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Analyzing Vietnam's textile garment global supply chain with the Revealed Comparative Advantage

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ABSTRACT

Purpose — *This paper aims to calculate and analyze the Revealed Comparative Advantage index (RCA) of Vietnam's textile garment industry in the global supply chain by comparing it to other countries, thereby suggesting appropriate solutions.*

Method — *The research uses the calculation method of Revealed Comparative Advantage - RCA. RCA brings up an efficient method to analyze a nation's comparative advantage based on actual export activity data that were extracted from the TRADEMAP platform.*

Result — *Although Vietnam has many advantages and strong features, the RCA index (1.93) in this study shows that Vietnam's total textile garment supply chain ranks fifth on a worldwide scale, following Bangladesh (10.54), Turkey (3.81), China (2.55), and India. (2.47). The raw materials (RCA 1.65) and fabric production (RCA 1.29) phases are extremely weak, ranking sixth and fourth in the world, respectively. Making garments is the best, ranking third globally and with an RCA of 3.4.*

Contribution — *This research validates the usefulness and feasibility of the RCA calculation approach for analyzing the comparative advantages of Vietnam's textile garment supply chain, which has never been used previously. The research measured and quantified the benefits of Vietnam's textile garment supply chain in order to compare other rivals visibly, so readers can clearly grasp where Vietnam stands on the global textile garment supply chain.*

Keywords: *textile garment, global supply chain, revealed comparative advantage, international trade*

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INTRODUCTION

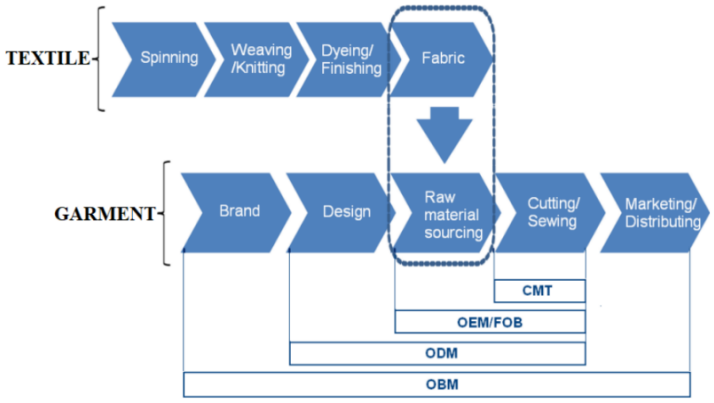
In past years, the textile garment industry of Vietnam has had full-blown steps and increasingly plays an important role in economic growth. However, in the new normal context, the textile garment industry must have its own supply chain management strategies to create and sustain competitive advantages for itself. Currently, FDI (Foreign Direct Investment) textile garment enterprises, which account for around 70% of total nationwide export value, are major growth motivations (Son & Quyến, 2022). Therein, most of the FDI enterprises have headquarters and sibling companies abroad to coordinate operations and supply input materials as well as a global office network to promote sales and service, thus increasing supply chain management performance is more critical for survival and growth. Apart from opportunities and advantages brought by Free Trade Agreements (FTAs) which have been signed by Vietnam and other countries who are main customers, global uncertainties, such as the Covid-19 pandemic, economic recession, Russia-Ukraine war, etc caused great damage to Vietnam's economy and are pricey lessons to enterprises to find preventive solutions, minimize such negative impacts. Furthermore, the textile garment global supply chain has already transformed as the cheap labor cost is not buyers' most important priority for sourcing, instead, buyers focus on other long-term sustainable competitive advantages of suppliers such as digitization, responsiveness, legal compliance competencies, and especially for short production cycle time and small order quantity. Therefore, despite impressive growth in recent years, the position of Vietnam's textile garment industry in the global textile garment supply chain is still lower than other competitors like China, India, Bangladesh, etc.

According to Gereffi & Memedovic (2003), the textile garment global supply chain has five main segments: (1) raw material supply, including natural and synthetic fibers; (2) provision of components, such as the yarns and fabrics manufactured by textile companies; (3) production networks made up of garment factories, including their domestic and overseas subcontractors; (4) export channels established by trade intermediaries; and (5) marketing networks at the retail level (see Figure 1). Over time, there have been continual shifts in the location of both the most significant apparel exporting countries and regions, as well as their main end markets (Gereffi & Memedovic, 2003).

Vietnam's textile-garment is determined as one of the major export industries that have been achieving a high growth rate and remarkably contributing to the export value of the national economy (Oanh, 2020). In 2020, entire Vietnam has 10,246 active firms, accounting for nearly 1.3% of nationwide, manufacturing and doing business in the textile-garment industry (Lan, 2021). There were

around 2.52 million employees, accounting for approximately 4.8% of the entire country, working in the textile garment industry (Thắng, 2022). The main production modes of Vietnam's textile garment industry have focused on CMT1 and FOB2 (Hằng et al., 2017). There are several garment-making modes (see Figure 1), wherein CMT and FOB are the lowest-valued added ones.

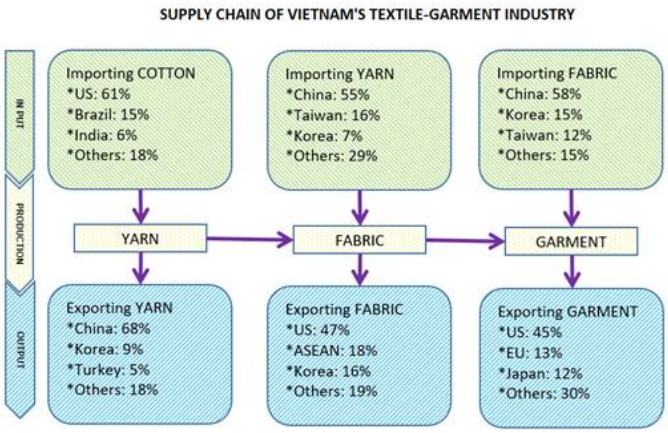
Figure 1. Garment-making modes



Source: The author summarized (2023)

In general, the structure of Vietnam's textile garment industry includes three sections, Yarn (raw materials), Fabric (textiles), and Garment. The supply chain model is presented in Figure 2 below (Sơn & Quyến, 2022).

Figure 2. Vietnamese textile garment supply chain



Source: Sơn & Quyến (2022)

[1] CMT: Cut-Make-Trim is the simplest garment-making method that the makers have machines and workers only, whereas the buyers provide the rest of things like technical docs, designs, materials
[2] FOB: Free-On-Board is a method that garment makers are in charge of both buying materials and making garments. This method is a higher value-added one.

Comparative advantage is a significant element for a nation to determine dominant products and focuses on producing to compete in the international market (Sang & Xê, 2016). The comparative advantage theory of Ricardo (1817) demonstrated that each nation should specialize in producing and exporting goods that the nation has comparative advantages and importing what they do not have comparative advantages; by doing so, it is beneficial to all nations. Bela (1965) came up with Revealed Comparative Advantage - RCA which was calculated by the comparative advantage theory and historical statistical data of exchanged products between nations. Concretely, a nation is supposed to have comparative advantages for a given product if the share of that product in the nation's exports is greater than that of the world (Chương & Trọng, 2017).

There have been many studies about Vietnam's position in the global textile garment supply chain. Prominent foreign research consists of Hal (1998) studied the Vietnamese textile garment industry focusing on the industrialization progress, future opportunities, and challenges; Khalid & John (2003) examined Vietnam's global textile garment supply chain by the role of globalization and perspective of the textile garment industry; Angie (2012) examined the development of textile garment manufacturing in the context of the prevailing arguments on pursuing market-oriented liberalization and state-directed domestic linkages, and the impact of these developments on union and workers in Vietnam. These studies were done in the early years of the 2000s, thus it is backward from the new development trends and achievements of the Vietnamese textile garment sector.

There have also been several Vietnamese typical research as Hội (2012) studied the Vietnamese export textile garment value chain by outward product approach method; Nên (2016) analyzed the position and barriers for Vietnamese textile garment enterprises to participate in the global textile garment supply chain; Thu (2015) researched the opportunities to upgrade Vietnam's global textile garment supply chain by shifting the manufacturing modes. These studies clarified the supply chain as well as analyzed the position of Vietnam's textile garment industry in the global textile garment supply chain, but they did not implement the research in the correlative comparison to other countries that have the same advantages and experiences to find the development opportunities for Vietnamese textile garment industry.

Therefore, this paper is to analyze the comparative advantages of Vietnam's textile garment industry to other countries on a global scale to suggest improvement solutions to government policymakers and enterprise managers.

METHOD

The quantitative method is mainly used in this paper. Besides, qualitative methods are applied to this study such as meta-analysis and desk research. To analyze Vietnam's stand in garment manufacturing as well as material production, this research uses the calculation method of Revealed Comparative Advantage - RCA. RCA brings up an efficient method to analyze a nation's comparative advantage based on actual export activity data. Bela (1965) developed this indicator by dividing the share of a commodity (or a group of commodities) in the total export value of a nation by that of the world. This method has been used by many scholars to explain paradigms of trade and international specialization in the global context. The indicator denoting comparative advantage is calculated as follows.

$$RCAij = (Xij/Xi)/(\Sigma Xwj/Xw)$$

Therein:
RCAij: The comparative advantage indicator of a nation i for product j
Xij: The export value of product j of nation i
Xi= ΣjXij: Total export value of nation i
Xwj= ΣiXij: Total global export value of product j
Xw=ΣiΣjXij: Total global export value

If the national export share of product j of a nation is greater than the global export share of product j, RCAij > 1, then that nation has the comparative advantage for product j and vice versa. The greater this indicator is, the higher the comparative advantage is. Hinloopen (2001) classified the RCA index into four grades as Table 1.

Table 1. RCA index classification

Grade	RCA value	Description
1	0 < RCA ≤ 1	Do not have the comparative advantage
2	1 < RCA ≤ 2	Low comparative advantage
3	2 < RCA ≤ 4	Medium comparative advantage
4	RCA > 4	High comparative advantage

Source: Hinloopen (2001)

In this research, the RCA index is calculated for 10 leading textile garment exporters – who have the biggest textile garment total export value in 2021. The data of these exporters are based on the TRADEMAP in 5 years, 2017, 2018,

2019, 2020, and 2021 to increase the accuracy and reliability level; including Vietnam, China, Bangladesh, India, Italy, Turkey, Spain, Indonesia, Germany, and the USA. 2-digit HS codes are used for calculation. As above mentioned, because Vietnam's textile garment global supply chain has just two key stages, manufacturing garments and producing input materials which are represented by HS code 50 to HS code 63, thus it is divided into three sub-sections: producing raw materials, manufacturing textiles and make garments as Table 2.

Table 2. HS code, product, and sub-section classification

HS Code	Product description	Segmentation in the textile garment value chain
50	Silk	Producing Raw Material (Sub-Section 1)
51	Wool, fine or coarse animal hair; horsehair yarn and woven fabrics	
52	Cotton	
53	Other vegetable textile fiber; paper yarn and woven fabrics of paper yarns	
54	Man-made filaments; strip and the like of man-made textile materials	
55	Man-made staple fibers	
56	Wadding, felt and nonwovens; special yarns; twine, cordages, robes, cables and articles	
57	Carpets and other textile floor coverings	Manufacturing Textiles (Sub-Section 2)
58	Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroideries	
59	Impregnated, coated, covered or laminated textile fabrics; textile articles	
60	Knitted or crocheted fabrics	
61	Ariticles of apparel and clothing accessories, knitted or crocheted	Make Garments (Sub-Section 3)
62	Ariticles of apparel and clothing accessories, not knitted or crocheted	
63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags	

Source: The author composed (2023)

RESULT AND DISCUSSION

Before concretely analyzing the stand of Vietnam in the global supply chain, it is necessary to take an overview of the Vietnamese textile garment industry with RCA indexes counted from 2017 to 2021 in Table 3. Products of HS codes 61 and 62, which account for over 50% of the total value, have the greatest absolute value for the global textile garment supply chain. These products of Vietnam are also the biggest in RCA, and their average indexes (4.18 and 4.30) are very high. This point once again does assert and proves that Vietnam mainly concentrates on making garments.

Table 3. Overall RCA index of Vietnamese textile garment supply chain

HS code	Product description	Segmentation in the textile garment value chain	RCA																	
			Commodity						Sub-section						Entire chain					
			2017	2018	2019	2020	2021	Average	2017	2018	2019	2020	2021	Average	2017	2018	2019	2020	2021	Average
			=(A/B) / (C/D)						Average of commodities in the sub-section						Average of all commodities in the entire chain					
50	Silk	Producing raw materials (**Sub-section 1**)	3.63	3.71	3.86	3.74	3.67	3.72	1.69	1.76	1.73	1.62	1.47	1.65	1.92	2.05	2.05	1.91	1.70	1.93
51	Wool, fine or coarse animal hair; horsehair yarn and woven fabrics		0.04	0.03	0.04	0.13	0.11	0.07												
52	Cotton		3.78	3.73	3.87	3.56	3.12	3.61												
53	Other vegetable textile fiber; paper yarn and woven fabrics of paper yarns		0.60	0.69	0.48	0.42	0.27	0.49												
54	Man-made filaments; strip and the like of man-made textile materials		1.58	1.77	1.55	1.48	1.51	1.58												
55	Man-made staple fibers		1.13	1.26	1.27	1.10	0.92	1.14												
56	Wadding, felt and nonwovens; special yarns; twine, cordages, robes, cables and articles		1.08	1.12	1.06	0.89	0.69	0.97												
57	Carpets and other textile floor coverings	Manufacturing textile (**Sub-section 2**)	0.22	0.38	0.77	1.17	0.99	0.71	1.08	1.26	1.42	1.43	1.26	1.29						
58	Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroideries		0.59	0.68	0.68	0.74	0.71	0.68												
59	Impregnated, coated, covered or laminated textile fabrics; textile articles		1.75	1.86	1.96	1.61	1.72	1.78												
60	Knitted or crocheted fabrics		1.76	2.11	2.27	2.22	1.64	2.00												
61	Ariticles of apparel and clothing accessories, knitted or crocheted	Make garment (**Sub-section 3**)	4.41	4.60	4.42	4.01	3.47	4.18	3.59	3.77	3.65	3.22	2.81	3.40						
62	Ariticles of apparel and clothing accessories, not knitted or crocheted		4.49	4.82	4.59	4.02	3.58	4.30												
63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags		1.87	1.87	1.93	1.61	1.38	1.73												

Source: The author composed (2023)

Table 4. Overall RCA indexes of top 10 textile garment exporters

HS code	Segmentation in the textile garment value chain	RCA average of 5 year (2017 - 2021)																											
		Vietnam			Bangladesh			China			India			USA			Turkey			Italy			Spain			Germany			Indonesia		
		Commodity	Sub-section	Entire chain	Commodity	Sub-section	Entire chain	Commodity	Sub-section	Entire chain	Commodity	Sub-section	Entire chain	Commodity	Sub-section	Entire chain	Commodity	Sub-section	Entire chain	Commodity	Sub-section	Entire chain	Commodity	Sub-section	Entire chain	Commodity	Sub-section	Entire chain	Commodity	Sub-section	Entire chain
50	Producing raw materials (Sub-section 1)	3.72	1.65	1.93	0.01	[illegible]	10.54	3.51	2.22	2.39	3.08	3.39	2.97	0.05	[illegible]	0.49	0.33	2.36	3.81	5.00	2.57	1.88	0.11	[illegible]	0.85	0.25	[illegible]	0.54	0.03	1.45	1.13
51		0.07			0.01			1.24			0.73			0.06			0.96			5.81			0.56			0.54			0.01		
52		3.61			0.48			1.79			7.64			1.60			3.36			0.79			0.64			0.19			1.45		
53		0.49			68.47			1.80			5.83			0.05			1.00			1.90			0.75			0.11			0.25		
54		1.58			0.04			3.05			2.56			0.38			3.39			1.37			0.87			0.38			1.67		
55		1.14			0.22			2.46			2.99			0.70			4.32			1.00			1.13			0.37			6.13		
56		0.97			0.63			1.67			0.93			1.03			3.16			2.10			1.17			1.27			0.63		
57	Manufacturing textile (Sub-section 2)	0.71	1.29		0.98	[illegible]		1.35	2.55		6.62	2.47		0.64	[illegible]		16.55	0.63		0.43	1.11		0.46	0.67		0.47	[illegible]		0.40	[illegible]	
58		0.68			0.14			2.96			1.82			0.43			3.85			1.49			0.82			0.60			0.39		
59		1.78			0.06			2.21			0.70			0.99			1.22			1.50			0.81			1.31			0.57		
60		2.00			0.26			3.66			0.76			0.26			4.79			1.03			0.61			0.29			0.32		
61	Make garment (Sub-section 3)	4.18	3.40		36.21	[illegible]		2.24	2.60		1.89	2.66		0.14	[illegible]		4.15	3.46		1.45	1.30		1.34	1.32		0.61	[illegible]		1.71	1.32	
62		4.30			33.62			2.20			2.03			0.11			3.10			2.05			2.01			0.66			1.94		
63		1.73			6.39			3.35			4.07			0.36			3.12			0.39			0.60			0.55			0.31		
Total absolute value		38,107,976			41,354,629			[illegible]			36,180,201			25,497,968			29,015,518			35,063,843			[illegible]			38,021,189			[illegible]		

Source: The author composed (2023)

Basically, the average entire chain RCA of Vietnam is not high (RCA = 1.93), although the HS code 61 and 62 products have very good RCA indexes (RCA = 4.18 and 4.30) and a few items of raw materials sub-section are quite good (HS Code 50 and 52 – Silk and Cotton). Next, the paper analyzes each HS code product as well as each sub-section to determine what products Vietnam should focus on developing to improve its position in the global supply chain. Firstly, the overview of the RCA indexes of these 10 nations is shown in Table 4.

In terms of absolute value, Vietnam's textile garment belongs to the top 3 in the world, but Bangladesh, Turkey, India, and even Italy are competing very severely beside the giant – China.

Producing raw materials

Based on the data in Table 5, it is obvious that Vietnam has a low comparative advantage in this sub-section.

Table 5. RCA index comparison in the raw material sub-section

HS code	Segmentation in textile garment value chain	RCA average of 5 year (2017 - 2021)																			
		Vietnam		Bangladesh		China		India		USA		Turkey		Italy		Spain		Germany		Indonesia	
		Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section
50	Producing raw materials (Sub-section 1)	3.72	1.65	0.01	9.98	3.51	2.22	3.08	3.39	0.05	0.55	0.33	2.36	5.00	2.57	0.11	0.75	0.25	0.45	0.03	1.45
51		0.07		0.01		1.24		0.73		0.06		0.96		5.81		0.56		0.54		0.01	
52		3.61		0.48		1.79		7.64		1.60		3.36		0.79		0.64		0.19		1.45	
53		0.49		68.47		1.80		5.83		0.05		1.00		1.90		0.75		0.11		0.25	
54		1.58		0.04		3.05		2.56		0.38		3.39		1.37		0.87		0.38		1.67	
55		1.14		0.22		2.46		2.99		0.70		4.32		1.00		1.13		0.37		6.13	
56		0.97		0.63		1.67		0.93		1.03		3.16		2.10		1.17		1.27		0.63	
Ranking		**6**		**1**		**5**		**2**		**9**		**3**		**4**		**8**		**10**		**7**	

Source: The author composed (2023)

Raw materials have been still a drawback of the Vietnamese textile garment supply chain. Importing materials causes garment makers in particular, and the textile garment industry in general, to be reduced comparative advantage because the production lead time and cost of garments increases. Normally, if a nation can be proactive over raw materials, it does have lots of advantages in

making and exporting garments. Vietnamese central government and textile garment industry are aggressively establishing long-term strategies to overcome this weakness in the context that Vietnam is increasingly participating in many Free Trade Agreements (FTA) which require very serious CO (certificate of origin) regulations. Vietnam has some comparative advantages in this subsection, such as silk, cotton, and man-made filaments. According to Minh Hau (Hậu, 2020), Vietnam's mulberry industry belongs to the top 5 of the world, thus there is a lot of potentials to enhance export value and improve the RCA index of Silk products (HS code 50). Besides, Vietnam ranks 28th of 52 countries having oil resources in the world (Trung & Chất, 2016). Therefore, HS code 54 and 55 products (man-made filament and staple fiber) can become more competitive against other rivals if Vietnam has suitable development solutions.

Although the RCA index of cotton (HS code 52) is greater than 1, Vietnam is not as advantageous at producing and exporting cotton as other countries, like India, China, the US. Planting cotton is a land and capital-intensive industry, and is much impacted by weather, and climate. Furthermore, Vietnam's auxiliary irrigation system is relatively backward; production and harvesting methods are manual and inefficient; and the sale price is less competitive to contenders in the world (Khải & Nhung, 2011). Hence, the Vietnamese textile garment industry is rather dependent on importing raw materials from countries advantageous, such as Pakistan, India, and China. This is the reason to cause the Vietnamese textile garment restricted for export value (Ha et al., 2018).

For natural raw materials like wool, cotton, etc, the climate and environment are crucial for development, but in contrast to man-made ones, the production conditions are not only natural resources (oil), but it is the technological degree, too. Therefore, no reason does Vietnam have to be left behind other rivals if Vietnam can improve technology to produce raw materials.

Manufacturing textiles

Basically, manufacturing the textile has also been Vietnam's weakness although the RCA index is still greater than 1 as Table 6.

Table 6. RCA index comparison in the textile sub-section

HS code	Segmentation in the textile garment value chain	RCA average of 5 years (2017 - 2021)																			
		Vietnam		Bangladesh		China		India		USA		Turkey		Italy		Spain		Germany		Indonesia	
		Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section
57	Manufacturing textile (Sub-section 2)	0.71	1.29	0.98	0.36	1.35	2.55	6.62	2.47	0.64	0.58	16.55	6.60	0.43	1.11	0.46	0.67	0.47	0.67	0.40	0.42
58		0.68		0.14		2.96		1.82		0.43		3.85		1.49		0.82		0.60		0.39	
59		1.78		0.06		2.21		0.70		0.99		1.22		1.50		0.81		1.31		0.57	
60		2.00		0.26		3.66		0.76		0.26		4.79		1.03		0.61		0.29		0.32	
Ranking		**4**		**10**		**2**		**3**		**8**		**1**		**5**		**6**		**7**		**9**	

Source: The author composed (2023)

This subsection is significant to the garment-making phase because fabrics are the key input material for garments. Meanwhile, Vietnam has been importing a major amount of fabric from rivals, especially China (China is not a member of new generation FTAs, like CPTPP and EVFTA, which are bringing lots of benefits to Vietnam). This results in a decline in the added value of Vietnamese export garments.

There are three main causes to result in Vietnam's textile/ fabric manufacturing in relation to making garments. Firstly, the Vietnamese government has not really focused on investing, developing fabric, and dyeing production domestically meanwhile the technology of this division has been inferior to other countries in the region. Secondly, the domestic fabric and dyeing enterprises are currently small in size, scattered in the operation chain, and poor in management. Thirdly, Most of Vietnam's garment companies are simply processing factories that cannot decide to select input material sources. Instead, the buyers who hire Vietnamese companies to process garments are just decision-makers. This reason makes Vietnamese garment factories unable to proactively purchase fabrics from domestic manufacturers.

Since this sector is capital-intensive and technology-intensive, its investment rate and technical and management requirements are much higher than those of the clothing industry, which makes small and medium-sized enterprises difficult to invest in. This is also one of the reasons why it's not been attractive to investors for a long time. In addition, new generation FTAs in which Vietnam participates require CO (certificate of origin) at the very least for yarns. Thus, it

is compulsory for Vietnam to upgrade this subsection urgently to gain benefits from FTAs.

Making garments

Table 7 shows that Vietnam belongs to the top 3 biggest garment exporters having good comparative advantages together with Bangladesh – No. 1 and Turkey – No. 2. The gap in the RCA index between Bangladesh and other countries is very large, especially for HS code 61 and 62 products.

Table 7. RCA index comparison in the garment sub-section

HS code	Segmentation in the textile garment value chain	RCA average of 5 year (2017 - 2021)																			
		Vietnam		Bangladesh		China		India		USA		Turkey		Italy		Spain		Germany		Indonesia	
		Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section	Commodity	Sub-section
61	Make garment (Sub-section 3)	4.18	3.40	36.21	25.40	2.24	2.60	1.89	2.66	0.14	0.20	4.15	3.46	1.45	1.30	1.34	1.318	0.61	0.60	1.71	1.322
62		4.30		33.62		2.20		2.03		0.11		3.10		2.05		2.01		0.66		1.94	
63		1.73		6.39		3.35		4.07		0.36		3.12		0.39		0.60		0.55		0.31	
Total absolute value		38,107,976		41,354,629		273,949,821		36,180,201		25,497,968		29,015,518		35,063,843		18,665,045		38,021,189		12,430,433	
Ranking		**3**		**1**		**5**		**4**		**10**		**2**		**8**		**7**		**9**		**6**	

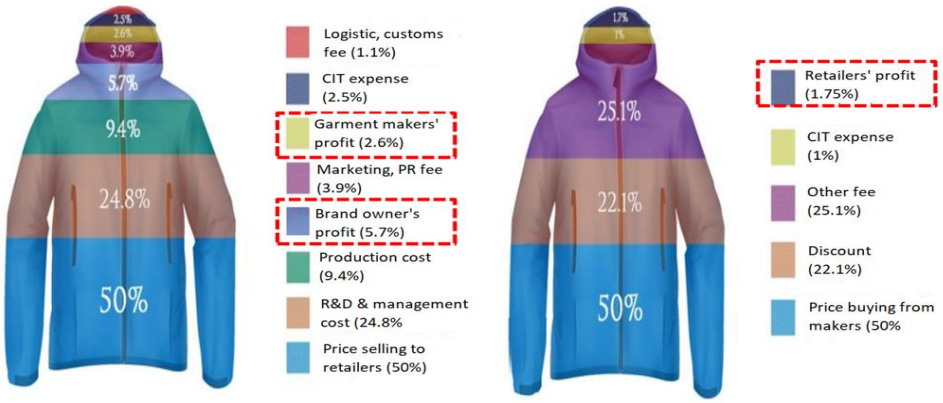
Source: The author composed (2023)

Although the RCA index of Bangladeshi export garments is the highest, China is just a giant with the greatest absolute export value as data shown in Table 7. It's obvious that Vietnam's garment-making sub-section is one of the leading exporters in both the RCA index and absolute export value. Moreover, the share of this sub-section always accounts for over 2/3 total value of the entire chain. Vietnamese garment workers are relatively more skillful than other countries that use spoons and folk for eating because they use chopsticks for it. Besides, Vietnam's population is now in the golden period with the majority of young people who are more suitable to elders for sewing garments. Therefore, this is a very big advantage for the Vietnamese textile garment industry. However, the profit margin of Vietnam's garment makers is not high because most garment enterprises are operating in the CTM mode.

Making garments is the final stage before selling to the market. However, its profit rate (added value) is the lowest in the whole textile garment supply chain, about 10% - 15% only (Khải & Nhung, 2011). This is a labor-intensive sub-

section because countries that possess developed textile garment industries no longer do this sub-section but hire newly participating countries who have abundant cheap labor sources and are weak at producing input materials like Bangladesh, Vietnam. Currently, Vietnamese garment makers are mainly CMT (Cut-Make-Trim) processing factories – the simplest and lowest manufacturing modes in the whole supply chain. The rest of garment making modes higher than CMT including OEM (Original Equipment Manufacturing), ODM (Original Design Manufacturing), and OBM (Original Brand Manufacturing) are very few among Vietnamese garment makers. According to an analysis of Lê Hồng (2017), a common garment is sold out in the market at USD 100, if the garment is made by the CMT method, then garment makers, buyers (brand owners), and retailers respectively gain USD 2.61, 5.7 and 1.7 as shown in Figure 3.

Figure 3. Comparing profit of makers and retailers



Source: Thuận (2017)

Formerly, labor cost was the most important in deciding to select sourcing for buyers. However, nowadays, buyers pay more and more attention to considering the long-term and sustainable competitive advantages of suppliers such as digitized ability, responsiveness speed, professionalism, and legal compliance. Particularly, for new consumption habits, it requires shorter lead time, and smaller order quantity, since manufacturing factories take a lot of pressure to reduce production time and increase productivity and flexibility to maintain their competitive competence.

Competitors of the Vietnamese textile garment are, such as China, India, and Thailand attempting aggressively to step up higher positions in the global supply chain. Their textile-garment industries are strategically planning to provide

whole-packed products thanks to higher-added-value export mode as OEM[3], ODM[4], or OBM[5]. Meanwhile, some countries like Vietnam, Bangladesh, and Cambodia are still mainly producing by the CMT model, and competing rigorously because the investment rate of the CMT model is low, thus many factories are easily participating and competing with each other by the cheap price. Therefore, the Vietnamese textile garment industry must attempt to shift the manufacturing model to other higher ones to exist and develop.

CONCLUSION

Through calculating and analyzing RCA indexes of each product and sub-section with HS codes, I found that Vietnam has the comparative advantages for 9 items out of 14 ones in three sub-sections as producing raw materials, manufacturing textiles and making garments. Vietnam's total textile garment supply chain ranks fifth on a worldwide scale, following Bangladesh (10.54), Turkey (3.81), China (2.55), and India. (2.47). However, with the RCA index (1.93), Vietnam is much lower than previous competitors. Another finding, the garment-making sub-section in Vietnam not only has a good RCA index of 3.4 (belongs to the top 3 biggest countries), but it is also one of the three leading garment makers of total absolute export value. This sub-section is also the best of the whole supply chain including producing materials, manufacturing textiles, and making garments. In addition, the two upstream supply chain phases remain very poor, with RCA 1.65 for producing materials and RCA 1.29 for manufacturing textiles.

Based on the findings in this research, there are some suggested solutions to help Vietnam heighten its international trading position:

1) The textile garment industry has to be more proactive to ensure stabilizing and optimizing input raw materials to create production competition advantages, especially for utilizing maximumly benefits from FTAs. To do this mission, in short term, garment makers in Vietnam need urgently to look for and diversify raw material supply sources, prioritizing suppliers from member states of FTAs that Vietnam's participating. In the long term, textile garment enterprises must invest in the raw material sub-section to serve themselves and the other same industry firms. It is necessary to create textile garment manufacturing chain links. Based on available enterprises, set up Spinning – Weaving, Dyeing – Sewing manufacturing

[3] OEM = FOB
[4] ODM: Original Design Manufacturing is higher than CMT and OEM. The garment makers have their own designs apart from what CMT and OEM have
[5] OBM: Original Brand Manufacturing is the highest garment-making method that the buyers have their own brand name

groups, distribute production capability and create complete continuous chain links. And then, duplicate it to other products and enterprise groups, ensuring diversifying package products of the textile garment production chain. It's important that enterprises should concentrate focally on what raw materials they have the comparative advantages, but not invest sparsely.

2) Promoting raw material and fabric sub-sections needs a macro synchronous long-term strategy of the Vietnamese central government as well as Vietnam Textile Apparel Association (VITAS – the largest NGO of textile garment enterprises in Vietnam) because investment rates of these sub-sections are much higher and the production technologies, technical standards are required more strictly than garment due to serious environmental and ecological regulations. The government must issue investment encouragement policies to invite and attract foreign investors into raw material and fabric manufacturing projects. Apart from attracting foreign investors, Vinatex (Vietnamese national textile garment group) must express its leading role to solve this difficult problem.
3) Textile garment enterprises in Vietnam must be proactive and aggressive to transform their simple manufacturing modes – CMT up to higher ones OEM, ODM, and OBM through upgrading production technologies, modernizing machinery, and training and developing high-quality human resources. This transformation progress is very hard and not able to complete in a daily or monthly duration, but yearly time, even decades. Therefore, the strong policy supports and timely financial subsidies of the central government are extremely significant for enterprises. For enterprises, they need to cooperate and link each other solidly so that all experiences, best practices, and even failures of enterprises over this revolutionary transformation can be efficiently shared and mutually learned to succeed together.

This paper has two limitations. The first limitation is that the data is only from 2017 to 2021. The research will be more exact and dependable if the data is collected over a longer period of time, such as 10 years or even 20 years. This is a suggestion for further research to expand data by extending the time period. Second, the quantitative method used in this article cannot explain why producing raw materials and manufacturing textiles are shortcomings in Vietnam's textile garment supply chain. As a result, it is advised that future studies should combine the RCA calculation approach with other qualitative methodologies, such as implementing surveys, conducting extensive interviews, and so on.

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