



Just Jobs in Global Value Chains: Defining Inclusive Industrialization for ASEAN

Sabina Dewan, Divya Prakash and Tanja Verena Matheis

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Cover photo

"A day in the life of Chhun Srey Sros, a garment factory worker in Cambodia"

Photo by UN Women Cambodia/Charles Fox

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1. Introduction

Over the last three decades, the world has seen a shift away from arms-length trade brokered through trade agreements between governments toward a fragmentation of production processes across nations carried out through private transactions between firms. These production chains span a range of activities that firms and workers undertake to bring a product from its conception to its end use,¹ adding different degrees of value at each stage. Enabled by cheaper technology, transportation and lower tariffs, global value chains (GVCs) have helped many developing countries employ surplus labor in specialized manufacturing processes in sectors such as electronics, textiles and garments.² This shift fuelled economic growth in the medium or low income countries that were able to claim their share of global production chains.

Yet numerous examples of industrial accidents and poor working conditions cast doubt on whether the shift toward global production chains and the ensuing economic growth in some nations improved living standards for the very workers that powered their expansion. For one, governance has not evolved quickly enough to hold private actors accountable for the treatment of workers in elaborate, non-transparent production chains. Second, not all developing nations were able to diversify their economies beyond specialization in specific low-skilled labor-intensive sectors. Within these value chains, the ability of firms to upgrade their production processes or products or move to higher value

added activities varies significantly. Third, this economic upgrading, even when it occurs, does not always lead to improvements in the well-being of workers or social upgrading. The gains of GVC-led growth have, at best, been unevenly distributed.³

In recent years, the discourse on GVCs has evolved from describing the phenomenon of the fragmentation of production to understanding economic and social implications. However, there are few studies that examine the link between economic upgrading and social upgrading, which may go in both directions (Taglioni & Winkler, 2016). Improvements in production processes can lead to a safer work environment and the upskilling of workers. Workers' well-being and skills are a prerequisite for companies moving to higher tiers of GVCs where production employs more advanced technologies or diverse tasks. Previous studies in manufacturing and agricultural production show that the economic gains from greater integration into global production may not automatically translate into improvements in living standards (e.g. Rossi 2013, Pegler 2015, Bernhardt & Pollak, 2016).

Beyond a few such examples, studies often do not delve deep enough into the local context to understand what drives governments, businesses, and workers' decisions to integrate into GVCs, and how economic upgrading relates to social upgrading in labor-intensive production chains. Understanding this is fundamental to

Table 1

Composition of the Sample for the Quantitative Survey

	Apparel Sector		Electronics Sector	
	Myanmar	Vietnam	Thailand	Vietnam
Firm Managers	60	108	60	52
Number of Workers	202	268	230	132

Source: CAF - JJJ 2017; Kenan Foundation Asia - JJJ 2018; and CESD - JJJ 2018

assessing whether, and under what conditions, improvements in production processes lead to better living standards for workers.

To fill this gap, this study examines economic and social upgrading in the apparel sector in Vietnam and Myanmar, and the electronics sector in Vietnam and Thailand.ⁱ The study is based on surveys of workers and firms, as well as semi-structured interviews with stakeholders including policymakers, industry representatives, and experts.

Although the sample is not nationally or even representative at the sectoral level, it provides in-depth information about upgrading patterns and the linkages between economic and social upgrading. Such information is rare, especially in the case countries, because of the absence of surveys that gather information simultaneously from firms and workers in an integrated manner.

The apparel and electronics sectors provide employment for millions of low-skilled workers.

These labor-intensive sectors are seen as a foundation for industrialization. The expectation is that as countries utilize more of their surplus labor, economic growth will improve, countries will move up the value chain and wages will rise with productivity, creating a virtuous circle. This is the expectation of inclusive industrialisation that Sustainable Development Goal 9 refers to: "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation".

Vietnam has seen its apparel sector expand consistently since 2007, while that of Myanmar's has done so since 2013 (UN Comtrade, 2018). The electronics has been growing rapidly since the late 2000s with high-tech multinational corporations (MNCs) moving their factories out of China as part of the "China plus one"ⁱⁱ strategy (Sturgeon & Zylberberg, 2016). Both sectors are characterized by (i) elaborate global production and value networks as a result of which they are export orientated; (ii) higher degrees of foreign direct investment (FDI) than other sectors, and

ⁱ Appendix 1 details the methodology

ⁱⁱ In "China plus one," firms pair their China investments with a second facility in a nearby Asian economy. This strategy posits that firms do so either to reduce costs, manage risks, or both. (Enderwick, Peter. 2011. "A 'China-Plus-One' Strategy: The Best of Both Worlds?". <https://content.iospress.com/articles/human-systems-management/hsm0735>)

(iii) they are labor-intensive and have high levels of female participation.

The two sectors also have significant differences. The electronics sector, relative to apparel, enjoys economies of scaleⁱⁱⁱ thanks to a considerably higher level of technological sophistication^{iv} and specialization along longer but geographically more concentrated GVCs. It provides more opportunities for participating countries to upgrade their technological capabilities and skill base. Global value chains in the electronics sector are commonly characterized as producer-led, while those in the apparel sector are generally buyer-led.^v Technological spill-overs^{vi} in producer-led GVCs, largely from the lead firm, tend to be stronger than in buyer-led GVCs.

This study seeks to assess the impact of GVC participation and economic upgrading in the apparel and electronics value chains on the quantity and quality of employment. It sheds light on what “inclusive industrialization” means in practice in countries such as Vietnam, Thailand and Myanmar.

This report is divided into eight parts. Following the introduction, section two explains economic and social upgrading in detail. Section three provides an overview of the electronics sectors in Vietnam and Thailand, while section four relies on primary data to examine the economic and social upgrading in those. Section five provides an overview of the apparel sectors in Vietnam and Myanmar and section six relies on primary data to examine the economic and social upgrading in them. Section seven analyzes the feedback mechanism from workers to firms in Vietnam, Myanmar, and Thailand. Section eight analyzes the determinants of the economic upgrading and social upgrading to answer two research questions: (1) What determines economic and social upgrading at the firm level? (2) What types of workers are more likely to be socially upgraded, thus benefiting from the economic upgrading in their firms? Quantitative analysis is complemented by evidence from narrative interviews with stakeholders conducted during field work in the respective countries.

iii According to Gill and Kharas (2007), the scale elasticity for electronics products is greater than 1 while that for apparel products is way below 1

iv According to the Statistical Classification of Economic Activities in the European Community (NACE), the electronics sector is classified as a high-tech industry while the apparel sector is a low tech one.

v Producer-driven chains are led by international manufacturers seeking vertical integration to ensure ownership and control. Representative industries are natural resources (oil, mining, and agribusiness), capital goods and durable consumer goods. On the other hand, the buyer-driven chains are led by retailers who seek integration of the network and have better logistics. Examples include Sears, Nike, Gap, and Wal-Mart (Source: <https://estrategiaparatodos.blog/posts-in-english/global-value-chains-gvc-and-governance/>)

vi Technological spillovers are defined as the beneficial effects of new technological knowledge on the productivity and innovative ability of other firms and countries

2. Economic and Social Upgrading

The integration into manufacturing value chains does not necessarily lead to innovation in firms, nor does it automatically lead to the improvement of working conditions and workers' well-being (Rossi 2013). In the literature on value chain analysis, the concept of 'economic and social upgrading' (Barrientos et al. 2011, p. 319) has been widely used to characterize economic strategies of firms and sectors and potential social gains for workers and their communities associated with value chain integration.

The absence of social gains or the worsening of working conditions are referred to as 'social downgrading' (Barrientos et al. 2011, p. 320). The concept allows a greater emphasis on the social outcomes of value chain integration, which is also the focus of this comparative study.

Kaplinsky and Morris (2001) defined economic upgrading as 'the process by which economic actors – firms and workers – move from low-value to relatively high-value activities in global production networks.' The authors describe four different kinds of economic upgrading, with varying implications for skill development and jobs: process upgrading, product upgrading, functional upgrading and chain upgrading. For the purpose of this study, we focused on the first three because their definitions relate

to firm-specific improvements that can be operationalized in a firm level survey:

- Process upgrading involves changes in the production process with the objective of making it more efficient. This could involve a substitution of capital for labor (adopting automation for instance) thereby reducing jobs for low-skilled workers.
- Product upgrading refers to the introduction of more advanced product types, determined by their increased unit value. Product upgrading usually implies the need for more medium- and high-skilled workers because production steps may become more complex or require a knowledge-intensive certification.
- Functional upgrading involves firms changing the mix of activities toward higher value-added tasks, including finishing, packaging, logistics or transport. This can be done through vertical integration, which adds novel capabilities to a firm or an economic cluster it can be accomplished through specialization, which substitutes one set of activities for another; for example, an apparel firm that moves out of production and into brand marketing and design. Both of these involve new worker skill sets, and are likely to create new jobs.

Kaplinsky (2013) shows that process and product upgrading are generally recognized in the economics of innovation, explaining a firm's changing position within the chain, while a typical form of functional upgrading denotes a move from assembly to a diversity of functions within a GVC, for example logistics, packaging or services.

Social upgrading refers to enhancing the rights and entitlements of workers, especially their quality of employment (Barrientos et al. 2011). Determinants of quality include appropriate wage levels, working hours, social protection, occupational health and safety, training and promotion, protection from violence at the workplace, non-discrimination and the right to collective bargaining and representation of worker interests.

The dimensions of social upgrading used in the survey are by no means exhaustive, but they are central to a minimum standard of quality under which economic and social upgrading could be linked in the firms and sectors under study. For example, the worker questionnaire included modules to collect information on the quality of facilities, namely access to drinking water, separate toilets for men and women, and first-aid. In manufacturing, social upgrading relies on the compliance with safety regulations, factory temperature control, air quality, and lighting,

as well as on the elimination of fire hazards and noise prevention.

The quantitative survey covered most of these aspects in the questionnaire for workers. Evidence on issues raised by workers and their representatives is complemented by semi-structured interviews with stakeholders, notably with academics and worker representatives. This report focuses on several dimensions of social upgrading in relation to economic upgrading strategies in apparel and electronics. The purpose is to identify a potential correlation between firms' strategies and the situation of their workers.

The study explored the extent to which economic upgrading goes along with improvements for workers; for instance, wage growth, a promotion, and opportunities for training. The purpose is to understand whether and how firms upgrade their production, and whether the upgrading is associated with a positive change in working conditions. Therefore, the analysis takes into account changes in leave policies, health insurance, family support, regular preventative health check-ups, and safety training. Policies pertaining to the protection of women and maternity benefits are also part of the survey. Finally, the study examines feedback loops through which workers can convey grievances to a firm's management.

Social upgrading refers to enhancing the rights and entitlements of workers, especially their quality of employment.

The study makes use of data gathered in apparel and electronics sectors in Vietnam, electronics sector in Thailand and apparel sector in Myanmar. Consistent approaches in data collection allows for two sectoral comparisons, where Vietnam

serves as a reference country that has integrated into global value chains in a fairly short amount of time.

3. Overview of Electronics Sector in Vietnam and Thailand

3.1 Growth, Trade, and Investment

Vietnam's electronics industry has made great strides in the past few years to become a key sector contributing significantly to the country's economy. The average annual growth rate of the industry was about 26 percent between 2008 and 2013; and it reached 37.5 percent by 2014 (General Statistics Office of Vietnam, GSO, 2014). At 30.7 percent of total exports, electronics were Vietnam's largest export in 2012, with turnover reaching USD 22.9 billion and doubling to USD 57 billion by 2015 (GSO, 2015). Vietnam became the 12th largest electronics exporter in the world and ranked third among the Association of South-East Asian Nations (ASEAN) (DBS, 2015). In particular, Vietnam is now becoming a hub for electronics production and the second largest exporter of smartphones in the world after China (BDG, 2016).

At present, Vietnam exports computers and electronics products to over thirty countries and across multiple regions in the world. The European Union (EU), United States (USA), China, and South Korea are the major export markets of Vietnam's electronics products. According to the General Department of Customs, the value of exports of electronics goods have increased nearly five times, while the value of imports of

electronics goods has nearly tripled from 2011 to 2016. Since Vietnam is almost exclusively, engaging in assembly, electronics exports went hand-in-hand with imports in the sector. South Korea, China, ASEAN, Japan, Taiwan, and the USA are the major import markets for Vietnam's electronics products. The imports of electronic products from these countries are inputs for Vietnam's electronics sector (GSO, 2016).

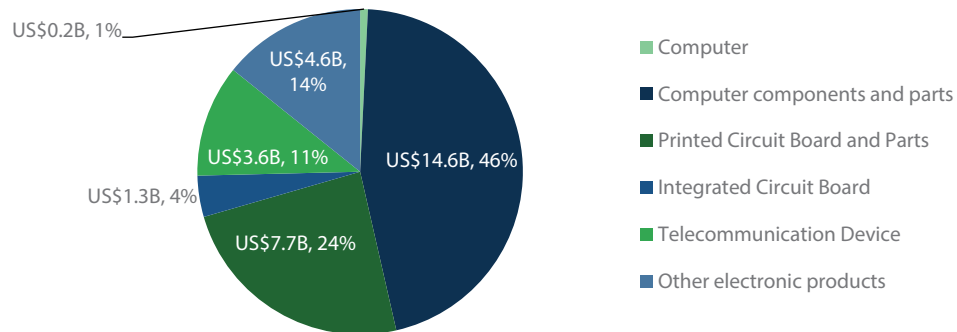
Vietnam is an important player in electronics value chains. But because assembly is the main activity, domestic content in electronics exports is limited relative to other manufacturing sectors such as automotive and apparel. The electronics sector has limited forward and backward linkages (Le Van Hung, 2018).

While Vietnam's stature as an electronics producer is newer, Thailand has been long acknowledged both regionally and internationally as a major hub in the electronics sector, particularly for tier 3 and tier 2 firms.^{vii} Also, the sector has served as a major driver of growth for Thailand's economy. The sector contributed 15 percent of the country's GDP (Bank of Thailand, 2015). Thailand has been engaged in electronics value chains since the mid-1970s. Between the 1970s and 1980s, the country became an important assembly hub in

vii Tier 1 companies are the firms that have a direct relationship with and sell to original equipment manufacturers (OEMs). These companies consist of the most advanced technologies and processes, and are major companies in their own rights. Tier 2 refers to companies that produce and supply parts from the material obtained via Tier 3 to Tier 1 level. Tier 2 firms are comparatively smaller than Tier 1 but equally vital for the supply chain. Tier 3 suppliers are the foundation of the entire supply chain. They provide the required materials, such as metals and plastic, in their raw form or almost raw state to Tier 2 and Tier 1 companies.

Figure 1

Thailand's Major Export Markets for Electronics Products, 2015



Source: Electrical and Electronic Institute, 2016

Southeast Asia for semiconductors, especially for diodes and capacitors. Later in the mid-1980s, hard disk drives (HDD) surpassed semiconductors. At present, the industry has shifted from HDD to integrated circuits, moving up the value chain.

Thailand's electronics sector has continued growing in recent years. According to the Electrical and Electronics Institute (EEI), the growth rate of the manufacturing production index (MPI) in the electronics sector is about 21 percent during the 2012 to 2017 period.^{viii} The electronics industry was the country's third largest export category in 2015 (Ministry of Commerce of Thailand, 2016). The overall trade in the electronics industry in 2015 was approximately USD 97 billion, with export revenues accounting for over USD 53

billion (Electrical and Electronics Institute, 2015). For the microelectronics sector, the overall trade was approximately USD 57 billion, with export revenues accounting for over USD 31 billion (Electrical and Electronics Institute, 2016). Based on the export values, the major products of the microelectronics industry are computer components and parts, printed circuit boards and parts, and integrated circuits (IC) (**Figure 1**).

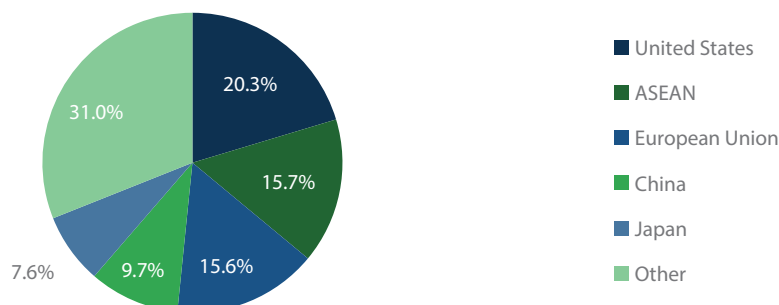
The major export markets for Thai electronics products include the USA, ASEAN, and EU. These three markets account for 51.6 percent of total exports (**Figure 2**).

Large flows of FDI fuelled the surge in electronics-related trade activities. This is typical of vertical

^{viii} MPI is an index that tracks manufacturing activity in different sectors of an economy. The MPI number measures the manufacturing production for the period under review, as against the reference period. MPI is a key economic indicator of the manufacturing sector of the economy. MPI index is currently calculated using 2013 as the base year. It measures real output in the manufacturing relative to a base year.

Figure 2

Thailand's Export Revenues by Products, 2015



Source: Electrical and Electronic Institute, 2016

integration^{ix} in global value chains. Vietnam has become an attractive destination for FDI inflows in the electronics industry. In addition, the last six years have seen a trend in large electronics corporations moving production facilities from countries such as China, Thailand, and Malaysia to Vietnam to take advantage of low labor costs and favorable tax incentives.

3.2 Employment Conditions

Vietnam's electronics sector is an important and growing source of employment. This is evident in the rise in the absolute number and also the share of electronics in total manufacturing employment (**Table 3**). In absolute terms, the number of workers in the electronics sector increased to more than double between 2010 and 2016. In relative terms, the share of electronics in manufacturing employment rose from 3.6 percent in 2010 to 6.3 percent in 2016 (Labor Force Survey,

2010 and 2016). An expansion of employment in the electronics sector improves formality from 83.2 percent in 2010 to 87.3 percent in 2016 and overall manufacturing sector formality improved from 42.6 percent in 2010 to 50.7 percent in 2016 (Labor Force Survey, 2010 and 2016).

Educational attainment is often used as a proxy for skill in Vietnam. The electronics sector has the highest share of workers with upper secondary schooling or higher, estimated at 67.6 percent in 2016, by far exceeding 37 percent for all manufacturing (Labor Force Survey, 2016).

In 2017, Thailand's electronics industry employed 357,978 people of which 80 percent were employed in low-skilled positions, mostly as assemblyworkers, plant, and machinery operators, with the remaining 20 percent employed in more skilled positions at managerial, professional, and technician level. The electronics sector has the

^{ix} Vertical integration is the combination, under single ownership, of two or more stages of production or distribution (or both) that are usually separate. Vertical integration is important as it reduces transaction costs, assures the supply of critical materials, improves coordination of production and inventories between stages, is best equipped to innovate and higher entry barriers for new entrants.

Table 3

Employment in the Vietnam's Electronics Sector by Formality and Gender

Year	Total Employment (number of workers)			Formal Workers (%)		Female Workers (%)	
	Electronics	Manufacturing	Share (%)	Electronics	Manufacturing	Electronics	Manufacturing
2010	250,381	6,914,218	3.6	83.2	42.6	65.7	52.3
2016	584,435	9,200,835	6.3	87.3	50.7	65.8	54.8

Source: VASS-CAF calculation based on Labor Force Survey, 2010 and 2016

highest share of workers with a lower secondary or upper secondary education accounted for 52 percent and vocational education accounted for 28 percent, majority of them employed in low-skilled positions (Labor Force Survey, 2017).

Although the electronics sector in both Vietnam and Thailand employs more women and they are the foundation of the sector, the study found that most female employees are limited to low-skilled jobs while higher-skilled positions are given to men. Most female employment is concentrated in clerical work, services, and the assembly or production lines.

3.3 Working Conditions

In Vietnam, workers in the electronics sector operate in high-pressure conditions. When orders peak, workers put in 14 to 16 hours a day. Among the occupational hazards that workers are exposed to are hazardous chemicals, joint pain as a result of working on repetitive tasks in the same posture, hearing loss as a result of exposure to noisy machinery for extended periods, vision loss, and mental stress (CGFED, 2017). Some reports suggest that firms sometimes hide information such as workers' health records or the toxic nature of chemicals used in the factory (CGFED, 2017).

Meanwhile, workers that are focused on earning an income do not always acknowledge, much less act on, the risks of their work (Davis, ILO 2018).

In 2017, an inspection campaign was launched by the Vietnam government for the electronics sector to improve efficiency and productivity, as well as to strengthen the rights of workers. The results of the inspections show that most of the enterprises were violating safety regulations. This was partly a result of the fact that the employers and employees did not fully realize their responsibilities under the labor laws. Constantly changing compliances and the vague nature of some regulations also make it difficult for enterprises to comply (MoLISA, VGCL & ILO, 2017).

Unions play a major part in the lives of workers in Vietnam. There have been different kinds of protests from these unions which conduce to exhibit a mixed kind of behavior at the factories. Numerous situations - for example, a group of workers selecting a union leader versus the factory management randomly picking the union representative - tends to show a negative correlation in terms of the disputes. While sometimes in case of disputes outside mediators are needed to control the unions and workers'

leader. Sometimes the foreign-owned factories have shown a monopoly over the locally-owned equivalents in terms of dissents of management on the matter of language and cultural barriers with the workers (Anner, ILO 2017). According to Better Work, about 20 percent of firms encountered at least one wildcat strike in the past three years, which puts this sector at the top crosswise of the world in terms of wildcat strike waves. Trade Unions have tried several times to initiate a collective bargaining process for the workers while varying from the demands of factory workers where they often and constantly found that they need to strike again in order to address their basic needs (Anner, ILO 2017).

According to Better Work, about 20 percent of firms encountered at least one wildcat strike in the past three years, which puts this sector at the top crosswise of the world in terms of wildcat strike waves.

In Thailand, workers in the electronics sector face multiple health and safety risks because they have to work with chemicals as well as perform repetitive tasks for long periods of time. Most of the workers in the production line work for more than eight hours a day. In fact, the average working hours per day is 11–12 hours. The workers have to work more than eight hours because they are paid a minimum wage rather than a competency-based wage.^x Workers have limited bargaining power even with the Labor Federation of Electrical Appliances and Electronics Workers acting as the major industrial federation of unions in the electronics sector. Many electronics firms are uneager when employees attempt to establish a trade union or bargain for their rights.

^x Minimum wages have been defined as “the minimum amount of remuneration that an employer is required to pay wage earners for the work performed during a given period, which cannot be reduced by collective agreement or an individual contract”. Competency-based wages are defined as wages paid to the individuals based on the pattern of knowledge, skills, abilities, behaviors, and other characteristics that an individual needs to perform work roles or occupational functions successfully.

4. Research Findings: Electronics Sector

4.1 Economic Upgrading in Electronics Sector^{xi}

The survey conducted for this report collected information on three types of economic upgrading - process, product, and functional, which took place in firms in the three-year period between 2013 to 2016 in Vietnam and between 2014 to 2017 in Thailand. This reference of the previous three years aims to capture the lag effect of economic upgrading translating into social upgrading. Due to the high turnover of workers in these two sectors, the study does not consider a longer period, for example, five years.

Overall, 39 out of 52 firms, or 75 percent of the sample, have at least one type of economic

upgrading in the reference period (**Table 4**). Table 4 shows that process upgrading (incorporation of more sophisticated technologies into production) is the most prevalent, deployed by just under 85 percent of surveyed firms in the sector. This, by far exceeds product upgrading (producing higher-value products) undertaken by 15 percent of firms, and functional upgrading (moving to higher-value functions) undertaken by 46 percent of firms. This is fairly consistent with what is found in other studies. That is, many domestic enterprises place greater emphasis on process upgrading, for example, 5S^{xii}, TQM^{xiii}, and lean manufacturing (Dang Tan Duc et. al., 2016).

Table 4

Economic Upgrading in Electronics Sector

	Absolute Number of Firms	Percentage (%)
No economic upgrading	13	25
Economic upgrading	39	75
Process upgrading	33	63
Product upgrading	6	12
Functional upgrading	18	35
Total	52	100

Source: VAF - JJN, 2017

xi The analysis of Economic Upgrading in Electronics sector in Thailand have not been added in the study due to the data challenges and quality of data. For detail information please see appendix

xii 5S stands for Sustain, Sort, Straighten, Shine, and Standardize

xiii TQM stands for Total Quality Management

Table 5

Process Upgrading (Number of Firms)

Process Upgrading	Electronics Sector
Replaced one or more tasks that were formerly done manually with a machine	11
Replaced one or more machines with technically more advanced ones	16
Introduced a new and better software to control/run the machines	5
Organized the production process differently, e.g. re-arranged available machines and /or workers, in the available production setting	24
Any process upgrading	33

Source: VAF - JJN, 2017

Process upgrading - the move towards a more efficient production process^{xiv}

Firms applied several ways of process upgrading, both in terms of machines, software and production rearrangements (**Table 5**).

Product upgrading - the move towards more advanced product types^{xv}

Product upgrading is normally considered to be an advanced step beyond process upgrading. This explains why a considerably smaller proportion of surveyed firms engage in product upgrading rather than process upgrading. The former is often done in form of transitioning from lower value products to more premium products such as more sophisticated parts, components, and/or products in the electronics sector.

Six electronics firms moved up the supply ladder, from the third-tier to become second-tier or first-tier suppliers, or the lead firm.

Functional upgrading - the move towards higher value-added tasks

Function upgrading is the most advanced type of upgrading within a sector. Enterprises need to acquire new, higher value-added capabilities. Eighteen of the 52 surveyed electronics firms, or 35 percent, expanded their functions, taking on new responsibilities in producing more of their own inputs for production rather than importing them - producing more electronic sub-assemblies^{xvi} or final electronics products, moving into research and development activities or starting distribution of their own products.

xiv This could involve a substitution of capital for labor (e.g., higher productivity through automation) and hence a reduction of low skilled work.

xv New products are introduced, which often requires more skilled jobs to make an item with enhanced features

xvi Sub-assembly is the process that combines or builds components into component assemblies for inclusion in larger end items. It is the combining of components to create a new parent that requires assembly. This is a manufacturing process in and of itself.

Box 1

Vietnam: Moving Up the Value Chain in the Electronics Sector: Progress, Benefits and Challenges

The majority of electronics manufacturing plants in Vietnam focus on assembly with mature technology, with a limited production of basic components. Most of the Vietnamese suppliers account for only a small part of the total number of international suppliers and only provide very simple inputs to lead firms. A huge share of electronic parts and components are either imported from overseas or produced by Vietnam-based foreign manufacturers. This fact explains the limited product and functional upgrading in the sector, particularly among Vietnamese firms.

However, recently there have been clear signs of change for the better, as reflected in a sharp increase in the number of Vietnamese first and second-tier suppliers to Samsung Corporation. The number of first-tier suppliers to Samsung Vietnam surged from four in 2014 to 35 as of November 2018.^{xvii} The number of second-tier suppliers has also increased to nearly 300 enterprises.^{xviii}

Such encouraging developments are attributed to a large extent to the joint efforts of the Government of Vietnam and Samsung to strengthen the corporation's linkages with Vietnamese firms. This is part of Vietnam's modern industrial policy. Specifically, the Ministry of Industry and Trade and Samsung Vietnam signed a memorandum of understanding in March 2018 on the training of 200 qualified Vietnamese consultants to advise and train Vietnamese supporting enterprises to enable them to integrate more deeply into Samsung's global value chain. By the middle of July 2018, Samsung Vietnam completed the First Supporting Industry Consultant Training Course, in which the first 25 Vietnamese experts spent three months with Korean experts in the field of Manufacturing Innovation and Quality Improvement.^{xix}

Despite these efforts, Vietnamese firms still struggle to get into Samsung's GVC. Our in-depth interviews with one of the firms that participated in Samsung's technical assistance program, which is offered to potential suppliers, suggests that risk is a key factor in a firm's decision to work with Samsung or not. This firm has already been supplying to numerous Japanese firms for a long time. They say that Samsung's orders are in large volumes, but with very short lead times. This requires considerable new investments and such orders are harder to execute. This is different from Japanese firms that often place orders well in advance, sometimes a year before the actual delivery date. By the time of the interview, the firm had not yet made the final decision on whether to become a part of Samsung's GVC or not, although working with Samsung could offer large benefits.

xvii Source: <https://thoibaokinhdanh.vn/thi-truong/them-doanh-nghiep-viet-tro-thanh-nha-cung-ung-cap-1-cua-samsung-1052754.html>

xviii Source: <http://nhipcaudautu.vn/thuong-truong/samsung-nham-toi-muc-tieu-nang-ty-le-noi-dia-hoa-len-57-3324291/>

xix <https://news.samsung.com/vn/be-giang-khoa-dao-tao-chuyen-gia-tu-van-cong-nghiep-ho-tro-lan-thu-nhat>

4.2. Social Upgrading in Electronics Sector

This report looks at a number of dimensions to determine the social upgrading of workers. These include training, promotion, and wage growth. In addition, improvements in working conditions for workers in production lines are also considered.

4.2.1. Training and Promotion

Some of the surveyed workers testified to being provided with on-the-job training, and training courses. In Vietnam, 29 out of 30 surveyed workers, or 96.7 percent, who received special training reported that their training courses were organized by firms, and more than half of them participated in training courses on a wide range of topics (**Table 6**). Among the different positions, technicians receive training more often than

others do. Over one in four technicians receive training while just over one in five (21 percent) workers do and only a slight percentage of managers do (22.5 percent).

In Thailand, out of 230 workers, 141 workers, or 61 percent, participated in training programs. Ninety-five respondents, or 68 percent, reported that most of their training programs were organized by their firms. The study found that 48 percent of technicians have been trained in various skills, including technical knowledge, technical foreign languages, computer electronics control devices, and soft skills. For the workers in the production line, the survey found that more than half are provided training in computer electronics control devices (**Table 6**).

Table 6

Training Participation and Promotion in Electronics Sector (Number of Workers)

		Survey Sample	Training Participation						Promotion
			Management Skills	Relevant Technical Knowledge	Technical Foreign Language	Computer, Electronics Control Device	Soft Skills	Total	
Electronics sector (Thailand)	Worker	207	0	0	0	125	0	125	7
	Technicians	23	0	4	4	6	2	16	5
	Total	230	0	4	4	131	2	141	12
Electronics sector (Vietnam)	Worker	38	2	8	3	3	2	8	8
	Technicians	51	7	10	2	0	4	13	17
	Manager	43	7	9	3	2	2	9	11
	Total	132	16	27	8	5	8	30	36

Source: VAF - JJN, 2017 and Kenan Foundation Asia - JJN, 2018

Training is helpful to increase labor productivity but is also a condition for promotion. In Vietnam, 30 out of 132 workers (22.7 percent) received special skills training courses that were related to their new positions. Thirty-six out of 132 workers (27.3 percent) reported that they had a change in position over the last three years. They moved from a lower to a higher position, which also comes with more responsibility and a higher salary. Four cases report the change in position due to an upgrade in manufacturing technology and another four cases reported a change in position owing to a rearrangement of manufacturing processes.

In Thailand, in terms of getting a promotion, 12 out of 230 workers reported that they had a change in position over the past year. As in the case of Vietnam, the move from a lower to a higher position brought more responsibilities and a higher salary. Nonetheless, there were conditions attached to some of the promotions. The research found that a few workers who received a promotion were also asked to resign from their trade union. Stakeholder interviews also confirmed this finding, noting that electronics sector workers are asked to leave their trade union as a condition to get promoted to a more supervisory role within the firm.

Box 2

Thailand: Conditional Promotions

A woman working in a large-scale Japanese firm located in the eastern region mentioned that she has been working in the production line for 23 years and has been promoted to a supervisory position for the last few years. To be promoted, the employer asked her to resign from the trade union as there were worker strikes for wage increase at that time. “I used to be with the colleagues organizing strikes in front of the company,” she was quoted as saying. After resigning, she had to discontinue her role and her active participation in the union.

In another instance, a female worker employed in a Korean firm since 2011 was recently promoted as a supervisor. The employers required her to resign from her leadership role in the trade union. As a supervisor she is entitled to a higher salary along with allowances like a better healthcare package, among others. Her quality of life has improved and she has replaced her motorcycle with a new car. However, not being a member of the union has not stopped other members from approaching her when they need her help and support. In fact she was the one who coordinated our interviews with other workers.

The survey found that production line workers receive limited training. Many of them, who are low-skilled and semi-skilled workers stay trapped in low-skilled positions with few opportunities to upgrade themselves. While electronics firms seem to invest a lot of money in innovation and technology, skills development for workers in the production line is still limited. Production line workers noted that the demands of a 12-hour work day leaves little time for these workers to engage in training programs. Skills upgrading happens on the job.

4.2.2. Wage Improvement

In Vietnam, the average income of all workers in the dataset in 2016 was VND 10.2 million (USD 460) per month in nominal terms and VND 9.4 million (USD 424) per month in real terms. In real terms, the average incomes of workers in the electronics sectors grew by 39 percent between 2013 and 2016.^{xx} The average income in the dataset was found to be higher than the minimum wages of VND 2.6 million (USD 116) to VND 3.75 million (USD 166) (MOLISA, 2015) and higher than the gross living wages of VND 5.1 million (USD 231) (ERC, 2016). The survey points to only a small difference in the average income of male and female workers. This contrasts with labor force survey results that point to a significant gender wage gap in the sector.^{xxi} A high positive

correlation is found between income and the education level - a higher income is associated with higher education.

Interviews with workers from the sector for this study revealed that such social upgrading in the form of an increase in wages only takes place for those workers who have a labor contract that is renewed when it ends. Workers whose contracts are not renewed often find themselves forced to take lower-paid work in different firms.

Comparing the average wages of all Thai electronics sector workers in the dataset, the study found that the average wages in 2018 were higher than the average wages of all workers in 2017. The average wages in 2018 were THB 8,601 (USD 266.2), an increase in real terms of 4.9 percent from the 2017 average of THB 8,171 (USD 240.8) per month. The average income in the dataset was found to be higher than the legal minimum wage of THB 7,824 (USD 230). However, this was lower than the gross living wage of THB 13,359 (USD 393) to THB 17,302 (USD 510) (FLA, 2015).

The survey did not find a significant gender gap in average wages. This finding does not align with the national-level labor force survey which suggests that women were paid an average of 16 percent less than their male counterparts in 2013.

^{xx} As our sample is not nationally representative, figures are different from those derived from the dataset of the labor force survey (LFS). Calculations based on LFS came up with lower incomes of workers, estimated in nominal terms at VND 4.87 and VND 5.57 (or 5.14 million in real terms) for workers in the electronics sector. The rates of growth of real incomes in the electronics sectors respectively were 5.5 percent during the 3-years 2013-2016, or 1.8% per annum.

^{xxi} According to LFS data, in 2013, incomes of female workers relative to those of male workers in the electronics sectors were 92 percent. These figures in 2016 were 97.1 percent, i.e. the gap increased in the electronics sector. As our sample is not nationally representative, estimates are different from those derived from the dataset of the labor force survey (LFS). It should be noted that by design, technicians and managers are heavily over-sampled in this survey. 65 percent of female workers are working as technicians and managers which is not the case at the national level and technicians and managers monthly salaries are higher than the production line workers which is driving the average income of female workers closer to male counterparts. Therefore, there is a small difference between the average income of the female and male workers. These results are only valid for this sample while not representative for the workforce in the two sectors.

This discrepancy can be attributed to the fact that a majority of this study's sample was female workers, 213 females relative to 17 males, skewing the results. Such a pay gap can be explained in part by the increase in the return to observable characteristics of men. Also, there exists a certain degree of discrimination against women working in similar job positions. The discrimination is worse in the younger female workers than the older and it is higher particularly for middle to high-skilled occupation levels (Bui, M. T. T., & Permpoonwiwat, C. K., 2015). As is expected, the data suggest a high positive correlation between wages and education levels - a higher wage is associated with higher education. This finding also aligns with the labor market survey.

4.2.3. Improvement in Working Conditions

Social upgrading of working conditions is considered to have taken place if there is an improvement in working hours; that is, a reduction in the number of working hours without a decrease in income and/or improvement in compliance with labor regulations and social benefits for workers. Working conditions in this study are divided into two parts. The first part is general regulations, which cover working hours, leave conditions, compensation, wages, and social benefits. The second part is facilities or compliance with safety regulations.

a. Working Hours

In Vietnam, the average number of working hours for all electronics sector workers is 9.7 hours per day. The minimum time a worker has to work in a day is eight hours, and the maximum time workers report is 12 hours a day. Most workers

have to work nine hours a day. The average working day for all electronics sector workers is 25.2 days a month with a minimum value of 20 days. The maximum number of working days allowed in a month is 28 days.

Despite the fact that the Labor Protection Act of Thailand states that the minimum working hours are eight hours per day or 48 hours per week, the working hours of workers in the electronics sector, especially those of production line workers, seems to exceed eight hours per day.

The average working hours for all workers is 12 hours per day, though the study found a wide range between three and 22 hours. Workers putting in 22 hours per day are doing double or nearly triple shifts in addition to overtime. When workers work during the swing shift – between the afternoon to late evening - they generally receive double the wages. The number of workdays per week ranges between six to seven days a week. In the past year, 84 percent of all workers reported no change in the number of working days or working hours, 5.7 percent reported a decrease in both the working days and working hours and 10.3 percent reported an increase in both the working days and working hours.

b. Social Benefits

The survey noted that social benefits for workers in electronics firms include a leave policy (sick leave, personnel leave, and annual leave), social security, health insurance, and preventative health check-ups.

Many employers in both countries mentioned that the shortage of labor is one of the key factors

that drove them to improve social benefits for their workers. These social benefits were seen as tools to attract and retain workers with the firms. Vietnamese firms, under pressure to be productive and be seen as socially responsible, tend to pay attention to working conditions (**Box 3** and **Box 4**).

Respondents were asked whether they saw an improvement in different social benefits. One could select more than one answer. In Vietnam, 18 out of 38 workers (47.4 percent) saw an improvement in leave policy, 18 (47.4 percent) reported improvement in work-related safety training, 16 (42.1 percent) saw an improvement in health insurance, 16 (42.1 percent) an improvement in regular fire training,

14 (36.8 percent) an improvement in access to preventative health checkups, and 10 workers (26.3 percent) improvement in family support (**Figure 3**).

In Thailand, only 61 workers, or 26 percent, said that they saw such improvement. In addition, out of the seven benefit types, only four improvements were observed by the workers. Only 24 workers (10.4 percent) saw an improvement in health insurance, 16 workers (6.9 percent) saw an improvement in leave policy, 11 workers (4.7 percent) saw an improvement in work-related safety training and 10 workers (4.3 percent) saw an improvement in fire training. In-depth interviews did shed light on the fact that some workers saw an improvement of inpatient

Box 3

Vietnam: High Turn-over Prompts Enterprises to Improve Worker Welfare to Maintain a More Stable Labor Force

As a province with many industrial parks, Binh Duong has high worker turnover. The expectation is that after the Lunar New Year, roughly a fifth of workers quit; in reality, it could be even more than 30 percent. A private firm with 800 employees said “after the Tet holiday, the firm faces a severe labor shortage, which directly affects the production and execution of orders. A stable workforce is very important to the firm.”

In addition to complying with mandated labor regulations, such as social and health insurance, medical examinations, and annual leave, the firm also undertakes other efforts to improve worker welfare. Three years ago, the firm opened a kindergarten and provided free tuition for the children of its workers. Workers with children under six years of age are also supported with a monthly milk allowance of VND 60,000 per child. Five years ago, the firm faced a worker turnover rate of about 70 to 80 percent a year, but now the figure is down to about 40 percent. A migrant worker of the firm said, “although the income received from the firm is not much higher than that of companies in the industrial zones in the province, the firm is thoughtful in caring for workers. I will not leave the firm until they no longer need me.”

Box 4

Vietnam:

The Enterprise Enhances Worker Welfare to be seen as Socially Responsible

A firm with 400 employees managed both direct sales and outsourcing orders. According to the sector's international codes of conduct, the firm has to maintain a certain standard of working conditions. The firm decided to improve the working conditions first, and subsequently invest in machinery gradually. "Any change in machinery and equipment has to go hand-in-hand with training to ensure adequate skills of both the managerial staff and workers. Improving working conditions will bring higher productivity, which is the starting point to increase competitiveness and to get more orders. Stable production is needed for sustainable business development".

When customers come to sign orders, in addition to the technical conditions, labor skills, and price, they often check whether the firm complies with standards for social responsibility. To this end, the firm has built an environment of effective cooperation among managers and workers. A hotline is set up to listen to workers' concerns. Safety at work is closely monitored. Labor protection is strictly enforced. The firm always adheres to the principle of fair treatment of workers. Ensuring jobs, training and stable income for workers is key to a firm's productivity growth.

and outpatient benefits, compensation for accidents, an increase in annual leave days, and an increase of the occupational safety and health (OSH) related training.

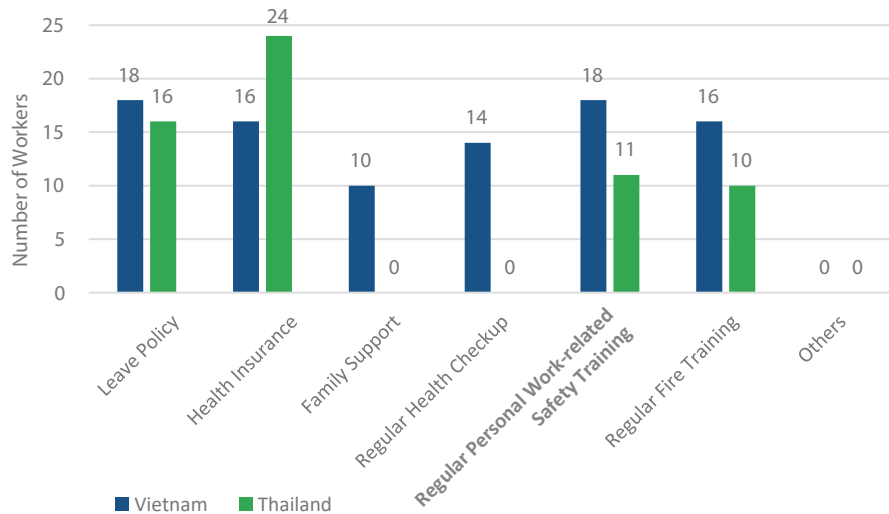
c. Gender Sensitive Policies

Twenty-one out of 26 Vietnamese female workers in the electronics sector responded to questions about whether policies had improved to become more gender sensitive. Ten out of 21 female workers recorded an improvement in the company's policy toward pregnant women, 10 said maternity leave policy had improved, and the one out of three female workers noted an improvement in other gender-sensitive policies.

In Thailand, out of 213 women workers, there are 11 pointed out that there was an improvement in the maternity leave policy. In the past, women did not receive wages during maternity leave, but now many do. In addition, women only got 30 days of maternity leave - less than what was required by law, but now they get 90 days of maternity leave. Seven women workers in the study sample pointed out that there was an improvement in policy provisions pertaining to pregnant women. In the past, many pregnant workers were forced to resign from their jobs. However, the survey shows that now many electronics firms have abandoned that policy. Some have developed special working areas for pregnant workers. These areas are located far

Figure 3

Perception of Workers on Improvements in Social Benefits



Source: VAF - JJN, 2017 and Kenan Foundation Asia - JJN, 2018

from risky working conditions with chemicals and noise, for instance.

d. Occupational Health and Safety Policies

Occupational health and safety are divided into two main categories. The first is facilities such as the provision of drinking water, toilets, and first aid. The second is safety-related policies including air and temperature control, fire and other safety systems, appropriate lighting, noise prevention, and protective gear.

The survey shows that many workers in small and medium electronics firms face risky working conditions, including coming into contact with chemicals, dust, noise, and cutting machines. In-depth interviews with workers suggest that few employers provide protective equipment.

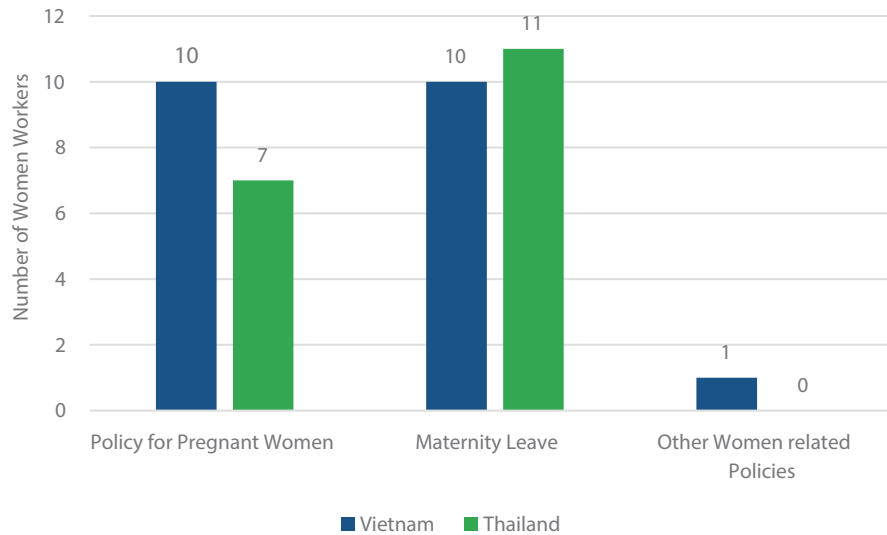
Workers pointed out that they only receive one pair of gloves and one mask per month.

In Thailand, out of 230 workers, 94 workers (40.8 percent) pointed out that drinking water facilities had improved. In the past, drinking water was contaminated with dust. Now, firms use water purifiers. Twenty-four workers pointed out that there is an improvement in toilet systems. In the past, both men and women workers had to use the same toilet, but many electronics firms now provide separate toilets for men and women workers, making for safer working conditions for women.

The most common improvement reported in working conditions was the lighting system with eighteen out of 230 workers (7.8 percent) citing

Figure 4

Perception of Women Workers on Improvement in Women-related Policies



Source: VAF - JJN, 2017 and Kenan Foundation Asia - JJN, 2018

this. Twelve workers, or 5.2 percent, noted that there is an improvement in protective gear such as masks and gloves. Ten workers (4.3 percent) noted an improvement in noise levels, the workers were provided with ear muffs to work in noisy environments.

In Vietnam, 20 out of 38 workers (52.6 percent) pointed out that drinking water facilities had improved and 21 workers (55.3 percent) pointed out that there was an improvement in toilet systems. All firms now have separate toilets for men and women workers.

As in Thailand, the most prevalent improvement in working conditions, according to the survey of the electronics sector in Vietnam, was in the lighting system. Twenty-eight workers, or 73.7 percent, of 38 workers cited this. Twenty-three workers (60.5 percent) noted an improvement in protective gear such as masks and gloves and 17 workers out of 38 (44.7 percent) noted an improvement in noise levels - they were provided ear muffs to work in noisy environments. Twenty-three workers (60.5 percent) noted an improvement in precautions taken to prevent fire hazards.

5. Overview of Apparel Sector in Vietnam and Myanmar

5.1 Growth, Trade, and Investment

The apparel sector is a labor-intensive, export-oriented sector that is considered an important springboard to deepen industrialization and global integration, as well as helping workers move out of agriculture to take up opportunities in manufacturing.

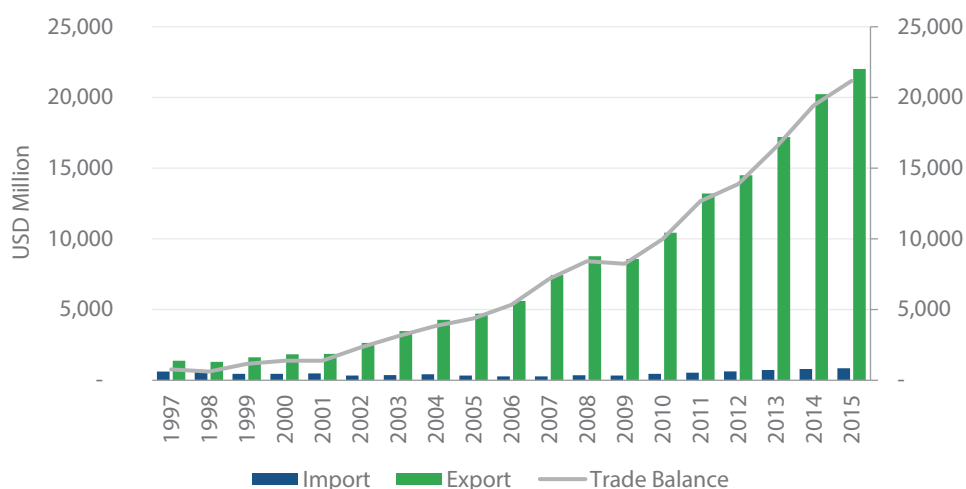
The external trade performance of Vietnam's apparel sector has been impressive (**Figure 5**). In 2016, Vietnam has been recognized as the third top garment exporter in the world, after China and Bangladesh. The country's apparel sector accounts for approximately 16 percent of the its

total export value in 2017. The sector enjoys a large trade surplus (GSO, 2017).

Apparel export grew by 17 percent per year on average over the period from 1997 to 2015, while the trade surplus – or net exports - grew even faster, by 22 percent per year on average. The latter reached USD 21.5 billion in 2015, thus becoming one of the biggest foreign exchange earners for Vietnam. In 2016, according to GSO, the export value rose slightly to reach USD 23.8 billion. The impressive growth of net exports in the apparel sector underscores Vietnam's comparative advantage in this labor-intensive manufacturing sector. Vietnam has a comparative

Figure 5

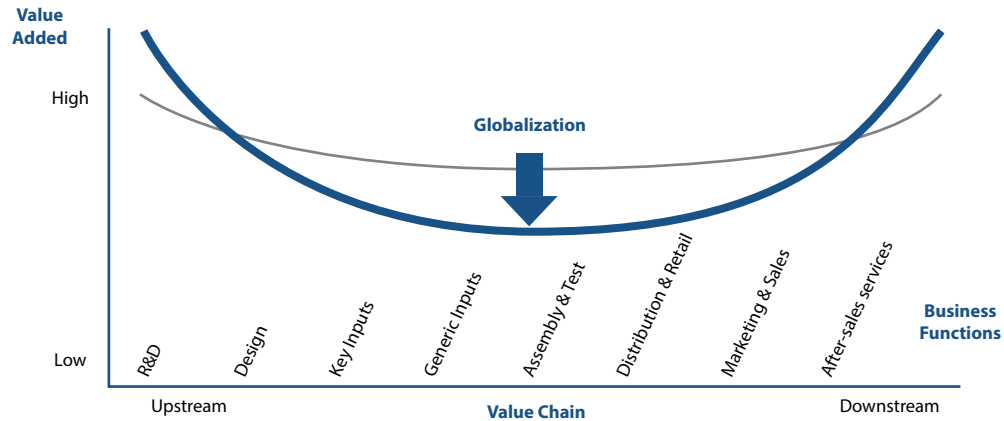
Vietnam's Export and Import of the Apparel Sector (USD million)



Source: UN Comtrade Database, 2015

Figure 6

A Generic Global Value Chain, by Value Added for Each Stage of the Business Process, Commonly Known as “Smile Curve”



Source : Fernandez-Stark et. al. (2011)

advantage in the manufacturing of textiles and electronic items mainly due to the country's advantage of cheap labor and natural resources relative to other countries in the region.

Vietnam exports apparel and textiles to 180 countries and territories around the world (GSO, 2016). The main market for its textile and garment products are the US, EU, Japan and South Korea.^{xxii} Despite the impressive export performance of the apparel sector, Vietnam is still struggling to move up the global value chain along both sides of the smile curve (**Figure 6**). The apparel sector is still heavily dependent on imported inputs, indicating limited movement up GVCs along the left-hand side of the smile curve by apparel

firms. Nonetheless, in terms of domestic content of export, the value-added generated by apparel is good as indicated by the relatively high value-added over revenue ratios (**Table 7**).

The apparel sector is dominated by domestic private firms. There are not many state-owned enterprises (SOEs), while the number of fully-foreign owned firms is modest relative to that of domestic private firms.

In contrast to Vietnam, Myanmar's garment sector is at an early stage of development with most manufacturers undertaking Cut, Make and Package (CMP) activities.^{xxiii} Myanmar's relatively cheaper labor and its demographic dividend give it an advantage in the global marketplace.

xxii Source: Akhi Akter, Vietnamese textile and apparel industry moving towards USD 50 billion by 2020. 3 February 2018 (accessed at <https://www.textiletoday.com.bd/vietnamese-textile-apparel-industry-moving-towards-us50-billion-2020/> on 21 February 2018).

xxiii CMP is a service provided by factories that essentially cut, make and trim designs into fully produced products. Cut means cutting the garment patterns from fabric role; Make means stitching the complete garment with necessary trims; and Packing means doing the checking, finishing and packing the garment.

Myanmar's exports increased after the EU27 reinstated Myanmar into its Generalized System of Preferences (GSP) in 2013 and the US did so in 2016.

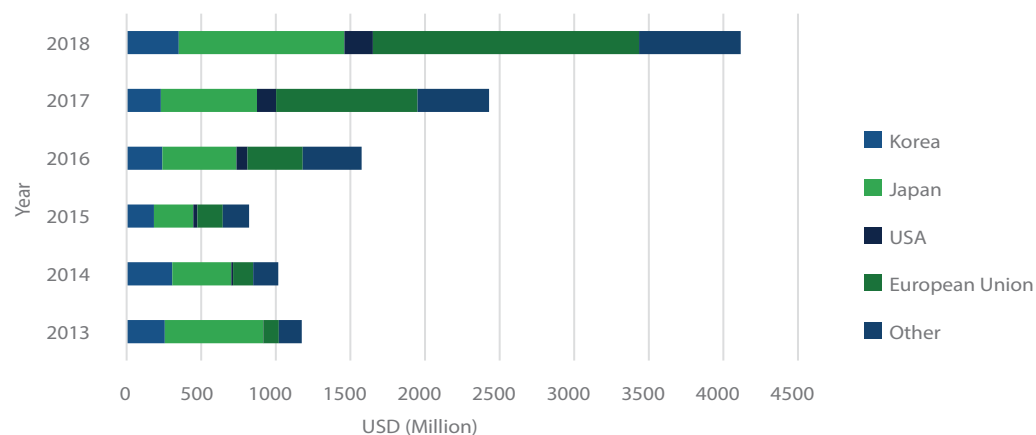
Overall exports to the EU have increased from Euros 0.16 billion in 2013 to Euros 2.1 billion in 2019 predominantly because exports of textile and clothing increased from Euros 0.13 billion to Euros 1.56 billion over the same period.^{xxiv} As a result, the EU became the largest recipient of Myanmar's garment exports in 2018 (**Figure 7**). Also, apparel exports to the US have increased from USD 1.8 million in 2013 to USD 190.7 million in 2018 (UN Comtrade, 2018). While exports to EU and the US increased, Myanmar's exports to South Korea and Japan only grew marginally. The majority of input imports were from China.

5.2. Employment Conditions

The apparel sector plays an important role in employment generation in Vietnam. The sector has claimed a steadily increasing share in total manufacturing employment. It was 25.7 percent in 2016, up from 23.5 percent in 2010 (**Table 8**). In absolute terms, the number of workers in the apparel sector grew by 45.9 percent during the 2010-2016 period compared to a 33.9 percent growth to total manufacturing sector. An expansion of employment in the apparel sector improve formality from 45.8 percent in 2010 to 58.1 percent in 2016 and overall manufacturing sector formality improved from 42.6 percent in 2010 to 50.7 percent in 2016. The improvement in the rate of formal employment happened as more workers have contracts (Labor Force Survey, 2016).

Figure 7

Myanmar Apparel and Clothing Exports by Destination



Source: UN Comtrade Database, 2018, HS 2012 and HS codes of 61 and 62

^{xxiv} European Commission (2019). https://webgate.ec.europa.eu/isdb_results/factsheets/country/details_myanmar_en.pdf

Table 8

Employment in Vietnam's Apparel Sector by Formality and Gender

Year	Total Employment			Formal Workers (%)		Female Workers (%)	
	Apparel	Manufacturing	Share (%)	Apparel	Manufacturing	Apparel	Manufacturing
2010	1,623,459	6,914,218	23.5	45.8	42.6	81.9	52.3
2016	2,367,826	9,200,835	25.7	58.1	50.7	79.5	54.8

Source: VASS-CAF calculation based on dataset of Labor Force Survey, 2010 and 2016

In the apparel sector in Vietnam, the share of workers with upper secondary schooling or higher was estimated to be 40 percent in 2016 -- well below the 67.6 percent in the electronics sector, and but higher than 37 percent for all manufacturing. This is a considerable improvement from 2010, when only 31.9 percent of workers in the sector had an upper secondary school education or higher. In the period 2012-2016, workers in the apparel sector had lower incomes (both mean and median values) than workers in manufacturing. But the situation has improved in recent years.

In Myanmar, the garment sector currently employs over 380,000 workers, which constitutes 1.5 percent of the country's labor force (Labor Force Survey, 2017). Most of these workers are unskilled youth, predominantly women, migrating from rural locations to Yangon where 95 percent of the garment factories are located. According to the Labor Force Surveys in 2015 and 2017, the overall national average monthly salary increased from MMK 115,400 (USD 97) in 2015 to MMK 170,800 (USD 125.6) in 2017. This pattern was also reflected in the wages in the garment sector. A new minimum wage was set in May 2018

that raised daily wages for an eight-hour work from MMK 3,600 (USD 2.65) to MMK 4,800 (USD 3.54). However, minimum wages in Myanmar are still lower compared to other ASEAN member states.

Although many countries such as Myanmar consider low-cost labor to be a competitive advantage, it also suggests that investments in building the human capital of workers are low, making it hard for countries to take on higher-value add activities. Low wages in Myanmar reflect the shortage of professional skills in the workforce with only 13.4 percent attaining a high school degree or above. This also fuels a lack of qualified managers and innovators (MOLIP, 2016).

5.3. Working Conditions

On average, working hours per week in Vietnam's apparel sector were 51.7 per week, which is slightly higher than the average for the overall manufacturing sector; the median value is 48 hours per week. However, such numbers imply the prevalence of overtime work in the apparel sector. The reason that companies apply overtime is to cut costs compared to recruiting more workers and employers do not always provide

workers with the minimum legal compensation for overtime hours (WRC, 2013)

Early retirement is a common practice in Vietnam's textile industry because of the demanding nature of work. Workers in the textile and garment sector suffer from several ailments such as respiratory diseases caused by inhalation of dust, problems with eyesight, back pain, and varicose veins from standing for long hours.

According to the Better Work Program: 9th Compliance Synthesis Report, among the 257 textile and garment enterprises examined, approximately 60 percent of factories did not comply with laws on paid leave. Firms do not have fire alarms and fire suppression systems. Many enterprises have not fully implemented regulations on the supply and use of personal protection gear such as masks, iron gloves and goggles.^{xxv} These are just a few examples of the violations of regulations in some of Vietnam's apparel and textile factories.

On average, a garment factory worker works 6 days per week with 46 working hours excluding overtime work of 14 hours per week. The finding shows that the actual working hours of 46 exceeds a maximum of 44 hours of regular work time (excluding overtime) per week set by the law. This leads to dissatisfaction with working conditions, leading

to a higher labor turnover rate exacerbated by job opportunities in other factories which, in turn, hinders long-term workplace stability (CESD, 2017).

Despite regular annual inspection of factories by the Department of Labor under the Ministry of Labor, Immigration and Population (MoLIP, 2016) under the 1957 Factory Act, employers still fail to meet the requirements for occupational safety and health standards in factories. The Action Labor Right report (2016) showed that much needs to be done by factories to meet the requirements for workers' basic needs such as sufficient drinking water, good ventilation, sufficient light, adequate clean toilets, emergency exit and their usability as per the law.^{xxvi} Moreover, the provision of sufficient personal protective equipment to workers and proper training to use them, as well as training for handling hazardous machines and chemicals were found to be lacking.

Despite the government's efforts to foster amicable industrial relations in Myanmar, over 40 percent of labor disputes were in the garment sector (MoLIP, 2018). According to the MoLIP^{xxvii}, at present, there are currently 3,019 registered trade unions (2,827 basic organizations, 157 township organizations, 24 state/regional organizations, 10 federations,

Early retirement is a common practice in Vietnam's textile industry because of the demanding nature of work.

xxv Source: Ninth Compliance Report - Better Compliance Report in the Apparel Sector of the Better Work Vietnam Program

xxvi Law Amending the Factories Act, 1951 enacted in January 2016

xxvii <http://www.mol.gov.mm/mm/departments/departments-of-labor/dol-manpower-statistics-division/emp-asso-lists/>

and one Myanmar labor organization).^{xxviii} To ensure that workers' rights are protected, there is a need to establish legitimate trade unions. Lack of skill development opportunities remains a key constraint on worker productivity and the transition to FOB production.^{xxix} The high worker turnover rate, estimated at approximately 7.5 percent per month, remains a serious problem for Myanmar garment industry and one of the main factors that disincentivize employers from investing in building worker capacity.

Female workers constitute a major share (80 percent) of the apparel workforce in Myanmar, making it important to pay attention to the specific concerns of women in the sector. Yet, women workers tend to be relegated to less skilled positions. Myanmar lacks strict regulations to prevent harassment at the workplace. This contributes to a high incidence of sexual harassment at work and during commuting times, especially at night.

xxviii Member federations include the Agriculture and Farmers Federation of Myanmar (AFFM), the Building and Wood Workers Federation of Myanmar (BWFM), the Industrial Workers' Federation of Myanmar (IWF), Mining Workers' Federation of Myanmar (MWFM), Myanmar Transport and Logistics Federation (MTLF) as well as Public Sector and Education Sector Unions. Some of them are affiliated with global unions while not all union federations are the members of Confederation of Trade Union in Myanmar (CTUM).

xxix "CMT" refers to a production modality where firms are provided all input materials from foreign buyers, whereas under the "FOB" production modality they are purchased by home firms. The term "FOB" in this context implies a form of garment production/distribution and has practically no relationship with the one defined under Incoterm.

6. Research Findings: Apparel Sector

6.1 Economic Upgrading in Apparel Sector

In Vietnam, 72 out of 108 firms, or 66.6 percent of the sample, noted having at least one type of economic upgrading in the period between 2013 and 2016 (**Table 9**). Table 9 shows that process upgrading or the incorporation of more sophisticated technologies into production was the most prevalent, deployed by 65.7 percent of surveyed firms in the sector. This, by far exceeds product upgrading – making higher-value products, undertaken by 7.4 percent of firms and functional upgrading, or moving to higher-value functions, undertaken by one firm. This is fairly consistent with what is found in some studies, that is, many domestic enterprises place greater emphasis on process upgrading (Dang Tan Duc et. al. 2016).

In Myanmar, 27 out of 59 firms, or 45.8 percent adopted at least one type of economic

upgrading during the reference period (**Table 9**). Table 9 shows that process upgrading is the most prevalent, undertaken by 45.8 percent of surveyed firms in the sectors, which means all firms who upgraded have at least undertaken process upgrading. This far exceeds product upgrading adopted by 3.4 percent of firms. None of the firms have taken on functional upgrading.

Comparing the apparel sectors in both Vietnam and Myanmar, the research suggests that a larger share of Vietnamese apparel firms undertake economic upgrading than firms in Myanmar. The disaggregated analysis finds that a larger proportion of apparel firms adopt process upgrading compared to the product or functional upgrading in both nations.

Process upgrading - the move towards a more efficient production process

Table 9

Economic Upgrading

	Vietnam		Myanmar	
	Number of Firms	Percentage	Number of Firms	Percentage
No economic upgrading	36	33.3	32	54.2
Economic upgrading	72	66.6	27	45.8
Process upgrading	71	65.7	27	45.8
Product upgrading	8	4.4	2	3.39
Functional upgrading	1	0.9	0	0.0
Total	108		59	

Source: VAF - JVN, 2017 and CESD - JVN, 2018

Table 10

Process Upgrading (Number of Firms)

Process Upgrading	Vietnam	Myanmar
Replaced one or more tasks that were formerly done manually with a machine	38	11
Replaced one or more machines with technically more advanced ones	53	15
Introduced a new and better software to control/run the machines	14	8
Organized the production process differently, e.g. re-arranged available machines and /or workers, in the available production setting	45	8
Any process upgrading	71	27

Source: VAF - JJN, 2017 and CESD - JJN, 2018

Firms applied several methods to upgrade their processes, including adopting different machines, updating software, and rearranging production (Table 10).

Table 9 shows that in Myanmar, less than half 27 of 59 firms,^{xxx} or 47 percent, had engaged in process upgrading in the last 12 months. These were mainly larger fully foreign-owned firms located in Yangon. As shown in Table 10, a higher proportion – 15 out of 27 or 55 percent of firms – replaced one or more machines with technically more advanced ones rather than undertaking other forms of process upgrading. Firms are willing to use technically advanced machines to be able to meet demand targets during the peak production time. However, it must be noted that process upgrading in Myanmar is basic, consisting of minimal sophistication of current machines or changes in production processes (NES, 2018).

Product upgrading - the move towards more advanced product types

In Vietnam, eight apparel firms upgraded their products, moving into the production of higher value products with the use of more sophisticated technology and/or methods of production. In Myanmar, product upgrading was primarily undertaken by foreign-owned firms and implemented with the support of foreign partners.

Functional upgrading - the move towards higher value-added tasks

Apparel firms are considered to have undertaken functional upgrading if those firms have more production tasks in the last three years.^{xxxi} In Vietnam, only one firm undertook functional upgrading in the apparel sector; almost all of the apparel firms surveyed remain in cutting, sewing and finishing of apparel products. This is fairly

xxx One firm declined to respond to the economic upgrading section in the questionnaire

xxxi Whether the firm mainly engaged in cutting, sewing, and finishing of apparel products, and followed buyers' specifications and used materials supplied by the buyer; or it was responsible for inputs, following buyers' specifications on materials and material markets by the buyer; or took on a broader range of manufacturing functions, including the sourcing of inputs and logistics functions; or further carried out parts of the design process, possibly in collaboration with the buyer; or designed, produced and marketed its products under its brand.

consistent with the fact that after several decades of apparel export growth, Vietnam-based firms still struggle to move up the value chain. It is estimated that 85 percent of garment industry

output is still in the form of Cut-Make-Trim (CMT), the lowest value-added contractual arrangement (Dang Tan Duc et. al., 2016).

Box 5

Vietnam: Upgrading and Competitiveness in the Apparel Sector: Key Findings of the Qualitative Research

In the apparel sector, most firms still engage in lower-value add cut-make-trim (CMT) work. Risk is cited by many interviewees as a major factor that prevents many apparel firms from engaging in product and functional upgrading. “The whole order is taken care of by an overseas intermediary because we do not have enough manpower and networks to manage orders from final clients. To stay competitive, we focus on managing our workforce to ensure stable production while cutting down costs. While enterprises are keen to invest in machines, it is very risky. We are not active in the input market either, because if the markets of inputs and outputs fluctuate, the firm will be badly impacted. Even when we manage to move to higher value added production, profits do not rise much. We still work in the outsourcing mode, and cannot make much profit because of wage increases for workers,” said the chief executive of a sample firm.

A manager of another apparel firm that produces for both foreign and domestic markets says that the firm employs a dual strategy: it mostly does CMT for the foreign client while having a domestic distribution network with 14 outlets in big cities in Vietnam. A challenge this firm faces is a high rate of labor turnover, with its workforce frequently fluctuating between 300-380 workers. Recruitment of new workers is becoming more difficult.^{xxxii} The firm, therefore, increased the number of automated machines - 85 percent of thread cutters were automated, and the number of sewing machines with automatic programming also rose substantially. Such a substitution of labor by machine results in economic upgrading, but not necessarily social upgrading, particularly as it concerns low skilled workers.

To improve management efficiency, the firm recently started to employ SAP^{xxxiii}, but the results are yet to be seen. In particular, there is a data analysis section in the firm, which collects customers’

xxxii Many firms experience a labor shortage as a result of an ageing population. GSO's data show that the number of net entrants into the labor market declined substantially in recent years, from the peak of 1.9 million in 2005 to only 0.38 million in 2017 (the latest year when data is available) or on average 0.5 million per annum for the four years 2013-2017. This is coupled with rising demand for labor in the context of rising FDI inflows and increasing labor outflows in the form of labor export in recent years, resulting in difficulties in firms' recruitment.

xxxiii SAP is a European multinational software corporation that makes enterprise software to manage business operations and customer relations.

opinions through customer survey cards, and the firm has its own sales software. Instead of labor substitution, improvement in management efficiency can benefit social upgrading.

This firm in general is upbeat about the prospects of the apparel sector in the short to medium term, largely because many factories have been moving out of China to neighboring countries in order to reduce their labor costs. But its representatives also caution against increasing pressures to make products cheaper because of fierce competition from lower cost producers in Cambodia and Bangladesh.

Our interviews with representatives of the state textile and apparel corporations (VINATEX) reveals several concerns related to the future development of Vietnam's apparel sector. First and foremost, what they see is that technology changes very fast. What was just pure speculation a month or two ago becomes reality quickly, with the technology being already applied in some other countries. This is a real challenge for Vietnam's apparel firms that need to constantly play catch up with the pace of technological progress. Furthermore, as a state-owned enterprise, VINATEX's investment proposals have to go through many steps to get approved, thus deterring the corporation to quickly respond to newly arising opportunities.

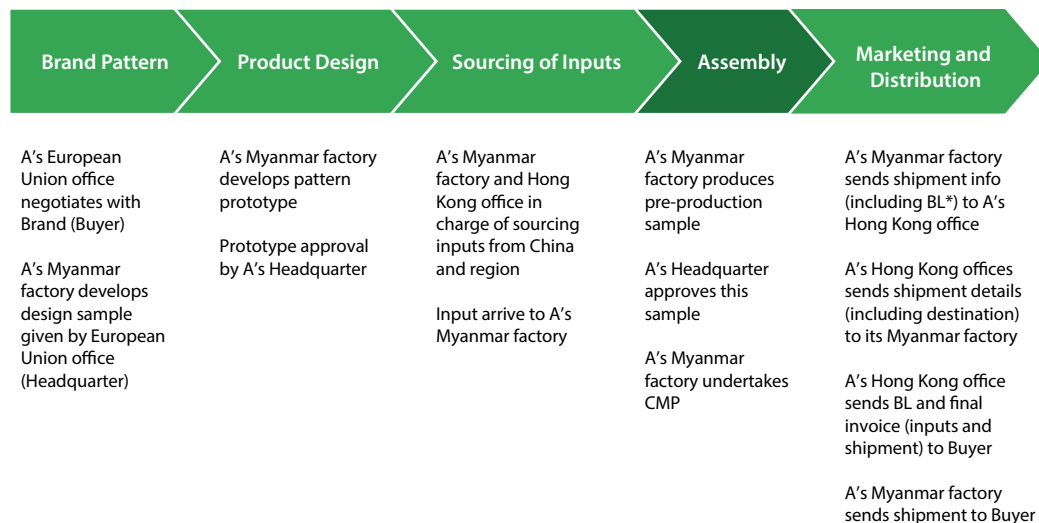
Second, the China factor which has generally worked in Vietnam's favor may change. This could happen because of technological acceleration, notably automation, in China-based apparel firms. This is augmented by the vibrant supporting industries and large cotton production in China, and aggressive policies of the Chinese government to develop integrated textile-garment production in less developed western regions.

In Myanmar, none of the surveyed firms reported engaging with, or even an intent to engage with, higher stages of their export product's value chain in the last 12 months. These findings are consistent with the CMP focus of garment factories in Myanmar. However, in the case of wholly foreign-owned garment factories located in Myanmar, many have their mother company outside Myanmar. These firms import textile and other materials to their sister companies and then exported the finished apparels back

to their mother units. In this sense, most of 100 percent foreign-owned garment companies located in Myanmar are said to be CMP-based in their operations. The survey found that a firm's decision to upgrade was also determined by ownership of the garment factory. As illustrated by a firm representative from Bago: *"The mother company of this firm is in Hong Kong, they design the clothes and provide the raw materials, we were set up in Myanmar only to focus on CMP."*

Figure 8

Fully Foreign-owned Firm Manufacturing Process in Myanmar



Note: BL* refers to Bill of Lading, ownership certification of shipment

Source: Authors' own elaboration

6.2. Social Upgrading in Apparel Sector

This report looks at a number of dimensions to determine the social upgrading of workers. These include training, promotion, and wage growth. In addition, improvements in working conditions for workers in production lines are also considered.

6.2.1. Training and Promotion

Workers are provided with on-the-job training, as well as training courses. In Vietnam, 96.2 percent or 25 out of 26 surveyed workers who received special training reported their training courses were organized by firms, and more than half of them participated in training courses on a wide range of topics (**Table 11**). In relative terms, technicians have the highest percentage of being

trained, at 17.6 percent, exceeding workers (9.1 percent) and managers (2.7 percent).

In contrast to Vietnam, fewer Burmese workers in the apparel sector receive training. Seventy-six workers, or 36.8 percent of those surveyed reported their training courses were organized by firms in-house or outside in the last 12 months. Thirty-six workers (17.9 percent) participated in training courses on a wide range of topics as shown in Table 11. Production workers in higher positions, such as supervisors and quality controllers, are more likely to get training than operators, which represent 79.6 percent. Most workers do not receive specific training for a new role if they change positions. Apart from the on-

Table 11

Training Participation and Promotion (Number of Workers)

		Survey Sample	Training Participation						Promotion
			Management Skills	Relevant Technical Knowledge	Technical Foreign Language	Computer, Electronics Control Device	Soft Skills	Others	
Vietnam	Worker	121	4	11	0	0	5	0	13
	Technicians	74	5	12	1	1	4	0	15
	Manager	73	2	1	0	0	1	0	7
	Total	268	11	24	1	1	10	0	35
Myanmar	Workers	202	2	17	1	1	3	22	41

Source: VAF - JJN, 2017 and CESD - JJN, 2018

the-job training, most firms are not concentrating on providing technical skills training. Training attendance is low, possibly because workers are required to work six days a week and they need the wages.

In Vietnam, 35 out of 268 workers (13.1 percent) reported that they had a change in position over the last three years. They moved to a higher position that brought greater responsibilities and a higher salary. Three cases report the change in position due to an upgrade in manufacturing technology, and another three cases reported a change in position owing to the rearrangement of manufacturing processes.

In Myanmar, 41 out of 201 workers (20.4 percent) reported that they had a change in position over the last 12 months. Twelve cases reported they moved from a lower to a higher position

that brought greater responsibilities and a higher salary. Twenty-five cases reported being promoted to a new position which comes with greater responsibilities; one case reported a change in position due to an upgrade in manufacturing technology; two cases due to a rearrangement of the manufacturing process and one case did not reported any reason. When workers get promoted or changed tasks, they do not receive training for their new position. The survey's findings suggest that only two of the 41 workers that saw a position change received specialized training for their new position.

The garment sector in Myanmar is marked by a low-skilled workforce with low productivity levels. To address this, government, private sector actors, and International Non-Governmental Organization (INGOs) have cooperated to provide

Box 6

Myanmar: The National Skills Standard Authority

Myanmar's establishment of a skills standard started in 2004 as part of the Skill Recognition System in ASEAN to promote the free flow of labor between nations. The National Skills Standard Authority (NSSA) was established in 2013 along with the enactment of the Employment and Skill Development Law (2013) with the objective to define skill standards for different occupations within the country. Its activities include a selection of prioritized occupations for defining skill standards, setting curricula in line with skill standards, and providing skills accreditation certificates. Under NSSA, there are 14 sectoral occupational competency standard committees. Textile and garments is a sub-committee under the manufacturing industry occupational competency standard committee. Training ranging from basic sewing to quality control is provided to garment workers in collaboration with development partners, Myanmar Garment Manufacturer's Association (MGMA) and training centers. To date, the NSSA has issued skill certificates for 10,680 semi-skilled operators and 791 skilled operators.

training to workers^{xxxiv} based on the National Skills Standard Authority (NSSA) curriculum. The scalability and reach of these initiatives remain limited.

6.2.2. Wage Improvement

In Vietnam, the average monthly wages of apparel workers in the dataset in 2016 was VND 9,305 thousand per month (USD 424) in nominal terms, and VND 8,583 thousand per month in real terms (USD 391). In real terms, the average incomes of workers in the apparel sector grew by 27 percent.^{xxxv} The survey points

to only small differences in the average income of male and female workers. This contrasts with labor force survey results that point to a significant gender wage gap in the sector.^{xxxvi}

As one would expect, a high positive correlation is found between income and education level, that is, a higher income associated with higher education.

The average monthly salary of all Burman workers in the survey in 2018 was MMR 211,583 per month (USD 159) in nominal terms, and MMR

^{xxxiv} LIFT and MoLIP's Aung Pyin Hmu training center for new garment sector workers and Training-of-Trainers (ToT) programs (LIFT 2017), SMART Myanmar training for HR staff on sustainability and ethics (SMART 2016), and skilled workers MGMA's 10-day ToT program (MGMA n.d.)

^{xxxv} As our sample is not nationally representative, figures are different from those derived from the dataset of the labor force survey (LFS). Calculations based on LFS came up with lower incomes of workers, estimated in nominal terms at VND 3.68 million and 4.28 million (or 3.95 million in real terms) in 2013 and 2016 respectively for workers in the apparel sector. The rates of growth of real incomes in the apparel sectors respectively were 7.3 percent during the 3-year period 2013–2016, or 2.4 percent per annum.

^{xxxvi} According to LFS data, in 2013, incomes of female workers relative to those of male workers in the apparel sectors were 83.4 percent. These figures in 2016 were 67.1 percent, i.e. the gap decreased in the apparel sector. It should be noted that by design, technicians and managers are heavily over-sampled in this survey. Fifty-seven percent of female workers are working as technicians and manager's as compared to 51 percent male workers which is not the case at the national level and technicians and manager's monthly salaries are higher than the production line workers which is driving the average income of female workers closer to male counterparts. Therefore, there is a small difference between the average income of the female and male workers. These results are only valid for this sample while not representative for the workforce in the two sectors.

139,947 per month (USD 105) in real terms. As expected, positions such as quality controllers, line supervisors, and supervisors have higher total monthly wages compared to operators. The wage gap can be attributed to the difference in skills (using educational attainment as a proxy) and experience in the garment sector, or years of service with a particular garment firm. Of all the workers in the survey 6.5 percent have a university degree and are mostly employed as line supervisors, supervisors, and quality controllers in both the Yangon and Bago regions. For each job role, their wage exceeds the minimum daily wage of MMR 3,600 (USD 2.7) required by law at the time of the survey.^{xxxvii}

6.2.3. Improvement in Working Conditions

In this report, social upgrading in terms of working conditions is considered to take place if there is an improvement in working hours; that is, a decrease in the number of working hours together without a decrease in income, and/or an improvement in working conditions such as greater compliance with certain regulations pertaining to leave for instance; an improvement in benefits; more gender sensitive policies; or better measures toward occupational safety and health.

a. Working Hours

In Vietnam, the average number of working hours for all surveyed workers is 9.1 hours per day. The minimum time a worker has to work in a day is

three hours while the maximum time workers report is 12 hours a day. Most workers have to work for nine hours a day. The average working day of all apparel sector workers is 25.6 days a month and the minimum is three days. The maximum number of working days allowed in a month is 28 days.^{xxxviii} Eighty-one percent of workers responded that there have been no changes in average working hours, 10.7 percent of workers said the average working hours decreased and 8.3 percent noted that there was an increase in average working hours.

In Myanmar, the surveyed workers work on average ten hours a day including overtime, and there are, on average, 27 working days per month.^{xxxix}

When asked about changes to their daily working hours as compared to the previous year, 72.3 percent of the workers stated they remained unchanged, while 15.8 percent stated that their working hours decreased. Only 11.8 percent stated their daily working hours had increased. Nonetheless, overtime work is dependent on having met the daily production target, so production workers are, on average, working many extra hours than their administrative and managerial staff counterparts.

b. Social Benefits

The survey noted that social benefits for workers in apparel firms include a leave policy (sick leave, personal leave, and annual leave), social security,

xxxvii The minimum wage was revised in May 2018 rising to MMR 4,800 (USD 3.6), a month after the survey was conducted.

xxxviii Analysis of data of labor force surveys finds that the average number of working hours per week for formal workers in the apparel sector in 2013 and 2016 were 52.1 and 51.7 respectively.

xxxix The following figures are the mean of the daily working hour and the monthly working days.

health insurance, and preventative health check-ups.

In Vietnam, 51 workers of the 120 that responded to the question, or 42.5 percent, said that they saw an improvement in at least one social benefit policy. A majority of workers said they saw an improvement in work-related safety training followed by regular fire training, family support, regular health check-ups, leave policy, and health insurance (**Table A 12**).

In Myanmar, it appears that 86 percent of surveyed workers receive the benefits of the firm's leave policy, but only 19.3 percent said they saw improvement in the leave policy. Despite knowing that sick leave, and maternity leave were compensated, one worker noted, “*she did not take it because she wanted to earn the attendance bonus and other additional bonuses.*” This demonstrates that despite the existence of such policies, employers create alternative incentives so workers do not avail these benefits.

Merely 5 percent of workers knew about the family support policy, of those that knew about these measures, none saw an improvement. Even though 70 percent of surveyed workers knew about the availability of regular fire training policy provided by their firm, only 15.8 percent of workers saw any improvement in the actual provision of fire safety training.

In Myanmar, firm representatives reported more improvements in working conditions than workers did. This could be because they wanted to portray a better image of the firm or the fact that they were not exposed to the everyday conditions of the factory floor. The fact that 86 percent of workers knew about the leave policy and nearly one in five noted improvements suggests that the law is being enforced now.

c. Women-related Policies

According to the law in Myanmar, female workers are entitled to 14 weeks of maternity leave, during which they must receive a minimum wage.

In Vietnam, 70 out of 72 female production line workers in the apparel sector responded to questions trying to ascertain improvements in policies pertaining to women. Thirty-five of the 70 noted an improvement in the

company policy for pregnant women. Thirty out of 64, or 46.9 percent of female workers, noted an improvement in the maternity leave policy, and 20 out of 25, or 80 percent of female workers, responded that there was an improvement in other women-related policies.

According to the law in Myanmar, female workers are entitled to 14 weeks of maternity leave,^{xl} during which they must receive a minimum wage. Additionally, the national social security scheme provides a maternal benefit of 70 percent of the regular wage during the leave as well as additional maternity expense benefits. Ninety-five percent of surveyed female workers were aware of these

^{xl} It includes six weeks of prenatal and eight weeks of post-natal leave and an additional seven days of paid leave for medical check-ups.

benefits. About 70 percent reported that their firm had specific policies for pregnant female workers such as longer lunch breaks (40 percent), additional allowance for basic medical check-ups (20 percent), as well as reduced working hours, and easier access to sick leave (10 percent).

When a firm representative was asked about maternity leave in his factory, he stated that a worrisome trend in his factory was that workers would not come back after their maternity leave. When a worker was asked about such a pattern among new mothers, she revealed, “[T]he main reason why women did not return was that the majority did not have anyone to take care of the

child at home. The percentage of working mothers will increase if the firm provided a childcare facility. However, firms prefer to hire single females.”

This was also confirmed by a firm representative who stated, “[H]iring single females increases the chances of meeting the production targets”. Such firm behavior goes against the 1949 Factory Law, which stipulates that in-factory childcare must be provided.

d. Occupational Health and Safety Policies

Occupational health and safety are divided into two main categories - the first is facilities wise access to drinking water, toilets, and first-aid. The

Box 7

Vietnam: Labor Safety at Work

Managers report that they paid attention to labor safety in their production lines including monitoring electrical, chemical and fire safety. Firms take numerous actions: frequent training for workers to raise awareness about safety at work, provision of suitable work safety equipment, workers are not allowed to operate equipment unless adequately trained in the operation method, periodic inspection and maintenance of machinery and equipment, inspection of joints, electric wires in case of electric accidents, usage of lifting machine, signboards, signs in electrical cabinets, electrical boards, and warning signs.

However, some firms still have harmful working environments with dust, garbage, noise, lack of light, that make accidents and occupational diseases common. The rate of garment workers suffering from occupational diseases is very high. Fatigue, headaches, muscle pain, osteoarthritis, lung disease, sinusitis, allergic rhinitis, and asthma are among some of the ailments resulting from these toxic environments. The heat from machinery and the human bodies in the workshop raises temperatures in the work area. In the summer season, outside temperatures exacerbate the situation making it uncomfortable for workers but also raising the risk of fire and explosions. Not many firms can afford to install factory cooling systems to reduce the temperature and humidity inside.

second is compliance with safety regulations, that is maintaining comfortable temperature control, air quality, and lighting, eliminating fire hazards, preventing noise, and providing appropriate protective, and safety gear to workers.

In Vietnam, 67 out of 121 workers (55.4 percent) pointed out that drinking water facilities had improved. Sixty-eight workers (56 percent) pointed out that there was an improvement in toilet systems. All firms now have separate toilets for men and women workers. Forty-four workers, (36.4 percent) noted that firms have provisions to provide first-aid, and 74 workers (61.2 percent) said the firm has good lighting. Sixty workers (49.6 percent) noted that their firms provide protective gear, while 75 (62 percent) said that their firm has protection against fire hazards. There is, nonetheless, a need for better noise prevention

facilities. Only 36 workers, or 29.7 percent, said they work in a firm that has adequate noise prevention.

In Myanmar, 200 out of 201 workers, or 99.5 percent, said that firms have proper drinking water and all firms have toilet facilities, but five workers (2.5 percent) work in a firm that does not have separate toilets for men and women workers. As many as 173 workers, or 86 percent, noted that firms have provisions to provide first-aid, and 189 workers (89 percent) said the firm has good lighting. Ninety-eight workers, or 48.8 percent, noted that their firms provide protective gear, and 177 workers (88.1 percent) responded that their firm has protection against fire hazards. There is, however, a lack of noise prevention facilities. Only 21 workers (10.5 percent) said their firm has adequate arrangements for this.

7. Feedback Loops from Workers to Firms

Vietnam

Workers reported two main channels for offering feedback to firms – professional associations and the trade union system. Associations have made many recommendations to the government on the amendment of regulations related to the protection of labor rights. Professional associations advocate for sustainable development policies and the rights of workers in the sector. The association provides recommendations to ensure that both firms and workers benefit. They work on issues such as the revision of minimum wages, revision of the compulsory insurance policy, and the minimum level of health care required for employees.

For example, the Vietnam Textile and Apparel Association signed a legal document for grassroots trade unions to serve as the advocate to protect legitimate interests, to take care of the material and spiritual life of workers, including female workers. It also instructs firms to take practical measures such as coordinating with local authorities to assist workers with legal matters and to ensure their security. Grassroots trade unions are also encouraged to conduct inspections and supervise the implementation of wage policies, social insurance, health insurance, labor safety and hygiene policies, child allowance, allowance for female workers in childbirth, organizing meals free from food contamination,

and building culture units in kindergartens, clubs, and shelters for workers.

The trade union in industrial zones directly coordinates with grassroots trade unions. It plays an important role in facilitating the interaction between local officials and firms in providing health care for workers. In addition to the medical examination, trade unions are said to help develop the labor protection plan at work, including the monitoring of lunch policies. In prolonged hot weather conditions, trade unions at all

levels are actively involved in advising and coordinating with firms' managers to implement various measures to manage temperatures such as appropriate ventilation systems, cooling equipment, personal protective gear, and adequate hydration and nutrition for workers.

Professional associations advocate for sustainable development policies and the rights of workers in the sector. The association provides recommendation to ensure that both firms and workers benefit.

The Provincial Trade Union Executive Committee usually receives written complaints about non-performing insurance and maternity schemes and directly contacts the management board to deal with the interests of workers. In the presence of the provincial trade union, the firm leaders set clear schedules to deal with worker grievances. However, some workers reported that the grassroots trade unions are not properly informed about regulations and do not sufficiently monitor

lunch at work, fire prevention and firefighting activities, lighting quality, noise reduction, and other conditions.

Thailand

There are three levels of bargaining power and collective action in the electronics sector—factory level, provincial level, and national level. At the national level, the electronics sector has the Federation of Workers in the Electronics Sector.

There are two main channels for workers to provide feedback to firms -- the company channel, (the human resources department) and the trade union system. The study found that the trade union system has made many recommendations to companies and to the government toward improving the working and living conditions for workers in the electronics sector. The main recommendations from the trade unions include a revision of the minimum wage and minimum health benefits for employees.

However, according to the survey, most workers in the electronics sector face challenges in exercising their rights and receiving legal protection. It was found that many electronics firms do not allow their workers to establish or join trade unions. Trade union representatives, during the in-depth interviews, mentioned that if employers learn of an attempt to unionize, managers make their displeasure clear to workers. At times, workers are forced to relocate to other branches to immobilize union activity. If the employee continues to resist, this can lead to suspension or even dismissal. This

is meant to serve as a deterrent for other workers to stay out of such activities.

Surprisingly, many government officers – whether from the Labor Protection and Welfare Department, the Ministry of Labor, or the police – attempt to dissuade workers from organizing, sometimes issuing similar threats as the employers. This goes against the rules set out in the Thai Labor Relations Act, and against conventions laid out by the International Labour Organization (ILO).

The study also found that there is a fear of dismissal, harassment, and frivolous lawsuits. Many workers feel anxious about unionizing and the effect this may have on their employment prospects. The deeply ingrained impression is

Most workers in the electronics sector face challenges in exercising their rights and receiving legal protection.

that organizing could create upheaval in the workplace. Since workers depend on their jobs and overtime pay to make ends meet, they are vulnerable to pressure from employers which includes reducing opportunities to work overtime shifts as a punishment.

The survey also revealed a general lack of awareness on part of workers about their rights and the important role that organizing and collective bargaining plays in improving working conditions. Yet, most unions lack the resources to effectively mobilize and educate workers. Employers don't educate workers about their rights; on the contrary, they discourage and/or threaten repercussions against collectivization.

Myanmar

The government of Myanmar, in recent years, has undertaken an effort to update several labor laws to better reflect the current industrial landscape of the nation rather than that of the time when they were crafted - primarily under British rule in the mid-1900s. Notably, the Minimum Wage Law (2013), Labor Organization Law (2011), the Settlement of Labor Disputes Law (2012), and Social Security Law (2012) were enacted to improve the work environment, to protect workers' rights, and to foster better industrial relations in the country.

When asked about the process for reporting violations internally within a firm, most workers stated they would first report the violation to a supervisor. If that failed to prompt action, then the complaint would be sent to the management office. Approaching trade unions or the Workplace Coordination Committee (WCC) – a body of two workers and two employer representatives elected to resolve disputes – were seen as a last resort. Doing this meant that the complaint was formalized as a labor dispute. As one worker explained, “[I]f an argument occurred between operators it would be reported to the supervisor or line leader first. Greater matters went to the human resources department. If the matters were not solved, they were taken on by the Workplace

Coordination Committee to be resolved through the labor dispute mechanism (Box 8).

Labor unions in Myanmar are a relatively new phenomenon only having been legally established after the 2011 Labor Organization Law. According to this law, labor unions should be notified of issues that are not resolved by management. According to the MoLIP, in Yangon, 53 percent of registered disputes relate to job termination, 21 percent are wage-related disputes, 4 percent are compensation related and 4 percent are related to complaints about working conditions (MoLIP, 2017). The primary research also found that disputes related to job termination, wages and working conditions were the main grievances expressed by the workers that were interviewed for this study.

This study found evidence of the mediating role that trade unions play. Among other benefits, the presence of trade unions was found to be positively related to the higher provision of training in firms. Some firms believe that unions are effective mediators. In one case when around a hundred workers protested against the dismissal of seven of their union leaders (Myanmar Times, 2019), the matter was resolved by the labor union before it escalated into a strike.

The research found that disputes related to job termination, wages and working conditions, were the main grievances expressed by the workers.

Box 8

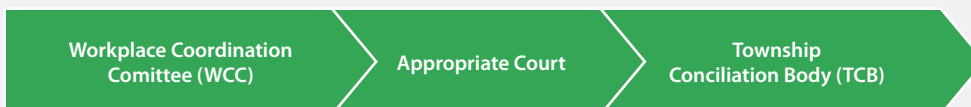
Labor Disputes Mechanisms in Myanmar

In accordance with the Labor Dispute Law 2012, a factory must have a Workplace Coordinating Committee (WCC) for factory level negotiation. The WCC consists of two firm representatives and two factory worker representatives, workers have the right to elect the latter. WCC is not able to successfully resolve the dispute, it goes to a Township Conciliation Body (TCB), which is made up of three worker representatives, three employer representatives, and three government representatives. Each member serves a one-year term. If there is no agreement at this level, the disputes can be referred to the state/region level arbitrary body (AB). There are a total of 15 state/region arbitrary bodies in Myanmar. In the last stage, there is a union-level arbitrary body made up of five worker representatives, five employer representatives, and five government representatives.

There are two types of disputes that the Labor Dispute Law 2012 tries to address: individual disputes and collective disputes. The Law defines individual disputes as a those between the employer and one or more workers relating to existing laws, rules, regulations and by-laws, and perceived violations of collective or employment agreements. Collective disputes are disputes between one or more employer or employers' organizations and one or more labor organizations.

These disputes are resolved following the process illustrated below. At the TCB and AB level, the decisions are made through a tripartite system where the employer, workers, and government representatives vote to come to a final decision.

Individual Dispute Process



Collective Dispute Process



8. Linkages between Economic and Social Upgrading

For many emerging economies, participating in GVCs was a way to deploy surplus labor in specialized tasks to take advantage of global demand. This was intended to improve opportunities for firms and living standards for workers. But in order for this to happen, improvements in firms must translate into improvements for workers; that is, economic upgrading should lead to social upgrading. This section analyzes whether economic upgrading in the firms investigated as part of this research led to social upgrading for workers.

Table 12 shows the shares of surveyed workers with any social upgrading by the type of economic upgrading. The results suggest that 301 out of 400 workers, or 75 percent, experienced at least one type of social upgrading. Of those with social upgrading, 70.8 percent work in firms that had economic upgrading. Out of 276 workers who work in firms with economic upgrading, 63

or 22.8 percent did not benefit from any social upgrading.

These figures indicate that working in firms with economic upgrading appears to increase the chances of workers benefitting from at least one type of social upgrading, but it certainly does not guarantee it. The association between economic and social upgrading is far from perfect. Almost 30 percent of workers in firms with no economic upgrading saw some form of social upgrading, pointing to the fact that there are other factors beyond economic upgrading that influence whether workers see their conditions improve. Vietnam's accelerated global integration, coupled with domestic reforms and labor market regulations, are among the factors that may have worked in favor of workers and enabled them to benefit from social upgrading in the absence of the firm's economic upgrading (CAF, 2018).

Table 12

Economic and Social Upgrading

	Absolute Number			In Percentage		
	Economic Upgrading	No Economic Upgrading	All	Economic Upgrading	No Economic Upgrading	All
Social upgrading	213	88	301	53.2	22.0	75.2
No social upgrading	63	36	99	15.8	9.0	24.8
Total	276	124	400	69.0	31.0	100

Source: VAF - JJN, 2017

Table 13

Economic Upgrading and Different Types of Social Upgrading^{xli}

	Absolute Number					Percentage	
	Yes + Economic Upgrading	No + Economic Upgrading	Yes + No Economic Upgrading	No + No Economic Upgrading	Total Workers		
	(1)	(2)	(3)	(4)	(5)	(6)=(2)/(5) ^{xliii}	(7)=((2)+(4))/(5) ^{xliii}
All							
Social upgrading	213	63	88	36	400	15.8	24.8
Promotion	56	220	15	109	400	55	82.3
Income improvements	138	138	66	58	400	34.5	49
Working conditions improvements	102	9	35	13	159	5.7	13.8

Source: VAF - JJN, 2017

Note: The question on working conditions was applied only to 159 workers in production lines

Table 13 provides a cross-tabulation of different types of social upgrading against different types of economic upgrading. Just under 14 percent of workers in production lines experienced no improvement in their working conditions. Overall, a large percentage of all types of workers did not receive the promotion (82.3 percent) followed by employees whose wages did not increase (49 percent). It is easier for firms to undertake improvement of working conditions as a one-time capital investment, while promotions and wage increases are harder to undertake and are limited only to a few cases. The cross-tabulation

also reveals the majority of workers who were upgraded socially work in firms with process upgrading. This is to be expected, given that process upgrading is the most prevalent.

Comparing across types of employees, Figure 9 shows that technicians benefit the most, with 56 percent (out of 125) seeing their income increase and 26 percent getting a promot. Managers follow, with these percentages at 52 percent and 16 percent (out of 116) respectively. For workers, these percentages were 47 percent and 13 percent (out of 159) respectively.

xli 'Yes' means workers have experienced social upgrading and 'No' means workers have not experienced social upgrading

xlii Workers working in economic upgraded firms without experiencing social upgrading

xliii No social upgrading experienced by workers irrespective of working in economic upgraded firms or not

Box 9

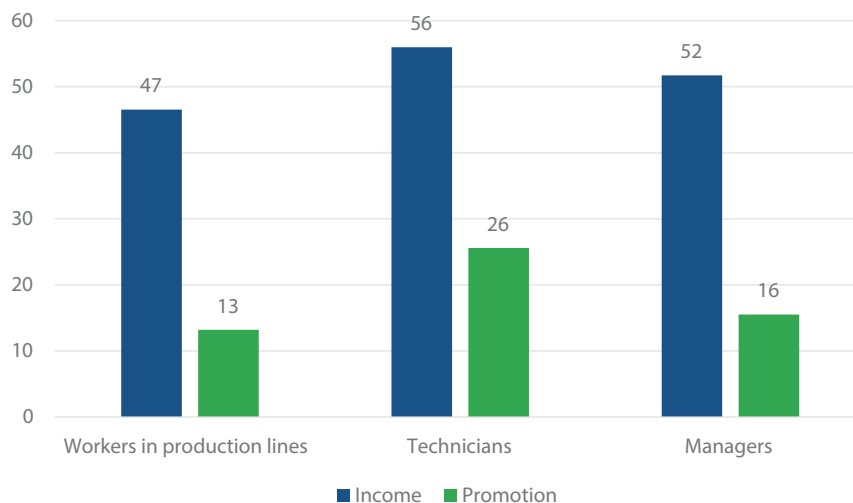
Vietnam: Vietnamese Firms that Supply Electronic Components to Large Global Corporations

According to Global Group S., less than 10 percent of satellite firms supplying electronic components and accessories are owned by the Vietnamese. Vietnamese firms engage mostly in packaging and printing for the lead firm. Among them, one manager of a first-tier supplier said that his biggest success in developing his firm was thanks to his past experience where he gained knowledge of product requirements, client demand, and networking in electronics production. This manager developed his own firm over 15 years. The firm invested in the most modern, fully automated, and semi-automated production that meets international standards. Thanks to these management systems, the firm can effectively control the quality at all stages of business, from the procurement of raw material all the way to the delivery of final products.

Owing to product quality coupled with stable production capacity, the firm receives good prices for its products. The firm strengthens human resources by adopting a training policy with 20 percent of workers trained abroad. A research and development department has been established in the factory. The production standards are set up in order to meet the requirements of clients, thereby enhancing the firm's competitiveness. The work environment is evaluated by workers as "clean and comfortable, with the respectable treatment of workers, good lunches, due attention to welfare activities like sports, support for children's education, and good wage".

Figure 9

Improvements by Types of Employees (%)



Source: VAF - JJN, 2017

Box 10

Vietnam: Business Growth Went Hand-in-hand with Skill Improvement of the Management Team

A domestic apparel firm with 900 workers produced high-quality shirts for export to the Japanese market. The firm focused on building management skills in order to increase production efficiency, having already made large investments in machinery and having abundant supply of labor. Business leaders were determined to learn Japanese leadership skills. The firm adopted a training strategy for top level management down to the head of production lines, including online evaluations of individual performance. Improvements in the production management process increased capacity by 70 percent and helped reduce the average cost of the business by 20 percent.

One manager noted, “I learned a lot about how the Japanese set up their production. With the same workforce, but the different deployment of resources and processes, productivity increases. My management skills also improved. I am confident that I can get a better job in another firm, but I’m still here because now my income is approximately 20 percent higher than what it would be in other firms in the same area”.

To understand in greater detail the interlinkage between economic and social upgrading in the garment industry in Myanmar, this report used the firm and worker datasets and matched the interviewed workers to their firm representatives’ responses, resulting in 46 firms with 148 interviewed workers. Among these, 17 were firms that had undertaken economic upgrading,^{xliv} all of them pursued process upgrading and the remaining 29 firms did not undertake any form of upgrading.

In Myanmar, there appears to be little evidence of social upgrading in most firms that undertook economic upgrading. Only a few workers in firms that undertook non-process upgrading express greater wage satisfaction than workers in firms that undertook other forms of economic upgrading. Workers in higher positions were reported to be less satisfied with their salary. Similarly, in terms of education levels, university graduates reported similar levels of job satisfaction as their less educated peers but they were less satisfied with their wages.^{xlv} Firms that undertook process upgrading appeared to

^{xliv} As discussed in Section 6, 27 out of 59 firms, or 45.8 percent, adopted at least one type of economic upgrading, and the remaining 32 firms did not undertake any form of upgrading.

^{xlv} High school and below groups reporting 0.69

employ more university graduates in proportion to lower educated workers, which could mean that university graduates at higher positions in process upgrading firms are dissatisfied with their wages compared to their lower educated peers.

The study found that firms that undertake product upgrading, on average, pay less, (MMR 188,410 (USD 142) per month) than firms that undertake process upgrading (MMK 225,550 per worker (USD 169) per month). When analyzing monthly labor turnover rates, this study found that firms that undertook process upgrading had

relatively lower turnover than their counterparts - 2.7 percent versus 3.6 percent. One reason could be that the wages in the former are higher.

Workers in process upgrading firms preferred to communicate their concerns to managers and supervisors more than workers in non-process upgrading firms. These findings suggest that even though workers in process upgrading firms are dissatisfied with their wages, they tend to get paid more and the staff in these firms are more approachable than these in non-process upgrading firms.

9. Conclusion

ASEAN countries are benefiting from integration into GVCs in terms of the rise in the number of new enterprises, job creation, and export volume. But foreign firms appear to be more receptive to the opportunities of GVC integration than their local counterparts.

Most economic upgrading in firms takes the form of process upgrading. The number of firms with product or function upgrading is still very small. Therefore, all three countries in the survey have lots of scope to, and at the same time need to make considerable effort in these areas to move up the value chains. This, in turn, requires that firms be able to access a pool of skilled workers and train them adequately, among other things.

Firm size matters for economic upgrading, bigger firms in terms of the number of workers are more likely to be upgraded. Across the two sectors, apparel firms have a lower chance of having the economic upgrading than electronics firms in this survey. This might be explained by the fact that the electronics firms are more closely vertically linked to the lead firm in producer-led GVCs in the electronics sector, while the apparel firms have looser links with brand names in buyer-led GVCs in the apparel sector. Other firm characteristics that can affect the economic upgrading include ownership, growth

performance of firms and market linkages. Similarly, the unavailability of a skilled workforce who can perform sophisticated tasks can also hold back the firms from moving up the value chain.

In terms of social upgrading, the study found that the opportunity to get a promotion and receive skill development is limited for production line workers. Across types of employees, there is evidence that technicians and managers are

The association between economic and social upgrading is far from perfect. Almost 30 percent of the workers in firms with no economic upgrading saw some form of social upgrading

more likely to have their incomes increased and to get promoted than workers in production lines. This is true regardless of whether the firm is economically upgraded or not. Due to the high turnover rate in the sectors, most of the firms have to improve social benefits and working

conditions in order to retain their workers. Many workers in small and medium firms have reported the risky working conditions and some even face serious health conditions.

Complaint mechanisms were available in many factories; most workers preferred to express their concerns through complaint/suggestion boxes or prefer to report directly to their supervisors. Workers still face some challenges in addressing or voicing their needs to employers by themselves or through trade unions.

The results of this study are mixed with regard to the relationship between economic upgrading and social upgrading. The association between economic upgrading and social upgrading is far from perfect. There is some evidence that workers in production lines in firms with economic upgrading are more likely to have their working

conditions improved than their counterparts in firms without economic upgrading. All employees in firms with economic upgrading are more likely to get promoted than those firms without economic upgrading. The average worker's wage allocated by firms in process upgrading firms are higher than that of their counterparts.

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Appendix

Research Methodology

To understand the status of economic and social upgrading in the export-oriented firms, the research project analyzed two sectors in three ASEAN countries - the apparel and electronics sector in Vietnam, the apparel sector in Myanmar, and the electronics sector in Thailand.

The research uses a combination of qualitative and quantitative methods to gain diverse insights. The research approach relied on two structured questionnaires with close-ended and multiple-choice questions per sector. One questionnaire was administered at the firm level, the other one was used to survey workers. Research teams from partner organizations (Centre of Analysis and Forecasting at the Vietnam Academy of Social Sciences (VASS), Vietnam; Centre of Economic and Social Development (CESD), Myanmar; Kenan Foundation Asia, Thailand) organized and implemented the surveys under the guidance of JustJobs Network. Information from firm-level questionnaires was sought from firm managers or

their representatives. The research teams surveyed workers after work or during weekends, usually at their homes, in their neighborhoods, or in nearby cafés depending on the workers' preferences. The quantitative data were substantiated with in-depth semi-structured interviews with experts, supported by written question guidelines.

Participation in this study was on a voluntary basis. The respondents were informed about the purpose of the survey and were assured of the anonymity of their personal data. Personal information was not shared with anyone outside the research teams. When respondents agreed, researchers could contact them to verify information, and/or to get recommendations for additional respondents. Published findings do not contain any personal information of respondents, and thus, cannot be linked to individual workers, managers, or experts.

Quantitative Survey and Sampling

One questionnaire was drafted for factory floor workers (production workers) and non-

Modules Firm Questionnaire	Modules Worker Questionnaire
<ul style="list-style-type: none">1) Basic information, including main activities of the firm, years of operation, location2) Employment data3) Firm performance4) Economic upgrading in the last three years5) Firm strategy toward social upgrading in the last three years6) Perception of future performance	<ul style="list-style-type: none">1) Basic information, including gender, education, age, ethnicity, migrant status2) Employment, including wages, tasks, working hours, working conditions3) Social upgrading in the last three years, including skill development, training4) Satisfaction and perception of future opportunities or challenges related to the current job, skills and work mobility

production workers while the other one focused on the enterprise perspective. Where possible, the information given by workers was linked to firms in the firm-level survey. In Thailand, this was not possible (see 'Challenges in data collection' below). Both questionnaires were drawn up jointly by JustJobs Network and the partners, i.e. CESD in Myanmar; VASS in Vietnam, and Kenan Foundation Asia in Thailand.

The survey places special focus on collecting information on indicators of economic and social upgrading that are not available from secondary sources. Respondents' impression of variables of economic and social upgrading relates to the last three years at the time of the fieldwork. This reference of the last three years aims to capture the potential translation of economic upgrading into social upgrading. That way, the study aims to identify patterns of economic and social upgrading and their linkages. Due to the high turnover in these two sectors, a longer period, e.g. five years, is not considered.

A purposive sampling of firms and workers is applied due to practical limitations. Response rates among firms and workers tend to be generally low (e.g. Honda & Otsuki 2017). Hence, retrieving a representative sample from scratch was not possible given the moderate envisaged sample sizes of at least 60 firms and 150-200 workers per sector.

The survey is neither representative at the national nor the sector level. However, its strength lies in the information retrieved from both structured questionnaires and narrative interviews. It provides in-depth information about upgrading

patterns, and the linkages between economic and social upgrading. To limit the scope of the research, the analysis did not include domestic suppliers of exporting firms or domestic providers of ancillary services like transportation.

Full-time permanent or long-term workers were selected purposively in the residential places where most of the interviewed firms' workers live so that workers' information could be linked to information provided by firm managers. Snowball sampling was applied to find the workers associated with one of the surveyed firms. The scope of the project did not allow tracing and survey of casual and undocumented workers who work for the firms at short notice, e.g. during peak times.

Qualitative Interviews

Qualitative interviews with key stakeholders in the two sectors were conducted. In-depth interviews aimed to gain an in-depth understanding of the economic, political, and social environments of the two sectors. The qualitative studies in Vietnam and Myanmar also included focus group discussions with workers from each sector. Qualitative interviews were conducted in English when respondents felt comfortable, or in Vietnamese, Burmese or Thai. Interviews were recorded, transcribed, and translated where necessary. Key findings from each conversation or discussion were documented in English in summary sheets. These findings allow nuances in understanding obstacles to and drivers of economic and social upgrading. Findings are contextualized and presented as short case studies in the final synthesis report.

Stakeholders	Vietnam	Myanmar	Thailand
Industry or sector associations	8	2	2
Company representatives	26	12	8
Workers and worker representatives	24	24	6
Experts from international organizations	7	1	1
Experts from academia, national think tanks	5	1	5
Government representatives, state officers	-	5	9

Secondary Quantitative Analysis

Where available, researchers used representative national enterprise census and labor force survey data to analyze the firm's productivity growth and the workers' real wage growth, with consideration of labor categories by skill levels in the two sectors. Evidence from secondary resources is presented in the sectors' background overviews.

Challenges in Data Collection

The survey of firms in Thailand faced various unforeseen challenges. There were restrictions on entry into firm compounds, especially into production buildings. Company managements are scared of industrial espionage and whistleblowing on working conditions. To overcome this issue, the companies were approached and informed in advance about the survey. The questionnaires were sent to the firm managers, owners, or leading administrative staff.

After repeated requests and offered assistance by the research team, many firms did not return questionnaires within the allotted time. To handle these cases, an external coordinator was hired to follow up by calling and providing firms with the most convenient ways to return the forms, such as email, on-site pickup and express mail. However, the data recorded based on this procedure was not complete enough to serve as a basis for the study. Therefore, the World Bank Enterprise Survey data were used to get an overview of the sector as regards firm performance, upgrading strategies, workforce development, and training. The findings from the Thailand World Bank Enterprise Survey data 2016 were not used in this report, but they are part of the sector report "A Case Study of Thailand's Electronics Sector" of the same project.

Firm Survey Sample

Table A 1

Firm Survey Sample

	Myanmar	Thailand	Vietnam
Electronics	-	60	52
Apparel	60	-	108

Source: VAF - JJN, 2017; Kenan Foundation Asia - JJN, 2018; and CESD - JJN, 2018

Worker Survey Sample

Table A 2

Number of Workers in Electronics Sector in Thailand Classified by Gender

Gender	Number of Workers		Total
	Workers in Production Line	Technician	
Male	14	3	17
Female	193	20	213
Total	207	23	230

Source: Kenan Foundation Asia - JJN, 2018

Table A 3

Number of Workers in Apparel Sector in Myanmar Classified by Gender

	Female	Male	Total
Helper	5	0	5
Skilled operator	118	13	131
Semi-skilled operator	22	7	29
Line supervisor	7	1	8
Supervisor	12	0	12
Quality controller	13	0	13
Others	2	2	4
Total	179	23	202

Source: CESD - JJN, 2018

Table A 4

Number of Workers in Electronics Sector in Vietnam Classified by Gender

Gender	Number of Workers			Total
	Workers in Production Line	Technician	Manager	
Male	12	35	11	58
Female	26	16	32	74
Total	38	51	43	132

Source: VAF - JJN, 2017

Table A 5

Number of Workers in Apparel Sector in Vietnam Classified by Gender

Gender	Number of Workers			Total
	Workers in Production Line	Technician	Manager	
Male	49	27	24	100
Female	72	47	49	168
Total	121	74	73	268

Source: VAF - JJN, 2017

Table A 6

Educational Achievement by Labor Category in Electronic Sector in Thailand

Education	Number of Workers		Total
	Workers in Production Line	Technician	
Lower secondary	0	26	26
Higher secondary	4	150	154
Vocational education/high vocational education (specify)	4	12	16
Bachelor's degree	15	17	32
Higher than bachelor's degree	0	2	2
Total	23	207	230

Source: Kenan Foundation Asia - JJN, 2018

Table A 7

Educational Achievement by Labor Category in Apparel Sector in Myanmar (Number of Workers)

	Primary School	Middle School	High School	University Student	Graduate and Above	Total
Helper	1	2	1	1	0	5
Skilled operator	9	56	55	7	4	131
Semi-skilled operator	4	12	10	3	0	29
Line supervisor	0	2	3	3	0	8
Supervisor	0	0	8	1	3	12
Quality controller	0	2	5	0	6	13
Others	0	1	2	0	1	4
Total	14	75	84	15	14	202

Source: CESD - JJN, 2018

Table A 8

Educational Achievement by Labor Category in Electronics Sector in Vietnam

Education	Number of Workers			Total
	Workers in Production Line	Technician	Manager	
Lower secondary	4	0	0	4
Secondary	2	1	2	5
Higher secondary	20	8	5	33
Vocational education/high vocational education (specify)	7	8	16	31
Bachelor's degree	5	34	19	58
Higher than bachelor's degree	0	0	1	1
Total	38	51	43	132

Source: VAF - JJN, 2017

Table A 9

Educational Achievement by Labor Category in Apparel Sector in Vietnam

Education	Number of Workers			Total
	Workers in Production Line	Technician	Manager	
Lower secondary	7	3	0	10
Secondary	31	13	1	45
Senior secondary	55	13	6	74
Vocational education/high vocational education (specify)	21	23	17	61
Bachelor's degree	7	22	47	76
Higher than bachelor's degree	0	0	2	2
Total	121	74	73	268

Source: VAF - JJN, 2017

Table A 10

Workers' Evaluation of Work Regulations, Regular Services and Benefits in Electronics Sector in Thailand

	Workers receiving services and benefits		Improvement in policy implementation over the past year (Yes/No assessment)		Assessment of the current performance
	Number of Workers	Percent of Workers	Number of Workers	Percent of Workers	Average Mark on Scale 1 to 5
Work Regulation					
General regulation	230	100	23	10	3
Safety regulation	230	100	40	17.39	3
Social benefits					
Leave policy	230	100	16	6.95	3
Health insurance	230	100	24	10.43	3
Family support	230	100	0	0	3

	Workers receiving services and benefits		Improvement in policy implementation over the past year (Yes/No assessment)		Assessment of the current performance
	Number of Workers	Percent of Workers	Number of Workers	Percent of Workers	Average Mark on Scale 1 to 5
Regular health check	230	100	0	0	3
Regular personal work-related safety training (e.g. chemical usage)	230	100	11	4.78	3
Regular fire training	230	100	10	4.34	3
Other	230	100	0	0	3
Women-related policy					
Policy for pregnant women	230	100	7	3.04	3
Maternity leave	230	100	11	4.78	3
Other female-focused policy	230	100	0	0	3
Occupational health and safety policy					
Drinking water	230	100	94	40.86	3
Toilet	230	100	24	10.43	3
First aid in case of injury	230	100	10	4.34	3
Air and heat quality control (ventilation, no dust/ particles)	230	100	8	3.47	3
Fire hazards (protective gear, fire alarm)	230	100	8	3.47	3
Sufficient lighting at work	230	100	18	7.82	3
Noise prevention	230	100	10	4.34	3
Protective gear for labor safety	230	100	12	5.22	3

Source: Kenan Foundation Asia - JJN, 2018

Table A 11

Workers' Evaluation of Work Regulations, Regular Services and Benefits in Electronics Sector in Vietnam

	Workers Receiving Services and Benefits		Improvement in Policy Implementation over the Past Year (Yes/No Assessment)		Assessment of the Current Performance
	Number of Workers	Percent of Workers	Number of Workers	Percent of Workers	Average Mark on Scale 1 to 5
Work Regulation					
General regulation	38	100	27	71.0	2.2
Safety regulation	38	100	29	76.3	2.2
Social Benefits					
Leave policy	38	100	18	47.4	2.3
Health insurance	36	94.7	16 ^{xlvi}	44.4	2.3
Family support	22	57.9	10 ^{xlvi}	50	2.2
Regular health check	34	89.5	14 ^{xlviii}	41.2	2.2
Regular personal work-related safety training (e.g. chemical usage)	37	97.4	18	47.4	2.2
Regular fire training	38	100	16	42.1	2.2
Other	1	2.6			
Women-related Policy					
Policy for pregnant women	20	76.9	10	38.5	2.2
Maternity leave	21	80.8	10	38.5	2.2
Other female-focused policy	3	11.5	1	-	2.1
Occupational Health and Safety Policy					
Drinking water	38	100	20	52.6	2.3
Toilet	38	100	21	55.3	2.3

xlvi 36 production line workers answered this question

xlvi 20 production line workers answered this question

xlviii 34 production line workers answered this question

	Workers Receiving Services and Benefits		Improvement in Policy Implementation over the Past Year (Yes/No Assessment)		Assessment of the Current Performance
	Number of Workers	Percent of Workers	Number of Workers	Percent of Workers	Average Mark on Scale 1 to 5
First aid in case of injury	26	68.4	16	42.1	2.3
Air and heat quality control (ventilation, no dust/particles)	34	89.5	25	65.8	2.2
Fire hazards (protective gear, fire alarm)	37	97.4	23	60.5	2.2
Sufficient lighting at work	38	100	28	73.7	2.2
Noise prevention	24	63.2	17	44.7	2.1
Protective gear for labor safety	38	100	23	60.5	2.2

Source: VAF - JIN ,2017

Table A 12

Workers' Evaluation of Work Regulations, Regular Services and Benefits in Apparel Sector in Vietnam

	Workers Receiving Services and Benefits		Improvement in Policy Implementation over the Past Year (Yes/No Assessment)		Assessment of the Current Performance
	Number of Workers	Percent of Workers	Number of Workers	Percent of Workers	Average Mark on Scale 1 to 5
Work Regulation					
General regulation	118	97.5	69	57.0	2.2
Safety regulation	120	99.8	74	61.2	2.2
Social Benefits					
Leave policy	120	99.8	35	29.2	2.3
Health insurance	120	99.8	32	26.6	2.3
Family support	73	60.3	45 ^{xlix}	61.6	2.2
Regular health check	119	98.3	41	33.9	2.2

xlix 73 production line workers answered this question

	Workers Receiving Services and Benefits		Improvement in Policy Implementation over the Past Year (Yes/No Assessment)		Assessment of the Current Performance
	Number of Workers	Percent of Workers	Number of Workers	Percent of Workers	Average Mark on Scale 1 to 5
Regular personal work-related safety training (e.g. chemical usage)	118	97.5	51	42.1	2.2
Regular fire training	118	97.5	50	41.3	2.2
Other	2	1.6			
Women-related Policy					
Policy for pregnant women	70	97.2	35	48.6	2.2
Maternity leave	64	88.9	30	41.6	2.2
Other female-focused policy	25	34.7	20 ^I	80	2.1
Occupational Health and Safety Policy					
Drinking water	121	100	67	55.4	2.3
Toilet	121	100	60	49.6	2.3
First aid in case of injury	111	91.7	44	36.4	2.3
Air and heat quality control (ventilation, no dust/particles)	116	95.9	67	55.4	2.2
Fire hazards (protective gear, fire alarm)	116	95.9	75	62.0	2.2
Sufficient lighting at work	120	99.2	74	61.2	2.2
Noise prevention	67	55.4	36	29.7	2.1
Protective gear for labor safety	115	95.0	60	49.6	2.2

Source: VAF - JJN 2017

^I Only 25 female workers have answered this question

Endnotes

1 Gereffi and Fernandez-Stark, 2011

2 Dewan, S., & Suedekum, J. (2017). The Global Deal and Trade: Harnessing the Benefits for Greater Development, Equality and Growth, (November), 1–14.

3 Nathan, D. M. Tewari, & S. Sarkar, Introduction in Labor in Global Value Chains in Asia, ed. by Nathan, D. M. Tewari, & S. Sarkar (CUP, 2016)



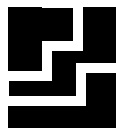
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