used for the output generated through the year 2016, i.e. exports of 2016 (a flow variable or income statement item) is as follows:

$$K_{2016} = K_{2015} + 0.5I_{2016}.$$

In other words, we assume that half of the investments during the year 2016 were converted into machinery (or other assets) that became a part of the capital stock that was utilized for output in 2016.

Chapter 5: Paper 2 on Cost competitiveness of supplier MNEs despite creating fewer linkages: Examining role of FSAs

Cost competitiveness of supplier multinational enterprises despite creating fewer linkages: Examining role of firm specific assets

Abstract:

Multinational enterprises (MNEs) in technology or knowledge-intensive sectors create fewer linkages than domestic firms due to the requirement of using specialized input materials. In labor-intensive sectors, prevalence of such specialized input materials is negligible. Using a firm level dataset from labor-intensive export processing zones of Bangladesh, we examine how firm specific assets (FSAs) affect linkage creation decisions of supplier multinational enterprises (SMNEs) and how some SMNEs remain cost competitive despite creating fewer linkages than domestic supplier firms. As input materials in labor-intensive sectors are simple, low-tech and widely available locally, SMNEs rely primarily on transaction type FSA (FSA_T) at subsidiary level sourcing capabilities (SSC). As and when deficiencies in FSA_T at SSC arise, SMNEs use FSA_T at global sourcing capabilities (GSC) to import from abroad. Depending on the level of local knowledge, SMNEs may encounter deficiencies in FSA_T at SSC leading to creating fewer linkages than the domestic supplier firms and such deficiencies may be overcome by the strength in FSA_T at GSC based on multinationality.

5.1 Introduction:

Global value chains (GVCs) are an increasingly important means of international production in emerging and developing economies, with some multinational enterprises (MNEs) acting as lead firms that engage with various types of supplier firms in the host countries through non-equity modes. Many of such supplier firms along the GVCs have been able to internationalize by following their lead firms to various offshore locations (Humphrey 2003; Li 2007; Klein and Wocke 2007) to develop into MNEs (Sturgeon and Lester 2004; Pavlinek and Žižalová 2016). Kawakami (2011) observes that competent supplier firms not only from the developed countries but also from the developing countries have grown to become MNEs in their own right. We term these suppliers as

supplier MNEs (SMNEs).[24] They are mostly visible in electronics, automobile and apparel industries (Sturgeon 2013) and play a critical role in terms of industrial development, especially, in the developing economies (Azme and Nadvi 2014). Unlike in the technology or knowledge-intensive sectors where specialized input materials[25] are required, SMNEs in labor-intensive sectors require input materials that are typically simple, low-tech and widely available locally. Both the GVC and the IB literatures have relatively little to say about linkages created by SMNEs, particularly those that operate in the labor-intensive sectors. To remedy this gap, we examine backward linkages created by such SMNEs within GVC operations in the developing countries in the light of firm specific asset (FSA) theory.

Hirschman (1958) first introduced the concept of linkages in the field of economic development studies. Since then scholars from different strands of academic literature such as industrial economics, development studies, economic geography, and international business (IB) have considered linkages created by the MNEs to be an important phenomenon for industrial development of the host countries. From a macro perspective, MNE linkages can stimulate industrial growth, facilitate technology and knowledge transfers, create employment opportunities, enhance domestic value-added in the host countries (Lim and Fong 1982; Kubny and Voss 2014) and act as a powerful channel through which positive vertical spillovers are more likely to occur (Jordan et al. 2020; Hynes et al. 2020; Javorcik 2004). From a micro perspective, linkages potentially create win-win situations for the MNEs as well as their suppliers of input materials. On one hand, MNEs derive their competitive advantages from lower costs (Ito and Fukao 2010; Rangan and Drummond 2011), and on the other, suppliers of input materials benefit from the increased demand for inputs and employment, knowledge and

[24] Note that all SMNEs that are considered in this research are foreign-owned, none is domestically owned.

[25] Specialized input materials are those that are not easily available in the host countries due to the use of proprietary technology or knowledge as well as due to the involvement of wide range of variety (McAleese and McDonald 1978; Rodriguez-Clare 1996; Rangan and Drummond 2011; Amendolagine et al. 2019).

technology transfers, and spillovers (Jung and Lee 2018; Perez-Villar and Seric 2015; UNCTAD 2001). The study of MNE linkages is, therefore, important from both macro and microeconomic perspectives.

Despite overwhelming recognition of their importance, various scholars at different times have highlighted the overall limited availability of empirical evidence on MNE linkages (Lall 1978; Turok 1993; Meyer 2004; Giroud and Scott-Kennel 2009; Santangelo 2009; Oki and Kawai 2022). A critical examination of the existing literature on MNE linkages reveals that the focus has almost exclusively been on technology or knowledge-intensive sectors (McAleese and McDonald 1978; McDermott 1979; Wilson 1992; Gorg and Ruane 2001; Castellani and Zanfei 2002; Giroud 2003; Giroud and Tavares 2006; Cantwell and Iguchi 2007; Iguchi 2008; Jindra et al. 2009). Much less is known about the linkages created by the MNEs operating in the labor-intensive sectors, which are particularly important for many emerging economies. There has been no discussion available in the literature on how FSAs may affect such MNEs' cost competitiveness while creating fewer linkages than the domestic firms.

The extant literature on MNE linkages suggests that the MNEs in the technology or knowledge-intensive sectors usually create fewer linkages than the domestic firms due to the requirement of using specialized input materials that are mostly unavailable locally (McAleese and McDonald 1978; Rodriguez-Clare 1996). Importing such input materials from abroad in most of the cases is 'not a choice but an imperative' (Kotabe and Mudambi 2009: 122). MNEs in such sectors remain competitive in the host countries by relying on some asset type FSAs (FSA_A) such as proprietary technology or brand. What happens to the MNEs that mostly operate in the labor-intensive sectors where specialized input materials are almost absent and the portfolios of FSAs of them reflect weaknesses in FSA_A? In this research, we examine linkages created by the SMNEs that operate in the labor-intensive GVCs in the light of FSA theory. Specifically, we ask two simple questions on MNE linkages - a) whether SMNEs also create fewer linkages than the domestic supplier firms? and if yes, b) how do they remain cost competitive in the host countries despite creating fewer linkages than the domestic supplier firms?

In order to succeed amid increased competition, MNEs have wider options of sourcing input materials from around the globe (Trent and Monczka 2003; Giunipero et al. 2019;

Yeniyurt et al. 2013). For the sake of mainly achieving cost efficiency as well as speed and flexibility, these firms often use 'global and domestic sourcing simultaneously' (Jin 2004: 1292). While doing so, MNEs try to find a balance of transaction type FSAs (FSA_T) at two levels - (a) subsidiary level sourcing capabilities (SSC) to create linkages, and (b) global sourcing capabilities (GSC) to import from abroad. As input materials in the labor-intensive sectors are typically available off-the-shelf (Tavares and Young 2006), SMNEs rely primarily on FSA_T at SSC. However, depending on the level of local knowledge[26] particularly about the host countries' domestic input materials market, SMNEs may fall short of FSA_T at SSC leading to the creation of fewer linkages than the domestic supplier firms. How do such SMNEs remain competitive in the host countries when shortfall in FSA_T at SSC occurs and given the perceived weaknesses in FSA_A that may be reflected in their portfolios of FSAs?

We argue that shortfall in FSA_T at SSC or even weaknesses in FSA_A may be overcome by the strength in FSA_T at GSC. The extant literature on FSAs discusses a number of possibilities to substitute one FSA for another. Some scholars argue that deficiencies in one class of FSAs may be overcome by the strength in another (Collinson and Narula 2014; Narula 2012, 2017; Madhok 2015). Lee et al. (2021) further suggest that deficiencies in one particular class of FSAs can be overcome by the strength in FSAs from not only another class but also within the same class. Regarding the importance of FSA_A for being competitive, Cantwell and Narula (2001) argue that FSA_T are sometimes considered as sufficient for the MNEs to remain competitive. We argue that the SMNEs that can derive advantage(s) from FSA_T at GSC based on the degree of multinationality[27] may remain competitive in the host countries despite creating fewer linkages than the domestic supplier firms. Narula and Driffield (2012: 2) argue that FSAs may be derived from the 'multinational nature of the MNE'.

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[26] Level of local knowledge refers to the degree of familiarity of an MNE with the host countries, especially, with the aspects such as language, culture, politics, economy etc. (Makino and Delios 1996, Inkpen and Beamish 1997; Lord and Ranft 2000).

[27] The term 'degree of multinationality' refers to the measures of a firm's expansion beyond the home country (Hennart 2011).

We empirically examine linkages created by the SMNEs vis-a-vis the domestic supplier firms in the context of export-oriented supplier firms operating in the export processing zones (EPZs) in Bangladesh. There are 464 supplier firms operating in eight EPZs in Bangladesh with a mix of 100% foreign owned supplier MNEs denoted here as SMNEs and the rest are 100% domestically owned or partially domestically owned firms denoted here as domestic supplier firms. These supplier firms operate primarily in the labor-intensive manufacturing function along the GVCs, thus providing an ideal setting to conduct our research on linkages created by the SMNEs in the labor-intensive sectors.

The remainder of the paper is structured as follows. In section 5.2, we present a literature review covering FSA theory and extant literature on MNE linkages in the labor-intensive sectors. In section 5.3, we develop our hypotheses. In section 5.4, we discuss the data and report the summary statistics. In section 5.5, we present the empirical model for a multivariate analysis and report the results along with those from robustness check. In section 5.6, we provide a discussion of the results along with some theoretical, policy and managerial implications. And in section 5.7, we conclude.

5.2 Literature Review:

We discuss the FSA theory from the extant IB literature to set the ground for our research. In addition, we review the extant literature on MNE linkages particularly focusing on limited works that relate to the context of the labor-intensive sectors in order to get an updated account of what has, so far, been done ultimately to identify the research lacuna.

5.2.1 FSA theory

The concept of FSAs is 'the international version of a competence' (Rugman and Verbeke 2002: 777). MNEs' success largely depends on their abilities to acquire, maintain and develop various types of FSAs (Narula 2012, 2015; Cuervo-Cazurra 2012; Madhok and Keyhani 2012). Several strategic decisions are pursued by the MNEs carefully balancing between the various types of FSAs that they possess. One of such decisions is related to the creation of linkages in the host countries that crucially depends on FSAs, which is the subject matter of this research.

Primarily, MNEs may possess two types of FSAs - a) FSA_A, and b) FSA_T (Narula 2017). A third type is known as recombinant type FSAs (FSA_R)[28] as was proposed by Verbeke (2009). FSA_A refers to tangible property or equipment, intellectual property in various forms, privileged access to tangible or intangible resources including the knowledge possessed by the employees etc. (Dunning 1988; Cantwell and Narula 2001; Lundan 2009; Narula 2017). FSA_T refers to organizational capabilities that are used by the MNEs to efficiently control and organize various activities 'to generate economic rents from FSA_A' (Lee et al. 2021: 2). A major sub-set of FSA_T represents the economies of common governance that the MNEs achieve by dint of multinationality *per se* (Dunning 1988; Lundan 2009). Another sub-set of FSA_T is the MNEs' capability to transfer intra-firm knowledge across borders (Kogut and Zander 1993). FSA_R refers to those that emerge when the MNEs engage in rejuvenating their extant FSAs by recombining with the resources available in the host countries such as accessible L advantages or resources held by other firms (Verbeke 2009 and 2013; Hennart 2009; Narula 2014; Narula and Verbeke 2015).

Depending on the transferability of FSAs, some FSAs are location-bound while others are non-location-bound (Rugman and Verbeke 1992; Rugman 1996). Some successful MNEs possess the capabilities to transform location-bound FSAs into the non-location-bound ones, which also belong to FSA_T (Rugman and Verbeke 2001). In contrast to the suggestion of early IB literature (e.g.; Rugman 1981) that only the parent MNEs create FSAs in the home countries for the subsidiaries to exploit in the host countries, Rugman and Verbeke (2001) argue that subsidiaries may also create both location bound and non-location bound FSAs. Subsidiaries may also share some of the FSAs that they create in various host countries within their parents' network. As a result, a global reservoir of resources and capabilities are built within the MNEs' networks from where individual subsidiaries may be able to pull FSAs, if any, as and when necessary. However, to what

[28] It is not yet universally resolved whether to expand the two-way classification of FSAs to accommodate FSA_R as a separate category (Narula 2017). Instead of viewing FSA_R as either FSA_A or FSA_T, some scholars consider FSA_R as 'a higher order FSA' having one leg on FSA_A and the other on FSA_T (Narula 2014; Verbeke and Yuan 2010).

extent a subsidiary may access FSAs from the global pool of resources and capabilities depend on how far it is embedded within the MNE network (Meyer et al. 2011).

The main focus of this paper is to examine how FSAs affect cost competitiveness of SMNEs while creating linkages in the labor-intensive sectors. In doing so, we, first, examine whether linkages created by the SMNEs can be any different from the domestic supplier firms. Then, we proceed to discuss the role(s) of the pertinent FSAs that help the SMNEs remain cost competitive as and when they create fewer linkages than the domestic supplier firms.

5.2.2 MNE linkages in labor-intensive sectors

There is little discussion in the extant literature on the extent of MNE linkages in labor-intensive sectors.[29] One of the earliest empirical studies that shed some light on MNE linkages in the labor-intensive sectors is by McAleese and McDonald (1978). They compare MNE linkages between non-food and food sectors to suggest that MNEs create fewer linkages in non-food sectors whereas in the food sector create linkages at the level of the domestic firms. In another study, Lall (1978) indicates that there is potential for MNEs creating more linkages in the export-oriented footwear, textile, sports goods, and processed foods industries. However, Lall's suggestion of superior MNE linkages in export-oriented labor-intensive sectors was not made relative to the domestic firms within the same industry or sector, rather relative to the other MNEs in other export-oriented industries or sectors.

Later, Tavares and Young (2006) compare MNE linkages in labor-intensive textiles, clothing and footwear sectors versus MNE linkages in other sectors and find the difference to be insignificant. Giroud and Mirza (2006), on the other hand, find that the MNEs in labor-intensive garment and textile sector create fewer linkages relative to the MNEs in other sectors. Notice that neither Tavares and Young (2006) nor Giroud and

[29] Various empirical studies examine the question of the requirement of using specialized inputs in the technology or knowledge-intensive sectors, and find evidence that the MNEs create fewer linkages relative to the domestic firms (McAleese and McDonald 1978; McDermott 1979; Wilson 1992; Turok 1993; Angel 1994; Driffield and Noor 1999; Gorg and Ruane 2001; Jindra et al. 2009).

Mirza (2006) attempt to examine MNE linkages relative to the domestic firms. Therefore, there appears to exist a gap in linkage research that tries to compare the extent of MNE linkages with the linkages created by the domestic firms within the context of labor-intensive sectors. This paper aims to fill this gap by providing an FSA-based theory of MNE linkages in the labor-intensive sectors supported by some empirical evidence.

Given that in the labor-intensive sectors there is a prevalence of the commodity type of input materials that are typically 'bulky, low value, and available off-the-shelf' (Tavares and Young 2006: 594), should SMNEs in such sectors source these input materials from the domestic suppliers of input materials or procure the same from abroad? According to Hoare (1978: 217), linkages tend to develop with 'closer rather than more distant' input material suppliers. For cost reasons, it should be rational for the MNEs to procure input materials domestically (Ito and Fukao 2010; Rangan and Drummond 2011; Niu et al. 2020). It is to be noted that MNEs not only look for the lowest cost solutions always, but also consider important issues like lead time and flexibility (Jin 2004). (Alfaro-Ureña et al. 2022) report that MNEs in the host countries also look for acceptable quality, availability of suppliers that are willing, able and reliable, and traceability of input materials etc.

SMNEs make linkage decisions by carefully examining the available stock of FSA_A, FSA_T, and the possibility of using some FSA_R that are available at both subsidiary and MNE levels to remain cost competitive in the host countries. To determine which FSAs that the SMNEs may exploit from which level, the firm also take into consideration what are the location (L) advantages that the host country offers. An important L advantage that the host countries can offer to the MNEs is the presence of reliable and capable suppliers of input materials (Narula and Santangelo 2012; Mudambi et al. 2018). The extant literature suggests that MNEs often fail to take full advantage of domestic input material markets as much as the domestic firms do, due to a couple of factors such as - a) the requirement of using specialized input materials, and b) 'familiarity with foreign suppliers and real or imagined inadequacies of local producers' (McAleese and McDonald 1978: 326).

SMNEs operating in the labor-intensive sectors rarely rely on specialized input materials[30]. Therefore, clearly the first argument about the requirement of specialized input materials is not relevant to our SMNEs. However, the second argument (about familiarity with both foreign and domestic suppliers of input materials) is clearly pertinent for linkage related decisions made by the SMNEs. It is thus reasonable to argue that the FSAs that would be important for an SMNE insofar as determining the extent of linkages has to be related to developing such familiarity. An MNE's familiarity with domestic input materials market would lead to building up FSA_T associated with SSC. Whereas, an MNE's familiarity with foreign suppliers of input materials would build incremental FSA_T associated with GSC. This opens up the avenue for our research aiming to develop an FSA-based theory on MNE linkages in the labor-intensive sectors. In the following section, we do so.

5.3 Hypotheses Development:

This paper asks two simple questions on SMNE linkages in the context of labor-intensive sectors - a) whether SMNEs may create fewer linkages than the domestic supplier firms, and if the answer is yes, b) how do they remain cost competitive in the host countries. In light of FSA theory, we develop a set of hypotheses based on these two questions.

5.3.1 Deficiency in FSA_T at SSC leads to SMNEs creating fewer linkages

MNEs are 'less familiar with the host country's environment' (Jung and Lee 2018: 684). Familiarity with domestic input material suppliers develops as the respective subsidiaries of the SMNEs keep acquiring local knowledge. The term local knowledge refers to the knowledge that is specifically related to the host countries such as language, culture, politics, society, economy etc. (Inkpen and Beamish 1997; Makino and

[30] Narula (2019) report that first tier suppliers firms in apparel GVCs receive orders for merchandises that require labels with radio frequency based identification system (popularly known as labels with RFID). Local input material suppliers in the second tier still do not produce them. However, the demand for RFID in Bangladesh is insignificant and the SMNEs dealing with that relatively new item are considered as outliers.

Delios 1996; Lord and Ranft 2000). Meyer et al. (2011) point to the uniqueness of local context of each host country in terms of institutions and resource endowments to highlight the importance of acquiring context specific local knowledge for the MNEs to succeed. Local knowledge is an important source of FSA_T that incrementally strengthens the SSC of an MNE. Castellani and Zanfei (2002) argue that the MNEs' familiarity with the local contexts will favor recourse to the domestic input material suppliers. MNEs in the labor-intensive sectors produce relatively traditional, simple, and undifferentiated products that require input materials involving easily available technology and/or knowledge (Lall 1978). As a result, availability of such inputs in host economies is less problematic. The level of local knowledge determines the MNEs' ability to utilize their SSC optimally even for such easy-to-produce and widely available input materials.

An issue that affects the level of local knowledge of the SMNEs significantly is the length of their presence in the host countries. Jordan et al. (2020) comment that MNEs initially suffer from the problem of incomplete information regarding the availability, quality and reliability of local suppliers of input materials. Forsgren et al. (2005) claim that over time MNEs acquire more local knowledge. The extant literature on MNE linkages suggest that MNEs grow linkages over time as they acquire incremental local knowledge (McAleese and McDonald 1978; Rauch and Watson 1996; Driffield and Noor 1999; Tavares and Young 2006; Giroud and Mirza 2006; Jordan 2017, Franco et al. 2019). Another issue that affects the level of local knowledge is proximity between the home and host countries of the SMNEs. Familiarity of MNEs in the host countries depends on the distance (e.g.; cultural, geographic, and economic) between the home and host countries (Baik et al. 2013). MNEs with home and host countries in the same region are likely to be more familiar with the host environments (Scott-kennel et al. 2022). Some may enjoy 'insider' status in some of the host countries, or even where they are not 'true insiders', the local contexts of the home and the host countries may be quite similar as has been argued by Narula (2012: 197). Whether, SMNEs acquire incremental local knowledge over time or some of them enjoy an insider status in a similar host environment, it is almost impossible to reach parity with the domestic supplier firms in terms of the level of local knowledge.

SMNEs that lack local knowledge cannot be expected to be in a position to create the

same level of linkages as the domestic supplier firms. Such lack of knowledge increases the firms' presumed uncertainty regarding the domestic input material markets to fulfill their requirements for input materials satisfactorily. A lack of local knowledge creates a greater level of uncertainty for the SMNEs and limits the efficacy of their SSC to be able to effectively deal with the domestic input materials market. The lack of local knowledge may increase transaction costs for the SMNEs while sourcing of input materials in the host countries. In particular, search costs to find reliable and capable input suppliers in the host countries are likely to be higher with the lack of local knowledge as Narula (2002) argues that sometimes it is important to know-who. With the lack of local knowledge, it may become difficult for the SMNEs to identify the blurred line between the formal and informal sectors when selecting domestic input material suppliers, especially, in labor-intensive sectors in developing countries. Various questions on domestic input material suppliers may remain unanswered to the SMNEs who may suffer from the lack of local knowledge. To mitigate this problem, MNEs often incur additional costs to search, identify and assess eligible local suppliers of input materials (Jordan et al. 2020). Some even maintain dedicated scouts for the purpose of finding suitable suppliers to develop their local suppliers' networks (World Bank 2018).

We argue that SMNEs in the labor-intensive sectors try to find a balance between FSA_T at SSC to create linkages in the host countries and FSA_T at GSC to import from abroad. As input materials in the labor-intensive sectors are typically available off-the-shelf (Tavares and Young 2006), SMNEs are likely to rely primarily on FSA_T at SSC to create linkages as much as possible depending on efficacy of their SSC. Considering the inadequacy of the level of local knowledge particularly about the host countries' domestic market for input materials, SMNEs may fall short of FSA_T at SSC. Deficiencies in FSA_T at SSC lead to SMNEs creating fewer linkages than the domestic supplier firms.

This leads to our first hypothesis:

H1: SMNEs in the labor-intensive sectors, in general, create fewer linkages than the domestic supplier firms.

5.3.2 Strength in FSA_T at GSC may overcome deficiency in FSA_T at SSC

What happens to the SMNEs that encounter deficiencies in FSA_T at SSC and consequently create fewer linkages than the domestic supplier firms? We argue that such SMNEs must find an alternative means of input material sourcing to overcome the problem of potential additional costs that they may incur relative to the domestic supplier firms. In the technology or knowledge-intensive sectors, MNEs that create fewer linkages than the domestic firms due to the requirement of using specialized inputs have the option to rely on some FSA_A such as proprietary technology or brand to overcome the deficiencies in FSA_T at SSC. In the context of labor-intensive sectors, weaknesses in FSA_A prevail. Therefore, it is a possibility that the SMNEs may use the strength in FSA_T from one level to overcome the deficiencies in FSA_T in another. Cantwell and Narula (2001) argue that FSA_T, in some cases, are considered sufficient for the MNEs to remain competitive. Moreover, the FSA theory suggests that the MNEs may overcome the weaknesses in one set of FSAs by using the advantage(s) in another (Collinson and Narula 2014; Narula 2012, 2017; Madhok 2015), and such possibilities of substitution are not only limited to between different categories of FSAs, but may also work within the same category (Lee et al. 2021). Drawing on the above theoretical suggestions, we examine how FSA_T at GSC may help the SMNEs remain cost competitive as long as the deficiencies in FSA_T associated with SSC persist.

From the viewpoint of MNE linkages, one of the important FSA_T that the SMNEs may possess may be found in their GSC that may grow with their respective degree of multinationality. All SMNEs maintain sourcing capabilities within their respective networks, but only a few are able to generate advantage(s) from those capabilities. Individual subsidiaries may pull such advantage(s) from within the network at the time of their needs in case they are sufficiently embedded within the MNE network (Meyer et al. 2011). SMNEs that operate in greater number of countries with production facilities are likely to be familiar with greater number of input material suppliers from around the globe, enjoy long term trusted relationships with reliable and capable input material suppliers, have access to diverse sets of information about price, quality, variety and availability of input materials, and have the potentials to achieve greater scale economies. Antràs et al. (2022: 50) highlight 'the existence of firm-level economies of scale in the global sourcing strategies' of MNEs. When the SMNEs fall short of FSA_T at

SSC, they are put at a disadvantage relative to the domestic supplier firms. Under the circumstances, SMNEs that can derive advantage(s) from their FSA_T at GSC may overcome such disadvantage.

Advantage(s) derived from FSA_T at GSC encompasses not only scale economies due to which SMNEs are able to obtain better prices of input materials, but also economies of common governance[31] in managing complex global/regional networks of reliable and capable input material suppliers within and beyond the hierarchies who are able to provide input materials of required quality and variety. Some MNEs are able to achieve economies of common governance through which they not only excel in internalization but also in externalization in the form of relationship based contracting (Narula et al. 2019). Note that MNEs that are newly born may lack the depth of knowledge that may be necessary to achieve economies of common governance (Cuervo-Cazurra 2012; Narula 2012, 2017) while the more mature MNEs may fare better with economies of common governance. Depending on the degree of multinationality (Narula and Driffield 2012), some SMNEs may be able to derive advantage(s) from FSA_T at GSC. The greater the number of countries that the SMNEs operate in with production facilities, the more likely it is that the SMNEs will be able to derive an advantage from FSA_T associated with GSC.[32]

With advantage(s) derived from FSA_T at GSC, SMNEs may have more options in hand that may include internalized input material production by the headquarters, and/or other subsidiaries in other locations within the same or different countries, or outsourced / offshored production by the regional/global input material suppliers. A

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[31] The term 'economies of common governance' refers to one of the outcomes of FSA_T (Dunning 1988; Lundan 2009). MNEs achieve the economies of common governance, i.e.; the unique ability to acquire and disseminate knowledge and information about both input and output markets at reduced costs and use the same to organize operations more efficiently (Narula and Dunning 2000; Narula et al. 2019).

[32] One of the proxies used for the degree of multinationality is the simple count of countries where MNEs operate in (Ramaswamy 1995; Tallman and Li 1996; Yang et al. 2013).

number of choices become available for the MNEs to choose from - a) from an organizational point of view - insourcing vs. outsourcing, and b) from a locational point of view - onshore vs. offshore (Kotabe and Mudambi 2009). Athukorala (1995) states that MNEs with ties in international production networks are better positioned to select optimal input material suppliers from around the globe. However, in the recent past, MNEs have moved away from short-term arm's length relationships to long-term contractual relationships with relatively reduced number of reliable and capable input material suppliers (Imrie and Morris 1992) and some even started relying on single sourcing from a large capable external suppliers to achieve both scale economies and bargaining power (Kotabe and Mudambi 2009). Thus, MNEs enjoy strong bargaining power over their domestic rivals by virtue of their size and their ability to procure input materials from a wider range of alternative sources beyond the host countries' national boundaries in case domestic input material suppliers are unavailable or unable to meet the standards (Driffield et al. 2002) or in case they fail to reach out to domestic input material suppliers due to deficiencies in their FSA_T at SSC.

We argue that the SMNEs that are able to derive advantage(s) from FSA_T at GSC may afford to create fewer linkages than the domestic supplier firms. As long as the deficiencies in FSA_T at SSC persist, advantage(s) derived from FSA_T at GSC enables such SMNEs to remain cost competitive despite creating fewer linkages than the domestic supplier firms. Without superior means of alternative input material sourcing, SMNEs that fall short of FSA_T at SSC otherwise may face substantial disadvantage relative to the domestic supplier firms. Under which circumstances, such SMNEs may not enter the host countries or may have to exit the host markets at some point in time.

Our second hypothesis follows from the above:

H2: SMNEs that can derive advantage(s) from FSA_T at GSC based on multinationality may remain cost competitive despite creating fewer linkages.

5.4 Data:

We gain access to a firm level dataset from Bangladesh Export Processing Zones Authority (BEPZA) on various EPZs in Bangladesh. Since 1983, BEPZA has developed eight EPZs located in various parts of the country. In each EPZ, there is a mix of SMNEs,

and domestic supplier firms. All firms belong to the labor-intensive segment of supplier firms along the GVCs and remain limited to the export-oriented labor-intensive manufacturing function. There are altogether 464 firms currently operating in these eight EPZs. All the operating units are afforded the same benefits in terms of tax holidays and governed under the same set of labor and environmental laws. Irrespective of the industrial sector, all units operate under a homogenous environment. We obtain data on value of exports, local and foreign procurement, book value of cumulative investments, employment level, industrial sector, firm age, ownership type and country of origin for 370 among these 464 firms. The data for the remaining firms are either missing or incomplete.

In 2016, the 370 firms for which we obtained data exported almost USD 6.5 billion worth of goods from BEPZA. Average export amount per firm was USD 17.5 million and average employment level per firm was 1,139. There were a few firms among these, whose export values or employment levels were quite small (less than USD 1 million and employment level less than 50). We consider these firms to be outliers. We also exclude the only wholly owned subsidiary (WOS) of the Japanese watchmaker Seiko (i.e.; a lead MNE, not an SMNE) as an outlier since all other firms in our sample belong to the segment of supplier firms. We also exclude 3 firms for which we fail to obtain the local procurement data. Therefore, our final sample size for the data that we obtain from BEPZA stands at 278 firms.

The average employment level at the firms in our sample was over 1,451 and the average export level of the same was USD 22.6 million. These 278 firms in our sample exported goods valued at around USD 6.4 billion. Therefore, our sample can be considered to be representative of the population. Notably, total value of exports from Bangladesh was around USD 35 billion in 2016. Thus the eight EPZs contribute over 18% of the total national exports. Separately, we collect data on 256 supplier firms out of the above 278 firms on the number of countries with production facilities. We use the number of countries with manufacturing units as the proxy of FSA_T at GSC based on the degree of multinationality from where advantage(s) may or may not be derived by the SMNEs.

Table 1: Summary statistics of key variables

Variable	Obs.	Mean	Std. Dev.	Min	Max
Exports (in million USD)	278	22.74	33.50	1.06	247.86
Procurement (in million USD)	278	12.70	17.35	0.20	117.55
Investments (in million USD)*	278	7.54	10.38	0.030	92.73
Firm Age (years)	278	13.06	7.32	2	33
Number of employees	278	1446	1962	52	14630
Garment related sector	278	72.3%	-	-	-
Ownership - 100% FDI (SMNE)	278	62.9%	-	-	-
Number of countries with production facilities	256	3.60	6.46	1	72

Note: * After depreciation. Data as of year 2016.

In Table 1, we report the summary statistics of our data. Almost two-thirds of the firms were SMNEs, with the others being domestic firms. Almost three quarters of the firms were engaged in ready-made garment, garment accessories and textile sector. The average procurement value was approximately USD 12.7 million.

We also obtain several years of cumulative investments data for the supplier firms, beginning in year 2010. This information was stored centrally at the BEPZA. However, for quite a few supplier firms not all 7 years (2010-2016) of data were available. We use investments as a proxy for the level of capital. These investments were primarily used for plant and equipment. In order to generate a suitable proxy of the book value of the capital stock for each firm, we assume an average straight-line depreciation rate based on the incremental investments in each of the previous 7 years. For the years prior to 2010, we impute the average annual investments based on the growth rate observed

during 2010-16. Since the majority of the supplier firms were in the garment sector, we enquire about the usual practices on depreciation in a few such firms. From our informal enquiries, we find that the average useful life can vary between 10-20 years depending on the function and quality of the machines, and that the usual salvage value is approximately 20%. Therefore, we assume a useful life of 15 years, with a salvage value of 20%. Based on these assumptions, the average capital level (investments excluding depreciation) was USD 7.49 million. The depreciation adjustment procedure is discussed in further details in Appendix 1.

5.4.1 Composition of the various EPZs

The EPZs vary in terms of number of operating units. The relatively larger EPZs were in Chittagong and Dhaka. These two EPZs were also older, and average age of the supplier firms was significantly longer than the average age of the supplier firms in the other EPZs. In our sample, total value of exports in 2016 from these larger EPZs was USD 4.45 billion, whereas exports from the other 5 relatively smaller EPZs were USD 1.9 billion. The sample size of operating units in the larger EPZs is 175 and in the smaller EPZs, it is 103. In Tables 2a and 2b, we report the descriptive statistics for the various EPZs.

Table 2a: Descriptive statistics by EPZs - exports, procurement investments, number of employees, and firm age

EPZ	Number of units	Mean				
		Exports (million USD)	Procurement (million USD)	Investments (million USD)	Number of employees	Age (years)
Relatively larger EPZs						
Chittagong	105	22.09	12.44	6.80	1699	17.41
Dhaka	70	30.17	15.48	8.58	1142	14.26

Relatively smaller EPZs						
Adamjee	30	16.85	9.05	7.16	1292	7.73
Comilla	21	14.11	8.83	7.02	1054	9.10
Ishwardi	8	13.68	15.48	5.68	827	6.50
Karnaphuli	29	25.38	14.22	9.58	1790	8.03
Mongla	7	9.50	7.73	1.95	193	6.86
Uttara	8	22.02	18.49	10.06	2857	6.13

Table 2b: Descriptive statistics by EPZs - industry and ownership

EPZ	**Proportion**	
	Garment sector	**SMNE**
Relatively larger EPZ		
Chittagong	73%	55%
Dhaka	86%	71%
Relatively smaller EPZ		
Adamjee	90%	63%
Comilla	67%	57%
Ishwardi	38%	63%
Karnaphuli	52%	76%
Mongla	29%	57%
Uttara	38%	63%

Note: Data as of 2016.

5.4.2 Key dependent variables

We developed hypotheses on the effect of foreign ownership on linkage and on cost competitiveness. In this section we report the results from multivariate analysis on these two variables. As the measure of linkage, we use the proportion of local procurement to total procurement. This is most widely used measure in the extant literature (McAleese and McDonald 1978; McDermott 1979; Gorg and Ruane 2001; Jindra et al 2009) among others. The construct suggests that the greater the proportion of local procurement, the greater the linkages created in the host country. Our main analysis is based on this approach. As the measure of cost competitiveness, we use the proportion of cost of goods sold to export revenue. In this case also, such a measure is widely used.

We hypothesize that both linkage and cost competitiveness would vary by ownership type. Thus, it is useful to see whether the averages of these two variables vary by ownership at the aggregate level, without controlling for any other firm attributes. The firms in these EPZs were of three different types of ownership. A majority of the firms operated under 100% foreign ownership. We use SMNE to denote these firms. Among the others, there were firms with joint foreign and domestic ownership, and there were firms with 100% local ownership. The firms that were of joint ownership type did not have operations in other countries. Therefore, we put these firms in the same group as 100% local ownership type. In Tables 3a and 3b, we report the means comparison tests for linkage and cost competitiveness, respectively.

Table 3a: Proportions comparison – DV: proportion of local procurement to total procurement

		Number of firms	Mean		Difference		H_0: Diff.=0
			Estimate	Std. Error	Est.	Std. Error	Significance
All firms	SMNE	175	16.54%	1.57%	-12.39%	2.89%	***
	Domestic	103	28.92%	2.67%			
Garment	SMNE	112	18.17%	2.11%	-11.90%	3.48%	***

sector	Domestic	89	30.07%	2.87%			
Large EPZs	SMNE	108	19.44%	2.20%	14.06%	3.89%	***
	Domestic	67	33.50%	3.44%			

Note: ***, ** denote significance at 1% and 5% levels

Table 3b: Means comparison – DV: Cost competitiveness (proportion of cost of goods sold to export revenue)

		Number of firms	Mean		Difference		H_0: Diff.=0
			Est.	Std. Error	Est.	Std. Error	Significance
All firms	SMNE	175	59.7%	1.9%	-2.1%	2.8%	Insignificant
	Domestic	103	61.8%	1.9%			
Garment sector	SMNE	112	54.9%	1.8%	-5.5%	2.7%	Insignificant
	Domestic	89	60.4%	2.1%			
Large EPZs	SMNE	108	58.6%	2.4%	2.7%	3%	Insignificant
	Domestic	67	61.2%	1.8%			

Note: ***, ** denote significance at 1% and 5% level.

Comparison of mean linkages shows that, on an average, SMNEs create fewer linkages than the domestic supplier firms. The same result holds when we consider only the supplier firms from the garment sector and firms from the larger EPZs. With regard to cost competitiveness, we see that SMNEs have greater degree of competitiveness (lower proportion of export revenue is spent on cost of goods sold). However, these differences are generally not significant. Therefore, while the above univariate analysis are weakly consistent with our hypotheses, it is important to conduct a more rigorous multivariate analysis.

5.5 Empirical model and results:

5.5.1 Empirical models for multivariate analysis

In this section, we report the results from multivariate analysis on the two key dependent variables – linkage and cost competitiveness. Both the linkage measure and the cost competitiveness measure defined as above are fractional variables bounded by 0 and 1 by construction. Thus, a linear regression model is not appropriate for estimation purposes. Following Papke and Wooldridge (1996), we use the fractional logit model for estimating the effect of SMNE on linkages. We assume the following relationship between our DV and the explanatory variables:

$$E[Y_i] = G(X_i\beta) \dots (1)$$

In the above equation, Y is the fractional dependent variable, and the above equation models the conditional expectation of Y as a function of the explanatory variables X. The function $G(.)$ is called the link function, and typically a cumulative distribution function (cdf) is used as $G(.)$. If the normal cdf is used then the above model is a fractional probit model, and if logistic function is used then the above model is fractional logit model. Note that the function $G(.)$ is monotonically increasing function of its argument, and therefore if the coefficient β on X is positive then the expected Y increases with X. However, unlike the OLS model, the coefficient on X does not reflect the change in the conditional expectation of Y due to a change in X. For this, we need to estimate the marginal effect. From (1), we get, $\partial E[Y_i]/\partial X_{1i} = G'(X_i\beta)\beta_1$, where β_1 is the coefficient on the variable X_1. However, if X_1 is discrete, then the effect on $E[Y_i]$ due to a change in X_1 from 0 to 1, would be $G(X\beta|X_1 = 1) - G(X\beta|X_1 = 0)$. Therefore,

$G(\beta X) = \exp(\beta X)/(1+\exp(\beta X))$ and the marginal effect depends on the values of all other significant variables and their coefficients.

In our context, the dependent variable Y_i denotes either the proportion of local procurement relative to total procurement by firm i or the proportion of cost of goods sold to export revenue of firm i. X_i denotes the set of characteristics that we used as control variables. This set includes three continuous variables - age, capital level, employment level of firm i. The set also includes two dummy variables indicating whether the firm is located in a large EPZ, and whether the firm is in the garment sector or not. In addition, we put a dummy variable indicating whether a firm is an SMNE or not.

Thus, the model is as follows:

$$E[Y_i] = G(\beta_0 + X_i\beta_1 + \beta_2 SMNE_i) \dots (2)$$

Note that we did not include exports level as an explanatory variable, as this variable would be endogenous. Typically, this variable is used to capture the size of the firm. Since we include capital investment level and employment level as explanatory variables, leaving out exports is not problematic. The firm size effects are captured by the two input variables (capital and labor). Also note that continuous control variables are log-transformed, as is usually the practice in empirical analysis.

The first hypothesis (H1) can be tested by examining the parameter β_2 with Y_i being the linkage measure . Following this hypothesis, we expect $\beta_2 < 0$. This is because we expect the SMNEs to create fewer linkages compared to the domestic supplier firms.

The second hypothesis (H2) suggests that the extent of FSA_T at GSC moderates the effect of SMNE on cost competitiveness. To test this, we include an interaction variable between SMNE indicator and the number of countries where they operate in with production facilities. The number of countries with production units is a proxy for FSA_T

at GSC based on the degree of multinationality. Essentially, we assume that the more countries an SMNE operates in with production facilities, the more likely it is that the SMNE will possess advantage(s) from FSA_T at GSC. Of course, this variable takes a value 0 for the domestic supplier firms. Thus, the model can be written as:

$$E[Y_i] = G(\ \beta_0 + X_i\beta_1 + \beta_2 SMNE_i + \beta_3 SMNE_i \times C_i) \ldots (3)$$

Where, Y_i denotes cost competitiveness measure, C_i denotes the variable number of countries with production units. In this model, if the coefficient on the interaction variable between SMNE indicator and the number of countries with production facility (β_3) is positive (negative) and significant, then it would indicate that SMNEs face greater (lower) costs for their goods sold as a proportion of export revenue.

5.5.2 Empirical findings

Effect on linkage: We estimate the models in equation (1) with the linkage measure as the DV and report the results in Table 4. In columns (1)-(2), we report the estimates for the models using the full sample, and in columns (3)-(4), we report the estimates for the same models using the subsample on the garment sector. The garment sector comprised of 72.3% of the firms in our sample. Therefore, even with this subset of firms we have a reasonable sample size to conduct the regression analyses. Examining the firms only from one sector is advantageous, since it reduces the scope of unobserved heterogeneity among the firms. Comparing the estimates using the full sample and a subsample also allows us to check the parameter stability to some extent. The difference between columns (1) and (2) is that in the latter we included exports as an additional explanatory variable. The difference between columns (3) and (4) is the also the same.

First, consider the results reported in column (1). The coefficient of SMNE in the first specification is estimated to be -0.580 (s.e 0.214) and it is significant at 1% level. This indicates that SMNEs in our sample create fewer linkages than the domestic supplier firms. This result is consistent with hypothesis H1. Using the subsample on garment (specification 3), we observe that the coefficient on SMNE is -0.613 (s.e. 0.231) and significant at 1% level. This is similar to what we find with the full sample.

We also included several characteristics of the firms as control variables. These are firm age, capital level, employment level, size of EPZ and major industrial sector such as garment. What is important to note is that despite controlling for these several factors, we find that the SMNEs create significantly fewer linkages than the domestic supplier firms. In columns (2) and (4) we included exports as an additional control variable. It turns out that the effect of SMNE on linkage is unchanged even after the inclusion of exports as an additional control variable.

Table 4: Proportion of local procurement analysis – fractional logit model

DV: Proportion of local procurement	Full sample		Garment sector sample	
	(1)	(2)	(3)	(4)
Firm age	0.284*	0.283*	0.382**	0.376**
	(0.170)	(0.171)	(0.188)	(0.191)
Capital level	-0.282***	-0.235**	-0.324***	-0.249**
	(0.099)	(0.110)	(0.107)	(0.123)
Employment level	0.205***	0.265***	0.228***	0.300***
	(0.079)	(0.087)	(0.078)	(0.089)
Large EPZ	0.309	0.347	0.073	0.151
	(0.221)	(0.220)	(0.232)	(0.228)
Garment	0.332	0.344		
	(0.212)	(0.211)		
SMNE	-0.549***	-0.537***	-0.535***	-0.523***

	(0.189)	(0.187)	(0.204)	(0.201)
Exports		-0.006**		-0.007**
		(0.003)		(0.004)
Constant	0.751	-0.266	1.471	-0.012
	(1.229)	(1.549)	(1.449)	(1.884)
Observations	278	256	201	187
Pseudo-R-squared	5.2%	5.4%	4.9%	5.3%

Notes: # refers to number of countries with production units. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Amount of local procurement, firm age, capital, employment, and number of countries with production units are log-transformed.

Effect on cost competitiveness: We estimated the model in equation (3) with cost competitiveness measure as the DV. The estimates are reported in Table 5. As explained in the previous subsection, this general model allows us to examine whether SMNE effect on competitiveness is moderated by the extent of FSA_T at GSC through the degree of multinationality. As with the case with linkage, we report estimates for two subsets of the sample. In columns (1)-(3) we report estimates from 3 specifications using data from all sectors, and in columns (4)-(6) we report estimates from 3 specifications using data from only garment sector. In columns (1) and (4) we only include SMNE. In columns (2) and (5) we include SMNE and SMNE interacted with the number of countries with production facilities, which is our proxy for FSA_T at GSC. In columns (3) and (6) we include exports as an additional regressor.

Table 5: Cost-competitiveness – fractional logit model

DV:	Cost	Full sample	Garments sector sample

competitiveness	(1)	(2)	(3)	(4)	(5)	(6)
Firm age	0.122	0.133*	0.133*	0.140	0.154*	0.152*
	(0.077)	(0.078)	(0.077)	(0.092)	(0.091)	(0.089)
Capital level	0.085**	0.083**	0.095**	0.097**	0.100**	0.118***
	(0.038)	(0.038)	(0.038)	(0.044)	(0.044)	(0.045)
Employment level	-0.071*	-0.068*	-0.049	-0.081*	-0.086*	-0.065
	(0.040)	(0.041)	(0.048)	(0.045)	(0.046)	(0.054)
Large EPZ	0.029	0.035	0.047	0.019	0.012	0.033
	(0.087)	(0.087)	(0.088)	(0.105)	(0.105)	(0.110)
Garment	-0.387***	-0.358***	-0.355***			
	(0.088)	(0.088)	(0.088)			
SMNE	-0.233***	0.043	0.019	-0.244**	0.056	0.028
	(0.088)	(0.148)	(0.152)	(0.102)	(0.164)	(0.168)
SMNExC		-0.173**	-0.154*		-0.185**	-0.164*
		(0.082)	(0.085)		(0.086)	(0.090)
Exports			-0.002			-0.002
			(0.001)			(0.001)
Constant	-0.420	-0.460	-0.745	-0.947	-0.995*	-1.383**
	(0.479)	(0.481)	(0.558)	(0.581)	(0.575)	(0.699)

Observations	266	257	257	196	190	190
Pseudo-R-squared	6.9%	7.3%	7.5%	4.4%	5.9%	6.1%

Notes: # refers to number of countries with production units. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Amount of local procurement, firm age, capital, employment, and number of countries with production units are log-transformed. Estimates are based on data with the DV measure between 0 and 1.

The coefficient on SMNE in this model is estimated to be significant and negative in columns (1) and (4), i.e., with both full sample and the garment sector subsample when FSA_T at GSC and exports are not included respectively. However, the coefficient on the interaction variable between SMNE and FSA_T at GSC based on the degree of multinationality is significant and estimated to be -0.173 (s.e. 0.082) with full sample and -0.185 (0.086) with the garment sector subsample. Therefore, the negative effect of SMNE that we found with the first specification is completely explained by the FSA_T at GSC based on the degree of multinationality. The greater the effect of FSA_T at GSC based on the degree of multinationality of an SMNE, the less is the proportion of cost of goods sold to export revenue. In other words, the greater the degree of multinationality, the greater the cost competitiveness, as hypothesized in H2. In columns (3) and (6) we include exports, but inclusion of this additional control variable does not affect the estimates significantly. The size and significance of the coefficients on SMNE x C remain the same. This is entirely consistent with our hypothesis H2.

5.5.3 Robustness check

SMNE effect on linkage: While proportion of local procurement is the most widely used measure of linkage, Rodriquez-Clare (1996) considers an alternative measure of linkage, namely linkage coefficient.[33] This measure is calculated by per employee local input. In

[33] Rodriguez-Clare (1996) claims that if local linkage is interpreted to be per employee procurement of local inputs under the conditions of non-tradability of the specialized inputs, increasing returns to scale,

Table 6, we report the results from a linear regression model to estimate the effect of SMNE on linkage coefficient.

Table 6: Per employee local procurement analysis – linear regression model

DV: Proportion of local procurement	Full sample		Garment sector sample	
	(1)	(2)	(3)	(4)
Firm age	0.147	0.152	0.030	0.043
	(0.193)	(0.191)	(0.213)	(0.212)
Capital level	0.072	-0.000	0.045	-0.037
	(0.099)	(0.103)	(0.113)	(0.122)
Employment level	-0.002	-0.101	0.050	-0.035
	(0.097)	(0.105)	(0.104)	(0.114)
Large EPZ	0.657***	0.587**	0.653**	0.563**
	(0.243)	(0.243)	(0.272)	(0.275)
Garment	0.021	-0.005		

and love of variety of inputs, MNEs may create more linkages than the domestic firms. An interesting study by Alfaro et al. (2004) examine data from four Latin American countries to show two different sets of results on MNE linkages by using the two different measures of MNE linkages. This study shows that if the ratio of local to total procurement is used, then the MNEs create fewer linkages than the domestic firms, and if the per employee local input is used, MNEs create more linkages in three out of four countries.

	(0.237)	(0.236)		
SMNE	-0.763***	-0.776***	-0.581**	-0.587**
	(0.219)	(0.217)	(0.231)	(0.230)
Exports		0.009**		0.007*
		(0.004)		(0.004)
Constant	-8.494***	-6.883***	-8.222***	-6.548***
	(1.276)	(1.443)	(1.542)	(1.810)
Observations	262	262	193	193
Pseudo-R-squared	10.2%	12.0%	7.4%	8.8%

Notes: # refers to number of countries with production units. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Per employee local input to output, firm age, capital, employment, and number of countries with production units are log-transformed. There is a loss of 4 observations for firms without any local input due to log transformation.

We report the estimates generated from the above regression models using full sample in columns 1 and 2 and using the garment sector subsample in columns 3 and 4, as we did in Table 4. The first specification estimates show that SMNEs generally use less local input per employee. The coefficient on SMNE is -0.763 (s.e. 0.219) with full sample and -0.581 (s.e. 0.231) with the garment sector subsample (specifications 1 and 3, respectively). These estimates do not change significantly when export is included as an additional regressor (specification 2 and 4). These results are consistent with what we found with proportion of local procurement as the DV (the more popularly used measure of linkage). Thus, this indicates that the results are robust to alternative measures of linkage.

Effect of SMNE on cost competitiveness: To test the robustness of the results with cost-competitiveness as the DV, we generated estimates using a linear regression model

in addition to the fractional regression model (results discussed in the previous subsection). In Table 7, we report the results from the linear regression model.

Table 7: Cost-competitiveness – linear regression model

DV: Cost competitiveness	Full sample			Garments sector sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Firm age	0.030	0.032*	0.032*	0.034	0.038*	0.037*
	(0.019)	(0.019)	(0.019)	(0.023)	(0.022)	(0.022)
Capital level	0.021**	0.020**	0.023**	0.024**	0.025**	0.029**
	(0.009)	(0.009)	(0.010)	(0.012)	(0.012)	(0.013)
Employment level	-0.017*	-0.016*	-0.012	-0.020*	-0.021**	-0.016
	(0.009)	(0.009)	(0.010)	(0.011)	(0.011)	(0.012)
Large EPZ	0.007	0.008	0.011	0.005	0.003	0.008
	(0.024)	(0.024)	(0.024)	(0.029)	(0.029)	(0.029)
Garment	-0.093***	-0.086***	-0.085***			
	(0.023)	(0.023)	(0.023)			
SMNE	-0.057***	0.011	0.005	-0.060**	0.014	0.007
	(0.021)	(0.037)	(0.038)	(0.024)	(0.042)	(0.042)
SMNExC		-0.043*	-0.038*		-0.046*	-0.040
		(0.022)	(0.022)		(0.024)	(0.025)
Exports			-0.000			-0.000

			(0.000)			(0.000)
Constant	0.398***	0.390***	0.320**	0.267*	0.256	0.160
	(0.123)	(0.122)	(0.137)	(0.161)	(0.160)	(0.186)
Observations	266	257	257	196	190	190
Pseudo-R-squared	9.4%	10.3%	10.8%	6.0%	7.3%	7.8%

Notes: # refers to number of countries with production units. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Firm age, capital, employment, and number of countries with production units are log-transformed. Estimates are based on data with the DV measure between 0 and 1.

The coefficient on SMNE is negative and significant in specifications 1 and 4. Recall that in these two specifications we do not include FSA_T at GSC based on the degree of multinationality (C). When we include C, the coefficient on the interaction term turns out to be significant and negative in specifications (2), (3) and (5), but not significant but negative in specification (6). The difference between specifications (2) and (3) is that in specification (3) we include exports as an additional regressor. Similarly in specification (5) we do not have exports, but in specification (6) we do have exports. In general, these results are consistent with those reported in Table 5.

In summary, the results that we obtain from our main analysis based on the proportion of local procurement seem to be robust even by using the alternative approach of linkage per employee as proposed by Rodriguez-Clare (1996). And the results that we obtain from cost competitiveness using a fractional logit model are robust to alternative estimator, namely, a linear regression model.

5.6 Discussion along with Theoretical, Policy and Managerial Implications:

The generally accepted notion in the IB literature is that the MNEs create fewer linkages than the domestic firms. However, such arguments in the extant literature have

primarily been placed in the context of technology or knowledge-intensive sectors, where the MNEs are required to use specialized input materials. In the labor-intensive sectors, such specialized input materials are not prevalent. We conduct a critical examination of the characteristics of SMNEs that operate in the labor-intensive manufacturing function along the GVCs and propose several hypotheses related to backward linkages created by such SMNEs.

These SMNEs typically need simple, low-tech, and undifferentiated input materials that are widely available locally. With well-functioning local input material markets and adequate familiarity with the host country, SMNEs are not expected to procure input materials from abroad that are locally available. SMNEs in the labor-intensive sectors primarily rely on FSA_T at SSC to create linkages. But due to inadequacy of the level of local knowledge, SMNEs are likely to encounter deficiencies in FSA_T at SSC. We, therefore, hypothesize that the SMNEs may create fewer linkages than the domestic supplier firms. However, deficiencies in FSA_T at SSC may be overcome by the strength in FSA_T at GSC. Our second hypothesis states that a greater degree of multinationality allows these SMNEs to exploit their GSCs to overcome the shortfall in FSA_T at SSC.

We examine these hypotheses using a dataset obtained from the BEPZA that manages several export processing zones in Bangladesh. The data consists of information on various characteristics of around 278 supplier firms with a mix of SMNEs and domestic supplier firms including the amount of local procurement by these supplier firms. Since all these supplier firms are located in a homogenous location, with the same laws and regulations applying for all, we believe that this is an appropriate set of data to test our hypotheses. Our empirical results reported in section 5, support all our hypotheses.

5.6.1 Theoretical implications

Our paper has important theoretical implications. In the extant literature on MNE linkages, no study has, so far, been found that has tried to explain MNE linkages in the light of FSA theory in the context of the labor-intensive sectors. The paper has shown that FSAs, particularly, FSA_T at both SSC and GSC can fully explain MNE linkages in the labor-intensive sectors. SMNEs in the labor-intensive sectors primarily rely on FSA_T at SSC. We have shown that due to the lack of local knowledge particularly about the

domestic input material markets, SMNEs are likely to encounter deficiencies in FSA_T at SSC leading to creating fewer linkages than the domestic supplier firms. We have also shown that the deficiencies in FSA_T at SSC may be overcome by the advantage(s) derived from FSA_T at GSC based on the degree of multinationality. All of that has been done with the help of FSA theory and supported by empirical evidence from Bangladesh. This has been a novel contribution that may add to the knowledge in the field of IB.

5.6.2 Policy implications

Our finding points to a few policy implications. In our view, policy support should focus on the SMNEs that currently create fewer linkages than the Domestic supplier firms. Disseminating information about the domestic input material suppliers specifically targeting the SMNEs may reduce the prevailing information asymmetry. SMNEs will then be able to gather more local knowledge about the available and willing domestic input suppliers. Matchmaking initiatives between these SMNEs and the domestic input material suppliers may also be considered useful. Bringing both parties closer will increase the possibility of mutual cooperation. Supply side intervention may include encouraging the domestic input material suppliers to join the GVCs that are orchestrated by such SMNEs. To do so successfully, policymakers should focus on improving upon the weak national innovation system (educational institutions, vocational training centers, research labs etc.) prevailing in most of the developing countries. With well-developed domestic input material markets, SMNEs with the tendency to procure from abroad could possibly be encouraged to move towards possessing incremental FSA_T at SSC rather than relying on their FSA_T at GSC. By gradually shifting reliance from GSC to SSC, SMNEs may be able to achieve lower levels of both - a) cost of input materials, and b) lead time required for getting delivery of the same. Particularly, in the developing countries, especially, where unemployment problem prevails, more and more SMNEs possessing efficient and effective SSC may be considered a blessing. Amid increased demand from the SMNEs, domestic input material suppliers' business would grow leading to the creation of more employment opportunities.

5.6.3 Managerial implications

Our findings have managerial implications too. MNE linkages are mutually beneficial for both MNEs and domestic input material suppliers. From SMNEs' point of view, sourcing from the domestic markets for input materials is important to remain competitive since it can reduce costs as well as the lead-time. The ultimate goal of the managers at the SMNE that currently create fewer linkages than the domestic supplier firms should focus on acquiring incremental local knowledge to improve upon the deficiencies in FSA_T at SSC. Expediting the process of reducing reliance on the advantage(s) derived from FSA_T at GSC may save costs and improve upon the speed of delivery. From domestic input material suppliers' point of view, SMNE linkages may provide opportunities to gain access to the global markets, increased revenue, income and employment, and enhance the potential to upgrading through technology and knowledge transfers. Therefore, it is imperative for the domestic input material suppliers to undertake increased efforts to join the GVCs that are particularly orchestrated by the SMNEs that currently create significantly fewer linkages than the domestic supplier firms even after gaining several years of experience in the host country. Making themselves more visible to these SMNEs by taking advantage of modern communication medium such as well-developed websites, search engine optimization, phone calls, emails, online product presentations, arranging occasional visits to factories/offices etc. may be considered useful.

5.7 Conclusion:

At the outset, we mentioned that while there are several important studies on MNE linkages in the IB literature, there are two glaring gaps. First, the majority of these studies are on technology or knowledge-intensive sectors with little discussion on labor-intensive sectors. Second, there are not many empirical studies examining the role of FSAs in MNE linkages, in general. In this research, we have developed and empirically tested the role of FSA_T in determining linkage decisions by SMNEs that operate in the supply side of the GVCs and in the labor-intensive sectors. As and when SMNEs create fewer linkages than the domestic supplier firms due to deficiencies in FSA_T at SSC, strength in FSA_T at GSC help to overcome such deficiencies. This has not been discussed in the extant literature. Our research attempts to shed some light on a previously

ignored area, despite such sectors being important for a large majority of the developing economies.

To the best of our knowledge, this is the first study on SMNEs' effect on linkages, both theoretically and empirically. Our results indicate that, unlike in the technology-intensive sectors, the pertinent FSAs for SMNE linkages (in the labor-intensive sectors with well-developed input material markets) are FSA_T at both SSC and GSC.

Our discussions and empirical analyses reveal that FSA_T at both SSC and GSC can fully explain the variation in linkages created by SMNEs in the labor-intensive sectors. We find that the SMNEs that have minimal presence in other countries create more local linkages relative to the SMNEs that have larger presence in other countries. Our explanation of this phenomenon is that SMNEs with larger presence globally are able to rely on their ability to derive advantage(s) from FSA_T at GSC to remain cost competitive in the host countries.

The main limitation of this study is that it examines how FSAs affect cost competitiveness of the SMNEs while creating linkages in the export-oriented sectors only. This has both advantages and disadvantages. The primary advantage is that our empirical study is based on a fairly homogeneous set of firms, operating under the same economic conditions and operating mostly in one dominant sector. This makes our results robust. On the other hand, the primary disadvantage is that the results may not be generalizable to the contexts where the SMNEs cater to the local markets. Therefore, it would be fruitful to conduct research in such contexts in the future to help broaden our understanding of SMNE linkages.

Appendix 2

Depreciation adjustment procedure:

Let CI_t denote depreciation un-adjusted cumulative investment at year t. We have data on CI_t for the period 2010-2016. We find investment in year t, I_t. We find $I_t = CI_t - CI_{t-1}$, for $t = 2011, \dots, 2016$. We imputed I_t, for $t < 2011$ since the inception of the firm, by applying the average growth rate during 2011-2016. Therefore, for any year t prior to 2011, $I_t = CI_{t+1}.\left(\frac{1}{1+avg\ growth\ rate\ of\ CI\ during\ 2011-2016}\right)$. Once we imputed the CI_t and I_t for all the years, we applied the following formula to calculate the level of depreciated cumulative investments (the proxy for capital) at 2015. Note that if year t is more than 30 (15 x 2) years prior to 2015 (i.e t <1985}, then only 20% of the investment for that year is salvaged after the first 15 years, then 20% of this salvaged value is salvaged at the end of the 2nd 15 year period, following which this remaining value is depreciated using a straight line over 15 years over the remaining years in operation. If year t is between 15 and 29 years prior to 2015, then after the first 15 years of operation, only 20% of this investment is salvaged, following which the remaining this salvaged value is depreciated using a straight line over 15 years over the remaining years. If year t is less than 15 years prior to 2015, then the value of investment in that year is depreciated using a straight line over 15 years over the remaining years in operation. The above arguments are reflected in the following equation:

$$K_{2015} = \sum_{t\in\{t<1985\}} I_t.(20\%)(20\%)(1-20\%).\left(\frac{(2015-t-30)}{15}\right) + \sum_{t\in\{1985\le t<2000\}} I_t.(20\%)(1-20\%).\left(\frac{(2015-t-15)}{15}\right) + \sum_{t\in\{2000\le t<2015\}} I_t.(1-20\%).\left(\frac{(2015-t)}{15}\right) + I_{2015}$$

Since, capital is a stock variable (balance sheet item), a more appropriate approximation of the capital used for the output generated through the year 2016, i.e. exports of 2016 (a flow variable or income statement item) is as follows:

$$K_{2016} = K_{2015} + 0.5I_{2016}.$$

In other words, we assume that half of the investments during the year 2016 were converted into machinery (or other assets) that became a part of the capital stock that was utilized for output in 2016.

Chapter Six: Paper 3 on Governance offering control without ownership: Internalization theory perspectives

Governance offering control without ownership in apparel global value chains: Internalization theory perspectives

Abstract:

Post Rana Plaza disaster in 2013, lead firms in apparel global value chains (GVCs) had to adopt a 'cascading compliance approach'. As a result, responsibility of GVC governance has no longer remained solely with the lead firms, rather it was split into two. We find that lead firms are governing up to tier 1 allowing the upgraded first tier supplier firms to govern in the remaining tiers. From internalization theory perspectives, we analyze such governance arrangement in a GVC setting to examine how lead firms without having any equity ownership are maintaining control over the suppliers in different tiers with the help of FSAs.

6.1 Introduction:

Early versions of internalization theory (Buckley and Casson 1976; Rugman 1981; Hennart 1982) kept the focus on hierarchy versus market dichotomy in governance. International business (IB) literature's predominant notion of control with ownership has now changed to a view that control is also possible without ownership. Especially, global value chain (GVC) literature since the 1990s has been dealing with governance modes that offer control without ownership (Gereffi 1994; Gereffi et al. 1994; Gereffi 1999; Gereffi et al. 2005). IB literature also made efforts to look beyond hierarchy and markets, e.g.; the alliance capitalism (Dunning 1995 and 1997; Narula and Dunning 1998; Narula 1999), the global factory (Buckley and Ghauri 2004; Buckley 2009, 2010, 2011, 2012 and 2018; Buckley and Strange 2015), the flagship firm (Rugman and D'Cruz 1997 and 2000) etc. New internalization theory with several extensions can now explain multinational enterprises' (MNEs') various economic activities and all the possible governance modes (Chi 2015) especially with 'an expanded focus on the MNE's network capabilities' (Kano 2018: 686). Although governance beyond hierarchy and market has often been referred to as the swollen middle (Hennart 1993), or the middle ground (Casson 2013), or quasi-internal (Cantwell and Narula 2001; Narula and Santangelo 2009), IB scholars need to further theorize on the above from internalization theory perspectives.

In the early 2013, a major industrial accident known worldwide as Rana Plaza disaster took place in Bangladesh. Rana Plaza, a multistoried complex hosting several apparel factories, collapsed (Rahman and Rahman 2019), which led to the demise of more than 1,100 workers and injuries to more than 2,500 workers (Lohmeyer and Schubler 2019; Bair et al. 2020). Following this tragic event, pressures from various stakeholders such as national and international NGOs, international organizations, labor unions, activists, consumers, and civil society mounted on the MNEs that were acting as the lead firms to put an end to the ongoing misery that was taking place in the apparel GVCs (Reinecke and Donaghey 2015). Lead firms had to adopt a 'cascading compliance approach' (Narula 2019).

Instead of dealing with a large number of suppliers in different tiers, lead firms started working with only fewer first tier supplier firms that were upgraded at the original equipment manufacturing (OEM) level. Under the cascading approach, lead firms directly monitored for compliance only in tier 1 and saved transaction costs without making compromises on their reputation (Narula 2019). OEM first tier suppliers are known as suppliers with full package capability to perform value-adding services in addition to the usual core manufacturing services (Frederick and Daly 2019). These OEM suppliers in tier 1 are to handle much more responsibilities on behalf of the lead firms including that of ensuring that monitoring cascades down the tiers 3 and 4 in addition to the usual monitoring for compliance in tier 2. A number of articles on cascading compliance approach have been published in recent years (e.g.; LeBaron 2020; LeBaron and Lister 2021; Van Assche and Brandl 2021; Fiske et al. 2022; Van Assche and Narula 2022; Soundararajan 2023). No research has been found in the extant literature that examines how the implementation of such an approach affects governance that allows the lead firms to control the entire GVCs without having any equity ownership. This paper aims to fill the above research gap.

Narula (2019) in one of his research notes indicated that with the implementation of a cascading compliance approach, there emerged a trend of partial internalization. He did not elaborate adequately on the overall changes in GVC governance that had emerged along the apparel GVCs. He did not also shed light on what has happened to the lead firms' control without ownership. Possibly, the scholar had limited data in hand to do so.

With in depth case study data collected from the same research context, we aim to answer the questions that were left unanswered. New internalization theory with 'newer and more precise concepts' of transactions costs and firm specific assets (FSAs) is now able to explain not only internalization but also other possible governance modes (Chi 2015: 634; Narula et al. 2019; Asmussen et al. 2022).

We seek answers to the following research questions - a) how has the implementation of cascading compliance affected GVC governance? and b) how the lead firms are able to maintain control without ownership along the GVCs? We base our analysis on GVC and IB literatures to examine the roles of transaction costs and FSAs while firms along the GVCs make decisions to choose a particular type of governance over the others and also to check how the lead firms maintain control without ownership over the suppliers not only in tier 1 but also in the other lower tiers.

We have chosen a pair of apparel GVCs as embedded cases - a British MNE orchestrates one while a Swedish MNE orchestrates the other. Besides, we examine eight Bangladeshi first tier supplier firms as embedded cases within the above pair of case studies. The reason for choosing Bangladesh as the context of our research is because of the country's importance in the global apparel market being considered as one of the top exporters of apparel items and also because the Rana Plaza disaster took place in Bangladesh.

Our findings contribute to both IB and GVC literatures. This paper builds, particularly, on Narula (2019) to examine the impact of implementing cascading compliance approach on GVC governance that offers control without ownership in the same empirical context. Explaining a dominant GVC phenomena of governance in externalized networks (Strange and Humphrey 2019) that IB scholars termed as quasi-internal (Cantwell and Narula 2001; Narula and Santangelo 2009) offering control without ownership from internalization theory perspectives can be considered as a novel contribution of this paper.

The remainder of the paper has been structured as follows: a) Section 6.2 presents a literature review to set the ground for our research, b) Section 6.3 spells out the methods, c) Section 6.4 reveals the findings on the governance arrangement and the

consequent control without ownership, d) Section 6.5 discusses some theoretical implications, whereas Section 6.6 points to some policy and managerial implications, and e) Section 6.7 concludes.

6.2 Literature Review:

The main focus of IB literature has, so far, been on MNE as a firm. Since more than last three decades, many MNEs have transformed themselves into the lead firms at the helm of some GVCs (McWilliam et al. 2020). The empirical context of this paper relates to labor-intensive GVCs in the apparel industry.

6.2.1 What is a cascading compliance approach?

Rana Plaza disaster has drawn global attention that led to some policy changes as well as shift in lead firms' compliance requirement in the apparel GVCs. Narula (2019) first used the term cascading compliance approach that he observed during a field trip in Bangladesh in 2018. Instead of dealing with many suppliers in different tiers, lead firms after Rana Plaza disaster started directly monitoring for stricter social compliance only in tier 1 and asked the OEM first tier supplier firms to ensure that the same cascades down the lower tiers. This move saved the lead firms transaction costs on account of monitoring a large number of suppliers in different tiers. In case of need, lead firms have to relook at the contractual arrangements with the suppliers and strengthen existing relationship with the strategic partners (Kano et al. 2022). Lead firms' decision to work exclusively with the OEM suppliers in tier 1 and entrusting them with the implementation of cascading compliance approach in the lower tiers was such a move.

OEM suppliers are often contractually bound to do more on behalf of the lead firms, and therefore, known as full package suppliers. Under the new approach, lead firms directly monitored fewer first tier suppliers along with instructions on how to deal with the suppliers in the lower tiers (Narula 2019; Fiske et al. 2022). Two mandatory instructions that came to the first tier supplier firms from the lead firms were - a) keep only the compliant suppliers, and b) keep no option of sub-contracting (Narula 2019). The responsibility was thus shifted to the OEM first tier supplier firms to monitor for

social compliance in tier 2 as well as to ensure that the compliance cascaded down the lower tiers (Soundararajan 2023).

Some scholars considered cascading compliance approach successful from a business point of view (Van Assche and Narula 2023) while others considered the impact of the same, from a societal point of view, moderate and non-conclusive (Van Assche and Brandl 2021). According to LeBaron (2020), certain important things are absent in cascading compliance approach. Issues like who should actually bear the cost burden of a cascading compliance approach and who is actually paying for it - are still matters of concern for most of the suppliers (Alghababsheh et al. 2020; Soundararajan 2023). Building on dynamic capabilities framework, Fiske et al. (2022) suggest that the lead firms in GVCs should have certain capabilities to succeed in cascading compliance. No research has, so far, investigated how the implementation of cascading compliance affects GVC governance and what happens to the lead firms' control without ownership. This paper aims to address this gap.

6.2.2 Governance and suppliers' upgrading in GVCs

According to new internalization theory, control and coordination mechanisms refer to as governance (Zeng et al. 2023). McWilliam et al. (2020: 1) define governance 'as the organization and control of GVCs'. According to Benito et al. (2019), governance means how economic activities are organized, who are the actors involved and how those actors are remunerated etc. Discussions on types of governance in IB literature remained limited to hierarchy versus market. Network type of governance was also discussed in industrial organization (IO) literature that prevail in between the above two (Gereffi et al. 2005). In transaction cost economics (TCE), governance modes that lie between hierarchy and market are termed as hybrid (Williamson 1996). IB literature referred to such governance as the swollen middle (Hannart 1993), the middle ground (Casson 2013) and the quasi-internal (Cantwell and Narula 2001; Narula and Santangleo 2009). In addition to hierarchy versus market at the two extremes, GVC literature proposes a theory on governance that further distinguishes the network type of governance - a) modular, b) relational, and c) captive (Gereffi et al. 2005).

There are four possibilities of economic upgrading along the GVCs - a) product upgrading, b) process upgrading, c) functional upgrading, and d) chain upgrading (For more details on upgrading, please refer to Humphrey and Schmitz 2000). In functional upgrading, supplier firms can take four positions such as a) cutting, making and trimming (CMT), b) original equipment manufacturing (OEM), c) original design manufacturing (ODM), and d) original brand manufacturing (OBM) depending on the roles they play (Gereffi 1999). CMT type of first tier supplier firms only perform the assembly job where lead firms or their agent/intermediaries provide all raw materials and components, financial services and logistics as well. First tier supplier firms at the OEM level have the capability to interpret designs and make samples from the design, source all required raw materials and components, check for quality, arrange logistics etc. in order to deliver the complete final product to the lead firms on time. OEM suppliers are known as suppliers with full package capability to perform value-adding services in addition to the usual core manufacturing services. The expectation of the lead firms is that their OEM first tier supplier firms are able to handle more responsibilities on their behalf (Frederick and Daly 2019). More detailed discussions on how suppliers in tier 1 upgrade from CMT to OEM level or even to further levels may be found in GVC literature (e.g.; Gereffi 1999; Frederick and Daly 2019; Pasquali et al. 2021)

Depending on the position of suppliers' functional upgrading, type of GVC governance may change. For example, lead firms use captive type of governance for the CMT or assembly type manufacturers, whereas they use relational type of governance for OEM or full package manufacturers (Gereffi et al. 2005).

6.2.3 Internalization theory and different governance modes

Internalization theory as proposed by Buckley and Casson (1976) focused on the dichotomy of hierarchy versus market in governance (Buckley et al. 2023). Hennart (1977 and 1982) applied Williamson's (1975) TCE concepts such as buyer uncertainty, asset specificity and bounded rationality in his version of internalization theory, and in addition, spoke about measurement and enforcement costs. Rugman (1981) in his version brought in both TCE and resource-based view (RBV) (Chi 2015) and focused on

the MNE as the unit of analysis by adopting a managerial point of view (Narula and Lee 2020). Later extensions touched upon cooperative arrangements such as the alliance capitalism (Dunning 1997), joint ventures (Hennart 1988) and MNEs' external networks such as the global factory (Buckley and Ghauri 2004; Buckley 2009, 2010, 2011, 2012 and 2018; Buckley and Strange 2015), and the flagship firm (Rugman and D'Cruz 1997 and 2000). New internalization theory with various extensions remain relevant in explaining MNEs' various economic activities and all the possible governance modes since progresses have been made in FSA theory and TCE (Chi 2015). Especially, new internalization theorists with valuable contributions (Benito et al. 2009; Buckley 2009, 2010, 2011, 2012, 2014 and 2016; Grøgaard and Verbeke 2012; Hennart 2009; Narula and Verbeke 2015; Rugman and Verbeke 1992, 2001, 2003a, b, and 2004; Verbeke 2013; Verbeke and Kano 2015 and 2016) brought 'an expanded focus on the MNE's network capabilities' (Kano 2018: 686).

Classifications of FSAs like a) asset type FSA (FSA_A) versus transaction type FSA (FSA_T) (Dunning 1988; Cantwell and Narula 2001; Dunning and Lundan 2008) versus recombinant type FSA (FSA_R) (Verbeke 2009; Hennart 2009), b) location bound FSAs versus non-location bound FSAs (Rugman and Verbeke 1992; Rugman and Verbeke 2005), and c) home country based FSAs versus subsidiary specific FSAs (Rugman and Verbeke 2001) together made important progress. Hennart's (2009) discussion on bundling of complementary FSAs of MNEs and that of the local partners in the host countries added a new dimension to new internalization theory. The main focus has moved towards recombination efforts to augment the FSAs of the MNEs or their partners (Narula and Verbeke 2015; Verbeke and Kano 2016). Mutual adaptations are needed when MNEs' non-location bound FSAs need to be melded with the supplier local firms' location bound FSAs across distant and diverse contexts (Pitelis and Verbeke 2007). A recent extension suggests that FSA_T are helpful for the MNEs in internalization as well as in 'externalization in the form of relationship -based contracting' (Narula et al. 2019: 1237).

MNEs transact complementary FSAs in the markets - a) for the FSAs, b) for services of the FSAs, and c) the firms with the FSAs (Hennart 2009; Verbeke 2013; Collinson and Narula 2014), and d) the inputs necessary to develop FSAs (Hennart 2020). The focus

has shifted to the complementary FSAs not only of the MNEs but also of all the other actors (Chi 2015). Narula et al. (2019: 1236) point to the fact that the complementary FSAs of the local firms in the host countries have remained relatively 'less well scrutinized'. Internalization theorists (Hennart 1988 and 1993; Chen 2010; Chi 1994) undertook theoretical works on governance beyond hierarchy and market with a view to exploiting such complementary FSAs. By extending the unit of analysis to network, new internalization theory has become capable of dealing with 'intra firm, inter firm or a combination of both' (Lee et al. 2021; Zeng et al. 2023). The erstwhile sole focus on structural governance later included the focus on managerial governance (Verbeke and Fariborzi 2019) and this new orientation brought in deeper understanding of MNEs' governance (Kano et al. 2022).

GVC governance theory as proposed by Gereffi et al. (2005) relied heavily on TCE (McWilliam et al. 2020). Internalization theory suggests that firms pick the most efficient governance mechanisms (Buckley and Casson 1976) and changes in governance usually occur based on efficiency considerations (Kano 2018). In recent times, Kano et al. (2022) define efficient governance that economizes on both bounded rationality[34] (Simon 1961) and bounded reliability[35] (Kano and Verbeke 2015), and that leads to an environment suitable for value creation (Verbeke and Kenworthy 2008). How firms' possession of FSAs affect GVC governance has not so far been discussed in the extant literature. According to Narula (2019), the capability to run efficient supplier networks within the GVCs is considered as one of the key FSAs of the lead firms. In addition to FSA_T, lead firms now search for the possibility of generating some FSA_R by undertaking various forms of recombination efforts. In changed scenarios, the role of FSA_R in orchestrating GVCs may be considered important. Lead firms within the GVCs

[34] Bounded rationality refers to the fact that there will always be limited information available at any point in time, and therefore, entrepreneurs and managers have to make decisions on the basis of available information.

[35] Bounded reliability refers to the fact that each economic actor is 'reliable, but only boundedly so' (Kano and Verbeke 2015: 3).

may have to make accommodations for their upgraded key suppliers having possession of some complementary FSAs to take governance responsibility. Changes may occur from time to time on who governs now and who will govern the GVCs in future by adopting which of the mode(s). The choice of governance in internalization theory is now viewed as a dynamic system where considerations of FSA, TCE, and distance/diversity etc. are included (Narula et al. 2019; Asmussen et al. 2022).

6.2.4 The matter of control with or without ownership

How to maintain control of the FSAs by retaining ownership is one of the key issues in internalization theory (Driffield et al. 2016). Narula (2019: 1631), views 'MNE as a firm where ownership and control were synonymous'. The rise of GVCs a few decades ago brought the issue of control without ownership to the fore. MNEs now control much more activities than they own and traditional firm boundaries are no longer relevant for assessing MNEs' spheres of control. GVC literature has more extensively examined the matter of control without ownership (Gereffi et al. 2005). The extant literature, in general, presents a simplified notion that wholly owned subsidiaries (WOS) offer more control, joint ventures (JVs) with partial ownership offer lesser control, and non-equity modes (NEMs) with no ownership offer the least (or almost zero) amount of control (Hill et al. 1990; Driscoll and Paliwoda 1997; Pan and Tse 2000). In reality, the relationship between the degree of ownership and the level of control may not be that simple due to the presence of institutions (Karhunen et al. 2008). Formal institutions such as legislation may affect the relationships between control and ownership that may vary between developed, developing, and least developed countries. MNEs with majority ownership may give away significant amount of control where local partners are more familiar with the informal institutions (Child 2002; Wong et al. 2005).

Not only ownership, but contract also offers some levels of control (Buckley and Casson 2019; Buckley et al. 2023). Contracts may supplement ownership to grant parties varying degrees of control. For example, in case of JVs and alliances, control rights may be allocated to one capable partner and / or sensitive information may be kept secret from the other (Chi and Zhao 2014) simply by having some written or unwritten contracts. In NEMs, control may be achieved without having any involvement of equity

ownership by means of some contracts (Erramilli and Rao 1993; Driscoll and Paliwoda 1997; Brown et al. 2003). In cases of luxury hotel business, ownership of the physical assets remains with one partner whereas management control remains with the other through some management contracts in place (Brown et al. 2003). Hart (1995) argues that ownership is considered a source of control rights when contracts are incomplete.

The matter of control is, in fact, a multidimensional construct (Yan and Luo 2001). Having full or partial ownership may not suffice, or even having some forms of contracts may be considered insufficient for the purpose of achieving effective levels of control. There are other factors that drew attention of the scholars. Not only the financial resources to acquire ownership rights, but commitment of technological and managerial resources that the MNEs make may also affect control rights (Yan and Child 2004). Resource commitments making crucial contributions towards businesses' success may have greater implications for the control rights (Karhunen et al. 2008). Another important aspect to consider is the MNEs' desire to control. An MNE may own 100% or majority of the shares in a company, but may not have the desire to control the international operations of the same (Child 2002). Sometimes, MNEs may exert control as per specific scope that are considered important, e.g.; finance, R&D, brand etc. In case of JVs and alliances, MNEs often gain more control by assigning managers in key positions (Schaan 1988).

Control refers to influences that originate from some powers in the top (Cardinal et al. 2017) whereas coordination refers to mutual adjustments in interdependencies (Srikanth and Puranam 2014). According to Zeng et al. (2023), control is about power and authority whereas coordination is about collaboration and interdependence. In intra-firm relationships, control is obtained mainly through top-down approach whereas in inter firm relationships, MNEs rely more on coordination to achieve some levels of control that are workable. Scholars more or less agree that absolute control is not possible to achieve, especially, in case of inter firm relationships. MNEs' control in internalization differs from that in externalization (Lunnan and McGaughey 2019), and therefore, scholars consider coordination important, particularly, for inter-firm relationships (Zeng et al. 2023). With increased trust, control efforts of the MNEs are usually relaxed (Tsui-auch and Möllering 2010).

From the viewpoint of the MNEs, the risks of opportunism remain ever present in the GVCs but everyone nowadays recognizes the importance of potential gains from interdependent relationships. The apprehension of the internalization theorists that control may not be achieved without ownership has changed to a view that workable control may be achieved without ownership. At the disposal of the lead firms, there are ways and means to deal with the problem of suppliers' opportunism. For example, lead firms closely monitor and supervise the suppliers to keep the 'overt signs of opportunism' contained (Benito et al. 2019: 1416). Moreover, outsourced monitoring and certification organizations are there who on behalf of the lead firms control some issues related to 'the quality and output' of the suppliers in different tiers (Asmussen et al. 2022: 1761). In addition, governance modes may be changed, governance responsibility may be split, contracts may be revised or renegotiated, and in extreme cases opportunistic suppliers may be excluded from the GVCs.

Strange and Humphrey (2019) identify four ways or mechanisms such as contracts, direct coordination, embedded coordination through product standards, and strategic alliances that the lead firms often use in absence of ownership in order to exert control in the entire GVCs. Are they effective when used in isolation or in combination, or in other words as substitutes or as complements to each other? It is important to understand which mechanism can substitute and which one can complement (Sigglekow 2002). Zeng et al. (2023) warn that where two substitute mechanisms are chosen instead of choosing a complementary mechanism, then the entire outcome may go wrong. According to Poppo and Zenger (2002), when contracts and relational governance are used in combination, it may result in better cooperation. The authors further argue that relational capital including trust facilitates negotiations when disputes arise, some changes take place, or the contracts expire. We argue that lead firms may be able to exert control over the first tier supplier firms, perhaps, through direct coordination in combination with a few more of the above ways that Strange and Humphrey (2019) spoke about. It remains yet unclear how lead firms may exert control over the suppliers in the lower tiers. Once the OEM first tier supplier firms with mandate from the lead firms start governing part of the GVCs, how the lead firms can

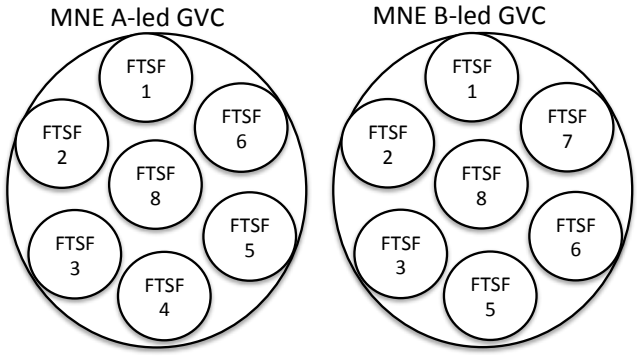
keep workable control over the suppliers in the lower tiers? This research aims to fill this gap from internalization theory perspectives.

6.3 Method: Embedded Case Study

Two apparel GVCs have been chosen as embedded cases (Yin 1989; Eisenhardt 1989). The first GVC is orchestrated by a large British MNE that we refer to as MNE A-led GVC, while a Swedish MNE orchestrates the other that we refer to as MNE B-led GVC. Both are buyer driven GVCs in the apparel industry. Table 1 illustrates firm characteristics of MNE A and MNE B that are under our study. This may be found in Appendix 3.

We examine eight first tier supplier firms in Bangladesh that are domestically owned. With two exceptions, all the first tier supplier firms are acting as suppliers to both of the GVCs. Two of these first tier supplier firms are suppliers to either of the MNEs. In order to maintain anonymity, we denote the first tier supplier firms under our study as FTSF 1, FTSF 2, FTSF 3, FTSF 4, FTSF 5, FTSF 6, FTSF 7 and FTSF 8.

Figure 6-I: Two embedded cases



Source: Author.

It may be noted that FTSF 4 works for MNE A-led GVC, not MNE B-led GVC, and FTSF 7 works for MNE B-led GVC, not MNE A-led GVC. The remaining six first tier supplier firms work for both of the GVCs. Out of the eight, two first tier supplier firms manufacture woven garment items - one does the tops and the other does the bottoms, four of them manufacture knitwear, and the remaining two manufacture sweaters. Table 2 illustrates various firm characteristics of the eight first tier supplier firms under our study that may be found in Appendix 3.

Case study data were collected mainly through interviews with nominated representatives of both the lead firms and owners/directors of the eight first tier supplier firms. Data related to firm characteristics for both lead and first tier supplier firms were collected from the publicly available information on their websites as well as from their privately held company documents.

6.4 Findings:

After the Rana Plaza disaster, sourcing strategies of both of the lead firms that are under our study have changed. They have chosen to work with fewer first tier supplier firms that have been upgraded at the OEM level instead of working with many suppliers in different tiers. Both report that they now work with fewer OEM suppliers in tier 1 who can do more than the CMT suppliers and no longer directly work with the suppliers in the lower tiers. With the new arrangement in place, OEM first tier supplier firms remain committed to deliver the full package and make alternative arrangements in case something goes wrong with suppliers in the lower tiers. Both lead firms consider OEM suppliers as their long-term partners with the expectation that complete product will be delivered by ensuring that all raw materials, components and services are available at the right time. The straightforward economic motivation for doing so was to contain transaction costs on account of increased requirement of additional monitoring of a larger number of suppliers in different tiers. Another motivation was to safeguard both lead firms' reputation that is being considered as one of their key FSAs. In addition, both adopted two principles that are mandatory at all levels - a) only compliant suppliers in

all tiers, and b) no sub contractors in any tiers. Table 3 illustrates the new sourcing strategy of the lead firms that may be found in Appendix 3.

Both lead firms procure six categories of products from Bangladesh such as a) woven tops, b) woven bottoms, c) knitwear, d) sweaters, e) jackets, and f) lingerie. At the moment, OEM first tier supplier firms in most cases specialize in one of the six categories and compete against each other within the respective categories. Table 4 illustrates a chart of suppliers in different tiers in typical apparel value chains spanning the six categories that both of our lead firms orchestrate in Bangladesh, which may be found in Appendix 3.

6.4.1 Split governance arrangement in the GVCs

Evidence suggests that the governance responsibility of the entire GVCs has been split between the lead and OEM first tier supplier firms. Both lead firms have chosen to govern up to tier 1 allowing the OEM first tier supplier firms to govern in the lower tiers. A representative from MNE A says-

'We only handle our OEM suppliers (in tier 1) and they handle the rest on our behalf.'

Evidence suggests that the lead firms continue to outsource as they possess FSA_T and /or FSA_R necessary to run network of suppliers and the reason for relying only on the OEM first tier supplier firms for outsourcing is to contain the rise in transaction costs. Whereas, the OEM first tier supplier firms partially internalize as and when FSA_T and /or FSA_R necessary to deal with the suppliers fall short or transaction costs rise while attempting to outsource.

6.4.1.1 Governance up to tier 1

Many first tier supplier firms have been excluded from the apparel GVCs and more will perhaps go out of business amid growing competitive pressures. But none of the lead firms have pursued partial or full internalization neither in tier 1 nor in the lower tiers. MNE A mainly relies on FSA_A associated with brand and distribution in the downstream whereas MNE B mainly relies on FSA_A associated with brand and distribution in the downstream as well as on FSA_A associated with design and development capabilities in the upstream. None of the lead firms have the expertise in manufacturing, i.e.; none

possess FSA_T associated with manufacturing capabilities. Moreover, both report weakness in FSA_T associated with local knowledge that may be necessary to run manufacturing operation in Bangladesh. Distances between the lead firms' respective home countries and Bangladesh have been significant. A representative from MNE B states -

'Globally, manufacturing is not our strength. Moreover, we are not as good as local firms in dealing with workers, unions, legal matters, bureaucracy etc. Therefore, we have not acquired any suppliers.'

To continue outsourcing of manufacturing operation in Bangladesh, both lead firms have chosen to tap into complementary FSAs of some OEM first tier supplier firms and recombine with their own sets of FSAs. If there were not adequate number of OEM suppliers available in Bangladesh at that time, both lead firms would have moved out elsewhere in search of complementary FSAs associated with manufacturing. Fortunately, enough first tier supplier firms were available in Bangladesh that were either at the OEM level already or else eager to move up to the OEM level. As switching cost has been quite low, both lead firms have the option to choose from a large number of OEM first tier suppliers. A trivial rise in transaction costs on account of direct monitoring in tier 1 and indirect monitoring in the lower tiers has been considered justifiable against the benefits of outsourcing from within the GVCs. The representative from MNE A states -

'We still consider outsourcing from OEM suppliers (in tier 1) better for us.'

Both lead firms have years of experience in orchestrating GVCs and thereby possess FSA_T and /or have the option to develop some FSA_R that are necessary to deal with the suppliers in different tiers. Both have already implemented cascading compliance approach in several other low-cost manufacturing countries such as China, Vietnam, Indonesia, Cambodia, Sri Lanka etc. where they continue to use OEM first supplier firms. By operating with OEM first tier supplier firms in a number of countries, these lead firms have managed to achieve some advantage(s) from FSA_T and /or FSA_R necessary to deal with the suppliers. The representative from MNE B states-

'In many other countries that offer low cost manufacturing, we have been dealing with suppliers for years. We are good at managing suppliers.'

Both lead firms report that they maintain rosters of OEM first tier supplier firms and no orders are placed beyond those rosters. They both make use of the rosters to govern the OEM suppliers in tier 1 who must be socially compliant. Lead firms' orders are placed to these compliant OEM first tier supplier firms on the basis of competitive prices, a specified lead time, and on the basis of respective production capacities as well. Lead firms first send requests for quotations (RFQs) to all the OEM first tier supplier firms that are eligible to work for a particular category. The lowest bidding OEM supplier is then further evaluated on the basis of whether or not it has the capacity to produce the entire order quantity within the specified lead time. If yes, then the entire order is placed to the lowest bidder. In case, the order quantity is more than the lowest bidder's production capacity, the remaining quantity is then offered to the other OEM first tier suppliers in the roster at the lowest quoted price to be delivered within the same lead time. If willing suppliers are more than the requirement, then orders are placed on the basis of past performance record. The representative from MNE A states -

'It's a transparent process. Compliant suppliers offering competitive prices and timely delivery get orders from us.'

Both lead firms report that they are maintaining fully functional country offices to procure from Bangladesh. More than hundred employees are deployed there for the purpose of directly and indirectly monitoring the suppliers in different tiers. In doing so, regular visits and periodical audits are conducted in all the OEM first tier supplier firms' premises. In key OEM first tier supplier firms' premises, dedicated inspectors are deployed to monitor issues related to economic performance, i.e.; quality, price and lead time as well as issues related to social and environmental compliance. Lead firms also report that they conduct few special audits in some of the lower tier supplier firms' premises on random / periodical / need basis. The purpose of such audits is either to confirm some suppliers' eligibility to be included in the lead firms' pools of enlisted suppliers or simply to check for cases of violations. The reports of the special audits are then shared with the OEM first tier supplier firms along with specific recommendations. Responsibility to take corrective measures or other necessary actions beyond tier 1 on

the basis of audit reports' recommendations are left with the first tier supplier firms. A representative from MNE B states -

'We have more than one hundred employees in our country office to closely monitor the OEM suppliers (in tier 1).'

In sum, amid increased requirement of monitoring in different tiers, lead firms have not internalized any of the suppliers in tier 1 or in the lower tiers due to the lack of FSA_T associated with manufacturing capabilities as well as FSA_T associated with local knowledge. Therefore, both lead firms have chosen to continue outsourcing from fewer OEM first tier suppliers not only due to the possession of FSA_T and /or FSA_R necessary to deal with the suppliers but also to contain increases in transaction costs. Both find outsourcing better than full or partial internalization on the basis of both TCE and FSA considerations.

6.4.1.2 Governance beyond tier 1

Out of eight first tier supplier firms, only two operate in the woven category, e.g.; FTSF 1 in bottom and FTSF 2 in tops sub categories; other four operate in the knitwear product category, e.g.; FTSF 3, FTSF 4, FTSF 5, and FTSF 6; and the remaining two operate in the sweater product category, e.g.; FTSF 7 and FTSF 8. Table 5 summarizes the extent of partial internalization pursued by the eight OEM suppliers in tier 1. This may be found in Appendix 5.

Earlier, when the first tier supplier firms were at the level of CMT, they only took care of their own specific task of assembly. All the raw material and service inputs that were needed were arranged for the first tier supplier firms by either the lead firms or their agents or some of the intermediaries. Now the lead firms give mandates to these OEM first tier supplier firms to govern not only in tier 2 but also in the other lower triers. This task of governing part of the GVCs has been new for the OEM suppliers in tier 1 and it takes some time for them to achieve adequate level of capabilities. Evidence suggests that they lack the experience of dealing with the multi-tier network of suppliers. Unlike both of the lead firms, these OEM suppliers in tier 1 sometimes fall short of FSA_T and /or FSA_R necessary to deal with the network of suppliers and have no other option but to partially internalize.

For example, FTSF 1 and FTSF 2 have internalized almost everything in tier 2. The only exception has been to outsource the fabric. Both were once struggling to deal with various accessories suppliers in tier 2 mainly in terms of price, dynamic requirement of variety and quality, speed of delivery, and the desired level of compliance with social standards. FTSF 1, therefore, decided to acquire one of the accessories factories that were enlisted with one of the lead firms whereas FTSF 2 established a greenfield accessories factory 8 years ago. Representative from FTSF 2 states -

'Dealing with accessories suppliers became difficult for us. We missed few shipments because of accessories and there were compliance (related) issues. We couldn't find reliable suppliers.'

In case of FTSF 1, washing facilities in tier 3 involved newly introduced stringent compliance requirement. Installing an effluent treatment plant (ETP) in any washing facility within the apparel industry is a legal requirement, but enforcement of the same is still very weak. Search costs to find a compliant washing facility seemed to be high, and even if one could be found, FTSF 1 reported a shortfall in FSA_T and /or FSA_R necessary to deal with the external washing facilities. None of the outsourced washing facilities that used to work under the lead firm agreed to invest for establishing ETP to ensure compliance with the desired environmental standards and for improving upon the unhealthy working conditions. The requirement of making specific investment became a zone of discomfort. The reporting point for the washing facility changed from a lead firm of Western origin to the FTSF 1 of domestic origin. Lead firms with reputation on a global scale are relied and trusted by the suppliers in the lower tiers whereas OEM first tier supplier firms do not have similar kind of reputation. Under the circumstances, the options available to the FTSF 1 were to either find a new fully compliant washing facility beyond the roster of the lead firm to fill the void or else move to internalize the activity. A representative from FTSF 1 states -

'We had hard time to deal with washing facilities. It required ETP but the owner didn't want to invest for an ETP. That's why we acquired one and invested for an ETP to make the facility fully compliant.'

In the knitwear category, FTSF 3, does not produce yarn, but makes its own fabric with outsourced yarn. A decade ago, the firm acquired screen print and embroidery facilities, and also an accessories factory to produce labels, cartons, polybag, tag etc. These partial internalization moves have enabled FTSF 3 to enjoy some price advantages over its competitors and more importantly to reduce the pressures on account of lead times. It does not have allover print facility at the moment. FTSF 4 has internalized more extensively to be able to offer better prices and shortened lead times. It has acquired a spinning mill to produce its own yarn, a textile mill to produce knitted fabric, a screen print facility to print on fabric. It also acquired washing, embroidery and accessories production facilities. However, the firm needs to outsource all over print on fabric. FTSF 5 originally started with one stitching facility. It has acquired one factory to produce knitted fabric and one factory for screen-printing. The firm outsources allover print facility. Yarn is 100% outsourced by FTSF 5 mostly from the local market. The firm also outsources its full requirement of accessories from both home and abroad. FTSF 6 was doing mainly stitching job and business turned around when it acquired a knit fabric production facility. It also acquired a printing factory to screen print and an accessories production facility. The firm has not internalized yarn production and all over print facility. FTSF 3, FTSF 4, FTSF 5, and FTSF 6 have reported that the rise in transaction costs and shortfall in FSA_T and /or FSA_R necessary to deal with the suppliers in the lower tiers have led them to internalize most of the crucial activities that take place in different tiers within the knitwear category. Representative from FTSF 3 says -

'We acquired an embroidery facility since it was closing down. We did not want a missing link in the chain.'

With an exception to FTSF 4, none in the knitwear category have gone for internalizing yarn production. A yarn production capacity requires a minimum scale to survive. A plenty of suppliers in tier 3 are there in yarn production, and it is relatively easier to deal with the yarn producers. There are standardized prices for different counts of yarn widely available throughout the industry, and hence, gaining some advantage in terms of efficiency by producing yarn on their own may not be possible. Lastly, FTSF 3, FTSF 5 and FTSF 6 consider compliance with social standards at the satisfactory level and much easier to monitor in case of yarn production facilities. None of the above three OEM first

tier suppliers incur higher transaction costs and lack the FSA_T and /or FSA_R necessary to deal with various yarn producers. Whereas a representative from FTSF 4 says -

'Our current volume and projected growth justifies the establishment of a yarn production facility.'

FTSF 7 started as a single factory to produce sweaters by procuring from suppliers in different tiers. Later, it internalized a yarn dyeing facility to be able to support its entire sweater making capacity. It gradually added linking, washing and finishing sections. FTSF 8 used to be knitting sweaters initially, but later acquired linking, washing and finishing facilities. However, FTSF 8 outsources yarn from both home and abroad. Rise in transaction costs and shortfall of FSA_T and /or FSA_R necessary to deal with various suppliers in the lower tiers were the main reasons that the FTSF 7 and FTSF 8 took into consideration while partially internalizing. Both the OEM first tier supplier firms have stated that a more integrated factory in the sweater industry can offer better efficiency, higher speed of delivery, and a desired level of compliance with the social standards. Representative from FTSF 7 says -

'It is difficult to find trustworthy compliant suppliers in the lower tiers. Off course, there are some, but not many. So, we have to partially internalize.'

In sum, more cases of OEM first tier supplier firms' partial internalization are found in tier 2. Almost all OEM suppliers in tier 1 have fully or partially internalized accessories production facilities with the exception of only a few. Fabric production in tier 2 has been internalized in both knitwear and sweater categories but not in woven top and woven bottom categories. Fabric production facilities in woven top and woven bottom categories require large investment and a scale to survive. Therefore, neither FTSF 1 nor FTSF 2 in the woven top and woven bottom categories has established fabric production facilities. There are cases of internalization in tier 3 also. We find instances of OEM first tier supplier firms' internalization in tier 3 in three categories - a) washing facility in woven bottom category, b) yarn production facility in knitwear category, and c) yarn dyeing, linking, washing, and finishing facilities in the sweater category. By partially internalizing, OEM first tier supplier firms have managed to resolve the issue of control with the help of ownership over the parts of the apparel GVCs that they have been

governing on behalf of the lead firms. OEM first tier supplier firms have ensured that no missing links are there in the lower tiers and everything is as per the lead firms' expectations / specifications as long as the option of partial internalization is there.

6.4.2 Lead firms' control without ownership

Despite the changes in GVC governance, both lead firms are still exerting direct control over the first tier supplier firms and indirect control over the suppliers in the other lower tiers. Lead firms use direct coordination mechanism for the first tier supplier firms and by virtue of that they are able to achieve direct control over the OEM suppliers in tier 1. None of the lead firms, however, mention that they have any formal written contracts or strategic alliance in place with the OEM first tier supplier firms. Instead, code of conduct document of each of the lead firms has to be signed by the OEM first tier supplier firms on a mandatory basis that remains valid between the time of entry and exit / exclusion from the GVCs. In addition, lead firms issue purchase orders on competitive basis to the OEM first tier supplier firms mentioning the product specifications, prices, date of delivery etc. Such purchase orders along with the code of conduct document act together as revolving contracts between the lead and first tier supplier firms. In order to ensure that everything is in order, both lead firms maintain country offices for the purpose of monitoring and coordinating with the OEM first tier supplier firms that exist in their rosters.

The lead firms' ability to control is expected to diminish as the suppliers are positioned in some of the remote tiers. We have investigated whether and how lead firms achieve some level of control over the suppliers in the lower tiers. Or is it so that the lead firms lose control over some of these peripheral suppliers? We find that even if there is no direct coordination beyond tier 1, both lead firms are able to exert indirect control over the suppliers in the lower tiers. By way of maintaining a pool of enlisted suppliers in each of the lower tiers, both lead firms report that they are able to maintain workable indirect control in the lower tiers. Here, the possibility of threats of expulsion from the pools of enlisted suppliers has acted as an effective lever of control. Representative from MNE A states -

'Suppliers in lower tiers know that even if we rarely talk to them but we may exclude them anytime from the pools of the enlisted suppliers.'

We also find evidence that not only the negative aspect of fear of expulsion but also the positive aspect of relational capital that works here side by side. The suppliers in the lower tiers that are not directly governed by the lead firms tend to remain loyal due to the expectations of some benefits to be derived from the lead firms' FSAs such as reputation / brands, design capability, technologies, organizational capabilities etc. Sharing the common identity of belonging to the same GVCs has been considered important since the suppliers in the lower tiers feel favorably about the lead firms' heavyweight FSA_A associated with reputation. Lead firms, therefore, find it easier to control such suppliers with the help of the relational capital that they share with them. We find that both the lead firms keep on reinforcing this build up of relational capital by establishing and maintaining the rosters of fewer first tier supplier firms along with respective pools of enlisted suppliers in the lower tiers.

With the help of the above relational capital in addition to the existence of some forms of contracts and direct coordination mechanism, the lead firms are able to exert both direct and indirect control over the entire GVCs without having any kind of equity ownership. The representative from MNE B says -

'We are a very big brand in the global apparel industry. We control all our suppliers either directly or indirectly, and we know how to do it.'

6.5 Theoretical Implications:

This paper has some important theoretical implications. We show how the implementation of cascading compliance has led to the emergence of split governance where lead firms govern up to tier 1 allowing the OEM first tier supplier firms to govern in the lower tiers. This type of split governance may add to the existing theory on GVC governance. The notion that only lead firms govern the GVCs needs to be changed. Even with split governance, lead firms are exerting control over the entire GVCs either directly or indirectly. We show that lead firms maintain direct control over the OEM first tier supplier firms with the help of contracts along with a direct coordination mechanism. We also show that the same lead firms are able to exert indirect control

over the suppliers in the lower tiers due to the maintenance of some relational capital in the form of pools of enlisted suppliers in the lower tiers. Both of these direct and indirect control mechanisms may also be added to the existing theory on control without ownership. Further research endeavors may be undertaken to explore what else is there that the lead firms may have applied to achieve effective control without ownership in the apparel GVCs. It appears that the lead firms possess some FSA_T and /or FSA_R that help them achieve control without ownership. Future researchers may examine what is the nature of such FSA_T and /or FSA_R based on which the lead firms may achieve effective workable control without ownership over the entire GVCs.

6.6 Policy and Managerial Implications:

Our findings also point to certain policy implications. After the tragic Rana Plaza disaster, major apparel GVCs could have left Bangladesh for good. But with multi-stakeholder initiatives, things have changed for better in the longer term. It has been documented in the extant literature that building safety and working conditions have improved to some extent. In addition, lead firms have changed the way they govern the GVCs heavily relying on fewer OEM first tier supplier firms. This is a massive achievement for the country's apparel industry since many of the suppliers in tier 1 especially the ones operating in the mainstream apparel GVCs have upgraded from CMT to OEM level. These first tier suppliers from Bangladesh are now more capable to grow keeping pace with the lead firms' business growth. Policymakers should support the OEM first tier supplier firms to sustain existing achievement and gain further ones. They need to provide policy support for the OEM first tier supplier firms to achieve higher productivity by investing for automation and additional capacity. More productive OEM first tier suppliers with additional capacity will be able to retain more value added in the host country. These OEM first tier suppliers may arrange lower tier suppliers rejoin the GVCs subject to meeting some compliance and competence requirements. First tier supplier firms' internalization moves in the lower tiers may be outsourced once again as and when some suppliers emerge to retake their respective activities in the lower tiers at a competitive price. Catching up with China is very much possible if the progresses

that have been made can be sustained, and if Bangladesh's apparel industry can further build on the same.

Our paper points to some managerial implications as well. Managing OEM suppliers in tier 1 is quite a challenging task. Instead of having a passive attitude as was prevailing in the CMT type suppliers in tier 1, managers in OEM first tier supplier firms need to be very proactive. Both of the lead firms and almost all of the OEM first tier supplier firms have highlighted during their interviews that in the coming years there will be added requirements for top and mid-level managers in the apparel sector in Bangladesh. Currently, all lead and OEM first tier supplier firms are relying on top and mid level managers from India, Sri Lanka, and China to run the businesses. Bangladesh could afford to survive so far with cheap labor but success as OEM suppliers surely depends on building a pool of high quality managerial staff. Importing managers from neighboring countries are perhaps meeting the needs for now, but local manpower at the managerial level needs to be developed for a sustained position in the long run.

6.7 Conclusion:

We have examined how the implementation of cascading compliance approach has affected GVC governance and how lead firms have been able to exert control without ownership. From internalization theory perspectives, we examine the issues in an empirical context. IB has, so far, remained silent on the impact of implementing a cascading compliance approach on GVC governance and thereby on control without ownership.

We show that after the implementation of cascading compliance approach governance responsibility has been split into two between the lead and OEM first tier supplier firms. Lead firms govern up to tier 1 allowing the OEM first tier supplier firms to govern in the lower tiers. Lead firms possessing FSA_T and /or FSA_R necessary to deal with the suppliers choose to continue outsourcing from the OEM first tier supplier firms and OEM first tier supplier firms partially internalize in the lower tiers as and when transaction costs rise and / or FSA_T and /or FSA_R necessary to deal with the suppliers fall short. We find that the lead firms are able to exert effective control without ownership over the OEM first tier supplier firms with the help of some forms of

contracts as well as direct monitoring and coordination mechanism. We also find evidence that the lead firms exert workable control without ownership over the suppliers that are not directly governed by them rather by the OEM first tier supplier firms. They are able to do it with the help of some relational capital, i.e.; pools of enlisted suppliers maintained by the lead firms in all the lower tiers. Examining a GVC phenomenon from internalization theory perspectives may be considered as a novel contribution of this paper.

We have deliberately collected data on OEM first tier supplier firms that are all domestically owned since we have intended to analyze on a lead firm (MNE) versus first tier supplier firm (domestic firm) basis. One of the limitations of this research has been that we cannot confirm what may happen if some first tier supplier firms are also MNEs. We leave this task to be fulfilled by the future researchers. Another major limitation of this research has been data availability mainly from the two lead MNEs due to several restrictions imposed from their headquarters. As a result, findings of this paper remain tenuous due to limited data particularly on how the lead firms achieve control without ownership along the apparel GVCs. Future research may address this limitation with other lead MNEs operating in the apparel GVCs either in Bangladesh or elsewhere.

Appendix 3

Table 1: Firm characteristics of lead firms

Lead Firm	Year of Establishment	Turnover in 2016	Procurement from Bangladesh in 2016	Employees	Apparel Suppliers in Bangladesh	Products	Origin
MNE A	1844	GBP 3.8 billion[36]	GBP 750 million	85,000	82	Menswear, womenswear, kidswear, lingerie etc.	UK
MNE B	1947	USD 20.3 billion	USD 3 billion	148,000	236	Woven & jersey items, knitwears, underwear, socks, swimwear, tights etc.	Sweden

Source: Author based on interviews with the lead firms and company documents/websites.

[36] This represents the combined figure of apparel and home products. Revenue figure for apparel items separately could not be obtained.

Table 2: Firm characteristics of first tier supplier firms

Firm	Ownership	Founding Year	Turnover in 2017	Employees	Major Buyers	Products
FTSF 1	Domestic	1986	USD 102 million	9,000	M&S, Zara, H&M, Kiabi, Lindex, Verner etc.	Woven items (bottom, i.e.; trousers & skirts)
FTSF 2	Domestic	1999	USD 40 million	2,200	M&S, H&M, George etc.	Woven items (tops, i.e.; shirts and blouses)
FTSF 3	Domestic	1994	USD 250 million	17,000	M&S, H&M, C&A, Celio etc.	Knitwears
FTSF 4	Domestic	1994 (1997 for woven unit)	USD 145 million (USD 71 million for knitwears and USD 74 million for woven items)	10,000 (6,000 in knitwears unit and 4,000 in woven unit)	Puma, Bestseller, Only, M&S, Tomy Hillfiger, Kelvin Clein, Olymp.	Knitwears and Woven items (tops, i.e.; shirts and blouses)
FTSF 5	Domestic	2000	USD 106 million	9,500	M&S, H&M, Tesco, Sainsbury's, Mothercare, Mango, Zara	Knitwears

					etc.	
FTSF 6	Domestic	1986	USD 106 million	9,500	M&S, H&M, Puma, Decathalon, Auchan, Next, Full Beauty etc.	Knitwears
FTSF 7	Domestic	2003	USD 90 million	15,000	H&M, Gap, Kiabi, Mothercare etc.	Sweaters
FTSF 8	Domestic	1999	USD 25 million	3,000	H&M, M&S, Next, Tema, Debenhams etc.	Sweaters

Source: Author based on interviews with the OEM first tier supplier firms.

Table 3: Lead firms' new sourcing strategy

Lead Firm	Focused Partner	Mandatory principles to be follow	Motives	Roster of suppliers in tier 1	Enlisted suppliers in lower tiers	New recruitment	Suppliers in tier 1 now	Suppliers in tier 1 in 5 years	Suppliers in tier 1 in 10 years
MNE A	Fewer OEM suppliers in tier 1	1. Only compliant suppliers in all tiers	1. Reduce transaction costs 2. Avoid the risk of losing reputation	Exists	Newly introduced	Restricted	82	75	60
MNE B		2. No sub contractors in any of the tiers		Exists	Newly introduced	Restricted	236	200	100

Source: Authors based on interviews with the lead firms.

Table 4: Suppliers in different tiers in typical apparel value chains

Product Categories /Tiers	Woven (tops)	Woven (bottoms)	Knitwear	Sweater	Jacket	Lingerie
FTSFs	Produce shirts, blouse, tops etc. as final products.	Produce pants, skirts, shorts, trousers etc. as final products.	Produce round neck T-shirts and polo T-shirts as final products.	Produce sweaters, jumpers, pullovers etc. known also as heavy knitting items as final products	Produce light or heavy jackets as final products.	Produce intimate female items such as bra, panties, nighties etc. as final products.
Suppliers in second tier	Provide fabric, collar materials, button, embroidery, sewing thread, tags/labels, clips/pins, poly inner, hanger, outer carton packaging, inner paper made thin board to be put inside a shirt.	Provide fabric, waist materials, buttons, zippers, metal hooks, embroidery, sewing thread, tags/labels, clips/pins, poly bags inner, hanger, outer carton packaging.	Provide fabric, button, embroidery, sewing thread, tag/labels, clips/pins, poly bags inner, hanger, outer carton packaging, inner paper made thin board to be put	Provide yarn, buttons, zippers, embroidery, sewing thread, tag/labels, clips/pins, poly inner, hanger, outer carton packaging, inner paper made thin board to be put inside a sweater etc.	Provide fabric, button, zipper, embroidery, sewing thread, tags/labels, clips/pins, poly inner, hanger, outer carton packaging, inner paper made thin board to be put inside a jacket, interlining materials,	Provide fabric, sewing thread, laces, plastic or metal hooks, zippers, buttons, tags/labels, clips/pins, poly bags inner, hanger, outer packaging carton, etc.

			inside a T-shirt.		etc.	
Suppliers in third tier	Provide yarn (spinning mills); dyeing, finishing, and printing services.	Provide yarn, washing,dyeing, finishing, and printing services.	Provide yarn, dyeing, finishing works, screen printing on a part of the fabric, overall printing of the fabric.	Provide dyeing, finishing, and industrial washing works.	Provide yarn, dyeing, finishing, industrial washing works for the fabric.	Provide yarn, dyeing, finishing, and printing works.
Suppliers in fourth tier	Provide natural fibers such as cotton, and man made synthetic/nylon fibers	Provide natural fibers such as cotton and man made synthetic/ nylon fibers.	Provide natural fibers such as cotton and man made synthetic/ nylon fibers.	Provide natural fibers such as cotton, and man made synthetic/nylon fibers.	Provide natural fibers such as cotton and man made synthetic/nylon fibers.	Provide natural fibers such as cotton and man made synthetic/nylon fibers.

Source: Author based on interviews.

Table 5: Partial internalization by OEM first tier supplier firms

OEM suppliers in tier 1	Internalization in tier 2	Internalization in tier 3	Internalization in tier 4
FTSF 1	Full fledged accessories factory	Industrial washing facility	None
FTSF 2	Full fledged accessories factory	None	None
FTSF 3	Fabric; accessories; screen print, embroidery	None	None
FTSF 4	Fabric; accessories; screen print; embroidery	Yarn production facility (Spinning mill); Washing facility	None
FTSF 5	Fabric; screen print	None	None
FTSF 6	Fabric; screen print; accessories	None	None
FTSF 7	Accessories	Yarn dyeing facility; Linking, washing and finishing facility	None
FTSF 8	Accessories	Yarn dyeing facility; Linking, washing and finishing facility.	None

Source: Author based on interviews with the OEM first tier supplier firms.

Chapter Seven: Conclusion

7. Conclusion:

This chapter commences with a list of key research questions in section 7.1 and a summary of the lessons that have been learnt from this thesis in section 7.2. Then the proposed way forward regarding policy, managerial and broader development related implications have been presented in sections 7.3, 7.4 and 7.5. Section 7.6 puts forward some discussions on the so-called middle-income trap and Bangladesh. Finally, the limitations are presented in section 7.7.

7.1 Key research questions

This thesis has examined a number of questions. In paper 1, the key question that has been examined is how FSAs help the supplier MNEs operating in labor-intensive GVCs maintain superior productivity vis-a-vis the domestic supplier firms. In paper 2, the key question has been how FSAs help the supplier MNEs that operate in labor-intensive GVCs remain cost competitive despite creating fewer linkages. In paper 3, the key question that has been examined is how lead firms along the apparel GVCs maintain control over the suppliers in different tiers, especially, in the lower tiers without having any equity ownership.

7.2 Lessons learnt from the thesis

SMNEs in labor-intensive sectors possess portfolios of FSAs that reflect weaknesses in FSA_A, and as a result, such SMNEs possess asset portfolios that comprise of relatively stronger FSA_T and / or FSA_R. Papers 1 and 2 of the thesis shows how FSA_T and / or FSA_R play the key role in helping the SMNEs remain competitive in terms of both productivity and cost.

Paper 1 reinforces the role of FSAs in helping SMNEs remain competitive in the host countries by becoming more productive than the domestic supplier firms even in the context of labor-intensive sectors, and it shows that it is possible to use advantages(s) derived from FSA_T and / or FSA_R based on the degree of multinationality to overcome the deficiencies in FSA_A. The very ideas of reinforcing the theoretical relevance of FSAs that put the SMNEs apart from the domestic supplier firms in terms of productivity even in the labor intensive GVCs and at the same time, pinpointing the most relevant source

of FSAs that really matters in driving superior productivity in such sectors / GVCs are novel contributions to the literature.

Paper 2 shows that SMNEs in the labor-intensive sectors primarily rely on FSA_T at SSC and the lack of local knowledge may cause deficiencies in FSA_T at SSC that may lead to creating fewer linkages than the domestic supplier firms. It has been shown that the deficiencies in FSA_T at SSC may be overcome by the advantage(s) derived from FSA_T at GSC based on the degree of multinationality. The above has been done with the help of FSA theory and supported by empirical evidence from Bangladesh. This has been a novel contribution that may add to the knowledge in the field of IB.

Paper 3 shows how the implementation of cascading compliance has led to the emergence of split governance where lead firms govern up to tier 1 allowing the OEM first tier supplier firms to govern in the lower tiers. This type of split governance may add to the existing theory on GVC governance as a novel contribution. Therefore, the notion that only the lead firms govern needs to be changed. It has also been shown that even with split governance, lead firms are able to exert indirect control over the suppliers that they no longer govern through maintenance of some relational capital in the form of pools of enlisted suppliers in all the lower tiers. Discussion on the mechanism to exert indirect control without ownership over the suppliers in the lower tiers is another novel contribution of this thesis. By leveraging first hand insights from industry stakeholders, this paper, in particular, offers a detailed examination of real world dynamics within Bangladesh's export oriented apparel sector. The empirical approach of the paper enhances the credibility of the conclusions and distinguishes it from the others that are available in the extant literature relying solely on secondary data or theoretical frameworks.

7.3 Policy implications

Our findings in paper 1 that SMNEs from the West are able to generate advantage(s) from FSA_T and / or FSA_R based on the degree of multinationality whereas the SMNEs from Asia are unable to do so. Therefore, SMNEs from the West are more productive than the domestic supplier firms and SMNEs from Asia are as productive as the domestic supplier firms call for two different policy approaches. SMNEs from the West may be

offered special incentives for having higher productivity whereas SMNEs from Asia must remain at par with that of the domestic supplier firms. The entry of increased number of SMNEs from the West with higher productivity may raise the overall national productivity level. Our finding that FSA_T and / or FSA_R leading to some advantage(s) may drive superior productivity of SMNEs operating in the labor-intensive sectors calls for host governments to consider new sets of policies that recognize the dynamic nature of FSAs and the possibility of spillovers from SMNEs from the West to the other types of supplier firms. Especially, the domestic supplier firms in the host countries may reap some benefits by learning the latest production know-how, managerial as well as organizational best practices etc. from the SMNEs from the West.

Our finding in paper 2 points to a few policy implications. In our view, policy support should focus on the SMNEs that currently create significantly fewer linkages than the domestic supplier firms. Disseminating information about the domestic input material suppliers specifically targeting the SMNEs may reduce the prevailing information asymmetry. Matchmaking initiatives between these SMNEs and the domestic input material suppliers may also be considered useful. Supply side intervention may include encouraging the domestic input material suppliers to join the GVCs that are orchestrated by such SMNEs. To do so successfully, policymakers should focus on improving upon the weak national innovation system (educational institutions, vocational training centers, research labs etc.) prevailing in most of the developing countries. With well-developed domestic input material markets, SMNEs with the tendency to procure from abroad could possibly be encouraged to move towards possessing incremental FSA_T at SSC rather than relying on their FSA_T at GSC. Particularly, in the developing countries, especially, where unemployment problem prevails, more and more SMNEs possessing efficient and effective SSC may be considered a blessing.

Our findings in paper 3 also point to certain policy implications. After the tragic Rana Plaza disaster, lead firms have changed the way they govern the GVCs heavily relying on fewer OEM first tier supplier firms. Policymakers should support the OEM first tier supplier firms to sustain the existing achievements as well as to gain further ones. They need to provide policy support for the OEM first tier supplier firms to achieve higher productivity by investing for automation and building additional capacity. Policymakers

must remember that the OEM first tier supplier firms should be able to continuously grow instead of disappearing from the apparel GVCs at some point in time under some competitive pressures. Catching up with China is very much possible if the progresses that have been made can be sustained, and if Bangladesh's apparel industry can further build on the same. This paper provides policymakers with evidence-based insights by synthesizing findings with theoretical frameworks.

7.4 Managerial implications

Our findings in paper 2 have some managerial implications. MNE linkages are mutually beneficial for both MNEs and domestic input material suppliers. From SMNEs' point of view, sourcing from the domestic markets for input materials is important to remain cost competitive as well as to reduce the lead-time. The ultimate goal of the managers at the SMNE that currently create fewer linkages than the domestic supplier firms should focus on acquiring incremental local knowledge to improve upon the deficiencies in FSA_T at SSC. Expediting the process of reducing reliance on the advantage(s) derived from FSA_T at GSC may save costs and improve upon the speed of delivery. From domestic input material suppliers' point of view, SMNEs' linkages may provide opportunities to gain access to the global markets, increased revenue, income and employment, and enhance the potential to upgrading through technology and knowledge transfers. Therefore, it is imperative for the domestic input material suppliers to undertake increased efforts to join the GVCs that are particularly orchestrated by the SMNEs that currently create significantly fewer linkages than the domestic supplier firms. Making themselves more visible to these SMNEs by taking advantage of modern communication medium such as well-developed websites, search engine optimization, phone calls, emails, online product presentations, arranging occasional visits to factories/offices etc. may be considered useful.

Paper 3 points to some managerial implications as well. Managing OEM suppliers in tier 1 is quite a challenging task. Instead of having a passive attitude as was prevailing in the CMT type suppliers in tier 1, managers in OEM first tier supplier firms need to be very proactive. Currently, all lead and OEM first tier supplier firms are relying on top and mid level managers from India, Sri Lanka, and China to run the businesses. Bangladesh could

afford to survive so far with cheap labor but success as OEM suppliers surely depends on building a pool of high quality managerial staff. Importing managers from neighboring countries are perhaps meeting the needs for now, but local manpower at the managerial level needs to be developed for a sustained position in the long run. This paper in the thesis contributes to managerial practices by offering practical implications derived from empirical evidence.

7.5 Broader implications on developmental issues

Results from the three papers have broader implications on the developmental issues that are as follows-

- The entry of SMNEs that are more productive than the domestic supplier firms may raise the overall national productivity. Moreover, there remain the possibilities of technology transfer and various kinds of spillovers in terms of productivity / technology / skill from the SMNEs to the domestic supplier firms. These are crucial aspects of development, especially, in the developing countries.
- The SMNEs that create fewer linkages than the domestic supplier firms by relying more on their GSC have the opportunities to build further on their SSC. Amid increased demand, domestic suppliers of input materials may invest for additional capacity leading to the creation of more employment. In developing countries where unemployment problem prevails, SMNEs' increased reliance on SSC may be considered as a blessing.
- Lead firms govern up to tier 1 allowing the OEM first tier supplier firms govern in the lower tiers. Such kind of reliance on OEM first tier supplier firms indicates that there are opportunities for more value addition in the host countries.

7.6 The middle-income trap and Bangladesh

The concept of middle-income trap was first mentioned in Gill and Kharas (2007). Various papers came out on the concept at a later time (Agenor and Canuto 2012; World Bank 2012; Felipe et al. 2012; Eichengreen et al. 2013). Articles were also written on the same with regional foci on Asia (Yusuf and Nabeshima 2009; Ohno 2009), on Latin America (Paus 2014; Foxley and Sossdorf 2011) and on Turkey (Yeldan et al. 2013). Skeptical views on the concept were also expressed in few of the other papers (Pritchett and Summers 2014; Bulman et al. 2014). Countries with the status of middle-income economy failing to reach the status of high-income economy are called the economies

falling in the middle-income trap. Anand et al. (2021: 555) view the literature on the middle-income trap as 'nascent (and somewhat controversial)'. Felipe et al. (2017) rejected the existence of a phenomenon that may be called the middle-income trap. The time that countries take to move from middle-income to higher-income economy status varies. Based on historical data, these scholars claim that countries with the status of lower middle-income economy took 55 years to reach the status of upper middle-income economy. Whereas, the countries having the status of upper middle-income economy took 15 years to make transition to the status of higher-income economy.

However, Bangladesh reached the status of lower-middle income country almost a decade ago in 2015. The country has set a target of becoming a higher middle-income economy by 2031 (World Bank 2024). Economies of the countries worldwide are divided into three categories - a) low-income, b) middle-income, and c) high-income countries. The middle-income countries are again divided into two categories - a) lower middle-income, and b) higher middle-income countries (The Business Standard 2024). According to the World Bank, a low-income economy has per capita income of less than $1,145/-, a lower middle-income economy has per capita income between US$ 1,146/- to 4,515/-, an upper middle-income economy has per capita income between US$4,516 and US$ 14,005/-, and a high-income economy has per capita income of more than US$ 14,005/-. Almost 6 billion people still live in the 108 countries with middle-income economies and only 34 countries with middle-income economies have achieved the status of higher-income economy since the 1990s (World Bank 2024). Bangladesh along with its neighbors such as China and India are home to almost 3 billion people. Despite achieving major success in economic development, China is still struggling to become a country with higher-income economy. India is also having inadequate growth for long many years and remains stuck in the middle-income trap. Now many ask the question whether Bangladesh will also fall in the middle-income trap.

Bangladesh is currently in the lower middle-income economy status hoping to reach the higher middle-income economy status by 2031. According to the World Bank, Bangladesh has achieved an average annual GDP growth rate of 6.40% over a period of 2010 - 2023 (World Bank 2024). In 2024, Bangladesh's GDP per capita was US$ 2,625/-. The question that arises here is whether Bangladesh can achieve the immediate target of

achieving the upper middle-income economy status by 2031. If the similar average annual growth rate of 6.40% can be maintained, Bangladesh is expected to achieve GDP per capita of US$ 4,052/- by 2031. The country will, perhaps, reach the upper middle-income economy status by 2033 if the same GDP growth rate is maintained. Various media reports indicate that the data on GDP growth and various economic indicators supplied by the Bangladesh Bureau of Statistics (BBS) were not reliable (The Daily Amar Desh 2024). If this media report is proven true, then the time required to achieve the upper middle-income economy status will definitely be longer. The question of achieving the higher-income economy status for Bangladesh arises only after the country reaches the upper middle-income economy status. For argument's sake, let us assume that Bangladesh achieves the status of upper middle-income economy in 2033. Then the country will have to wait until the year 2051 in order to reach the status of a higher-income economy assuming the maintenance of the average annual GDP growth rate of 6.40%.

7.7 Limitations

The main limitation of paper 1 and 2 is that it examines the competitiveness of SMNEs in terms of both productivity and cost operating in the labor-intensive manufacturing function along the GVCs in the export-oriented sectors only. To make the results generalizable, future researchers may consider looking into competitiveness of the SMNEs in terms of both productivity and cost operating in the labor-intensive sectors in the rest of the economy as well to check whether or not the same results hold true. This has both advantages and disadvantages. The primary advantage is that our empirical study is based on a fairly homogeneous set of firms, operating under the same economic conditions and operating mostly in one dominant sector. This makes our results robust. On the other hand, the primary disadvantage is that the results may not be generalizable to the contexts where the SMNEs cater to the local markets. Therefore, it would be fruitful to conduct research in such contexts in the future to help broaden our understanding of SMNEs' competitiveness in terms of both productivity and cost.

In paper 3, we have collected data on OEM first tier supplier firms that are all domestically owned since we have intended to analyze on a lead firm (MNE) versus first

tier supplier firm (domestic firm) basis. A major limitation of this paper has, therefore, been that we cannot confirm what may happen if some first tier supplier firms are also MNEs. We leave this task to be fulfilled by the future researchers. Another limitation of this paper is data availability mainly from the two lead firms due to the restrictions that have been imposed from their headquarters. As a result, quality of analyses in the findings section has remained tenuous due to the limited data.

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