



# Economic and Social Upgrading in Global Value Chains

## A Case Study of Vietnam's Apparel and Electronics Sectors

Authors: Nguyen Thang, Nguyen Thi Thu Phuong and Vu Thi Thu  
Editors: Divya Prakash, Tanja V. Matheis and Sabina Dewan

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**Cover photo**

"Garment factory in HCMC"

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# Abbreviations

COC	Codes of Conduct
GVC	Global Value Chains
IDRC	International Development Research Centre
ILO	International Labour Organization
MNC	Multinational Corporations
OECD	Organisation for Economic Co-operation and Development
VND	Vietnam Dong
USD	US Dollar

Exchange rate

Nov 2018

1 USD = 23,300 VND

# 1. Introduction

Over the last two decades, Vietnam's integration into the global economy, growth and its distributional impacts have been a major topic of research in Vietnam's international economic integration coupled with domestic reforms has transformed the economy and society, partly through the rapid expansion of export-oriented, labour-intensive manufacturing industries.

Vietnam has also recently benefited from the rise of China, which induced multinational corporations (MNCs) to employ the so-called "China Plus One" strategy, according to which MNCs have been moving their assembly plants out of China to locations close to China like Vietnam. This strategy helps MNCs avoid rising labour costs along coastal lines in China, while still taking the advantage of strong supporting industries and China's rapidly expanding middle class.

Several studies of Vietnam point out that the processes of external and internal liberalization set in motion a process of inclusive growth in Vietnam over the last two decades by inducing positive structural change. This structural change is visible in the substantial decline of farm employment, and a rise of formal employment (Tarp 2017, McCaig & Pavnick 2013).

However, a number of studies raise concerns that low hanging fruit of economic reforms in early years of Doi Moi linked to the massive

movement of workers out of agriculture to low-end manufacturing and services may not be a lasting trend (Felipe 2013, McCaig & Pavnick 2013). As Vietnam becomes more developed, the future of Vietnam's inclusive growth will increasingly depend on the ability of Vietnamese firms to move up the value chain, and on the ability of Vietnamese workers to become more productive and to move up the income ladder. Rising inequality and a slow-down in growth are prompting policymakers to take notice of these imperatives.

While studies on global value chains (GVCs) are on the rise, most of the studies focus on economic impacts of GVCs. Fewer studies analyze the social impacts of GVC integration; the ones that exist are mostly case studies that rely on qualitative interviews as the key research instrument. Meanwhile, the linkages between economic upgrading and social upgrading are under-researched, if at all.

Reports on GVCs by the Organization of Economic Cooperation and Development (OECD) and the International Development Research Centre, drawing on Kaplinsky and Morris (2001), define 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. There are four types of economic upgrading with different implications for skill development and jobs:

- Process upgrading involving changes in the production process with the objective of making it more efficient; this could involve a substitution of capital for labour (e.g., higher productivity through automation) and hence a reduction of low skilled work
- Product upgrading, where more advanced product types are introduced, which often require more skilled jobs to make an item with enhanced features
- Functional upgrading involves firms changing the mix of activities performed towards higher value-added tasks. For instance, inclusion of finishing, packaging, logistics and transport can be done in at least two distinct ways: via vertical integration, which adds novel capabilities to a firm or an economic cluster; or via specialization, which substitutes one set of activities for another (e.g., an apparel firm that moves out of production and into brand marketing and design). Both involve new skill sets
- Chain upgrading, or shifting to more technologically advanced production chains, which involves moving into new industries or product markets, often utilizing different marketing channels and manufacturing technologies. This may also require a different set of workers and/or new worker skill sets (such as textile firms shifting from traditional fabrics like denim for apparel, to specialty nano fibers and strong lightweight materials that

can be used in the medical, army or aircraft industries).

Kaplinsky (2013) shows that process and product upgrading are generally recognised in the economics of innovation, explaining a firm's changing position within the chain, while a typical form of functional upgrading denotes a move away from manufacturing to other functions within a global chain. Functional and chain upgrading describe a move from one chain to another. As in the context of Vietnam, the survey focuses on functional, process and product upgrading. The key outcomes of economic upgrading include benefits such as growth of productivity, increase in value add, and profit; all of which tend to result in an expansion of economic activities at the national, sectoral and firm levels.

Social upgrading is the process of improvement in the rights and entitlements of workers as social actors; it enhances their quality of employment (Sen, 1999 and 2000). This concept is framed by the International Labour Organization's decent work framework, which has four pillars: employment (wages), working standards (working conditions), rights at work (social protection) and social dialogue (voice and economic security, which are difficult to quantify). Gender equality is a cross cutting theme across the pillars.

This study on GVCs in the apparel and electronics sectors in Vietnam aims to partially fill the gap in the literature by examining the link between economic and social upgrading.<sup>i</sup> Apparel, which

<sup>i</sup> Purposive sampling method is applied.

provides employment for millions of low skilled workers, has consistently been rising since Vietnam opened up its economy more than two decades ago. Meanwhile, the latter sector is seen as a rising star in Vietnam. The electronics sector has started to grow fast since the late 2000s, when a number of high-tech MNCs aggressively moved their factories out of China as part of “the China plus one” strategy.

Although the sample for this report is not representative at the national and the sector level, it provides in-depth information about upgrading patterns and the linkages between economic and social upgrading. Such information is rare in Vietnam because there is a lack of surveys that

simultaneously study firms and workers in an integrated manner.

This report is divided into three parts. The first part introduces the characteristics of firms and workers in the survey. The second part summarizes the evidence of economic upgrading and social upgrading. And, the final part analyzes the determinants of economic upgrading and social upgrading to answer two research questions. First, what determines economic and social upgrading at the firm level? And second, 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 qualitative feedback collected by the research team alongside the field work.

## 2. Descriptive Analysis

### a. Firm characteristics

The survey covers firms of different sizes from those having fewer than 50 workers to others with more than 1000 workers (see Annex 1), and all types of ownership. More than 70 percent of firms are foreign owned, and approximately 20 percent are privately owned (see **Table 1**).<sup>ii</sup>

The average size of all firms in the survey is 1,282 workers. This figure is 1,337 and 1,164 workers for surveyed garment and electronics firms respectively. 74.8 percent of firms in the survey produce final products, while 27.7 percent produce intermediate inputs for other firms.

### Apparel firms<sup>iii</sup>

With regard to the level of sophistication of apparel products, 67.6 percent of firms report that they do not use high-tech or special fibers, 23.2 percent of firms use special fibers suitable for sports and outdoor clothing, and only 13.9 percent of firms use special fibers for work clothing, for example, protective apparel for industry workers. Most of the apparel firms in the sample engage primarily in cutting, sewing and finishing of apparel products, following buyers' specifications and using materials supplied by the buyers. This category accounts for 81 percent of surveyed firms (see **Table 2**).

Table 1

### Surveyed Firms by Ownership (Percent)

Ownership	Apparel	Electronics	All
Private	25.9	7.8	20.2
State-owned and private	5.6	0.0	3.8
Foreign owned	67.6	82.4	72.3
Foreign owned and domestic owned	0.0	9.8	3.1
Cooperative	0.9	0.0	0.6
Total	100	100	100

Source: Firm Survey data (CAF-JJN 2017)

ii Analysis of GSO's 2017 Enterprise Census found that in 2016, shares of FDI and SOEs in the apparel sector were 13.2 percent and 0.36 percent respectively, and these figures for the electronics sector were 50.8 percent and 0.43 percent. Therefore in the sample, FDI firms are heavily over-represented.

iii Modules of firm and worker questionnaires for this survey are given in Annex 2

Table 2

**Apparel Firms by Main Tasks (Percent)**

Main tasks	Percent
Mainly engages in cutting, sewing and finishing of apparel products. It follows buyers' specifications and use materials supplied by the buyer.	81.3
Mainly engages in cutting, sewing and finishing of apparel products. It is responsible for inputs, following buyers' specifications on materials and material markets by the buyer.	4.7
Takes on a broader range of manufacturing functions, including the sourcing of inputs and logistics functions. The buyer is still responsible for design and marketing. This would be described as "full package" production.	0.9
Takes on a broader range of manufacturing functions, including the sourcing of inputs and logistics functions. In addition, it carries out parts of the design process, possibly in collaboration with the buyer. In the most advanced cases, the buyer merely attaches its own brand, or "badge" to a product designed and made by the supplier.	9.4
Designs, produces and markets its own products under its own brand. It no longer relies on a buyer for these functions.	3.7
Total	100

Source: Firm Survey data (CAF-JJN 2017)

**Electronics firms**

The survey covers 18 electronics firms that are first-tier suppliers for lead firms;<sup>iv</sup> 13 firms that are second-tier suppliers; and seven firms that are third-tier suppliers. Among them, 56.9 percent produce electronics components or devices. 29.8 percent produce subassemblies<sup>v</sup> and only nine firms and 17.7 percent of all firms produce final electronics.

**b. Worker characteristics<sup>vi</sup>**

Most workers in all categories are female, except for technicians in the electronics sector (see **Table 3**).<sup>vii</sup> Almost one-fourth of workers in production lines interviewed for this study have a higher education degree.<sup>viii</sup> This share is higher for technicians and managers at 69 percent and 88 percent respectively (see **Table 4**). Analysis of labour force survey data however finds that the

iv To put this figure in context, by the middle of 2018, Samsung – the dominant player in Vietnam's electronics sector had over 200 Vietnam-based first tier suppliers, of whom 29 were Vietnamese (Source: <https://dantri.com.vn/kinh-doanh/samsung-dua-200-nha-cung-ung-den-viet-nam-dieu-dang-tiec-cho-doanh-nghiep-noi-20180703174941047.htm>). The latter figure rose to 35 by November 2018 (Source: <https://thoibaokinhdoinh.vn/thi-truong/them-doanh-nghiep-viet-tro-thanh-nha-cung-ung-cap-1-cua-samsung-1052754.htm>).

v 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.

vi It should be noted that by design, technicians and managers are heavily over-sampled in this survey. Therefore, results are only valid for this sample while not representative for the workforce in the two sectors.

vii Our calculations which are based on datasets of labour force survey show that the average share of female workers in total employment in apparel and electronics sectors for the period from 2010 to 2016 were 67.3 percent and 66.6 percent respectively, which are slightly different from figures in Table 3.

viii This survey groups workers into three categories of: (1) Permanent Worker in the production line (including workers as heads of the worker groups, given they work in a production line); (2) Technical experts (engineer, designer, technology experts, technical supervisor, who have higher education and training qualification, at least 1-3 years of college or university education); and (3) Managers (Director, Director Board, Head of Departments).

percentages of workers in the apparel sector with a lower secondary, upper secondary and higher education for the period from 2010 to 2016 were 44.8 percent, 29.7 percent and 4.6 percent respectively. These figures for the electronics sector were 26.1 percent, 47.9 percent and 16.2

percent. There are therefore notable differences between the labour force survey and this survey.<sup>ix</sup>

In the study sample, 32 percent of workers were migrants for more than five years, and 58 percent of them were local residents.

**Table 3**  
**Labour Share by Gender and Labour Category (Percent)**

	Worker	Technical Expert	Manager	Total
<b>Apparel sector</b>				
Female	59.8	64.0	68.0	63.2
Male	40.2	36.0	32.0	36.8
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Electronics sector</b>				
Female	69.2	30.8	74.4	56.0
Male	30.8	69.2	25.6	44.0
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Worker Survey data (CAF-JJN 2017)

**Table 4**  
**Educational Achievement by Labour Category (Percent)**

	Worker	Technical Expert	Manager	Total
<b>All</b>				
Lower secondary education	24.2	12.6	2.5	14.3
Upper secondary education	50.3	18.1	9.3	28.3
Higher education	25.5	69.3	88.1	57.4
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Apparel sector</b>				
Lower secondary education	27.3	20.3	1.4	18.3
Upper secondary education	49.6	18.9	8.2	29.9
Higher education	23.1	60.8	90.4	51.9
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

ix As our sample is not nationally representative, estimates are different from those derived from dataset of labour force survey (LFS). It should be noted that by design, technicians and managers are heavily over-sampled in this survey. Therefore, results are only valid for this sample while not representative for the workforce in the two sectors.

**Electronics sector**

Lower secondary education	15.8	2.0	4.7	6.8
Upper secondary education	52.6	15.7	11.6	25.0
Higher education	31.6	82.4	83.7	68.2
<b>Total</b>	100	100	100	100

Source: Worker Survey data (CAF-JJN 2017)

Table 5

**Labour Share by Migration Status (Percent)**

	Workers	Technical Experts	Managers	Total
<b>All</b>				
Migrant for less than 5 years	8	14	9	10
Migrant for more than 5 years	26	33	38	32
Local resident	66	53	53	58
<b>Total</b>	100	100	100	100
<b>Apparel sector</b>				
Migrant for less than 5 years	2	4	4	3
Migrant for more than 5 years	24	38	38	32
Local resident	74	58	58	65
<b>Total</b>	100	100	100	100
<b>Electronics sector</b>				
Migrant for less than 5 years	29	29	19	26
Migrant for more than 5 years	29	26	37	30
Local resident	42	45	44	44
<b>Total</b>	100	100	100	100

Source: Worker Survey data (CAF-JJN 2017)



### 3. Economic Upgrading and Social upgrading

This study examines the nature of economic and social upgrading by firms in the apparel and electronics sectors, and the association between the two. It analyses the results of worker interviews in integration with the firm surveys, i.e. each interviewed worker works in one of the surveyed firms, to shed light on if and how economic and social upgrading relate with one another. This is a major value of this study as it helps fill an existing gap in the literature.

#### 3.1. Economic Upgrading

The survey collects information on three types of upgrading – process, product and functional – which took place in firms in the three-year period between 2013 to 2016. This reference of the previous three years aims to capture the lag-effect of economic upgrading translating into social upgrading. Due to high turnover of workers

in these two sectors, the study does not consider a longer period, for example, five years.

Overall, there are 110 out of 160 firms, or 68.8 percent of our sample have at least one type of economic upgrading in the period (Table 6). Two-thirds of workers interviewed are working in firms that have engaged in economic upgrading.

Table 6 shows that process upgrading (incorporation of more sophisticated technologies into production) is the most prevalent, deployed by 65 percent of surveyed firms in the two sectors combined. This, by far exceeds product upgrading (producing higher-value products), done by 8.7 percent of firms, and functional upgrading (moving to higher-value functions), done by 11.9 percent of firms. This is fairly consistent with what is found in other studies. That is, many enterprises place greater

Table 6  
**Economic Upgrading**

	In absolute number			In percentage		
	Apparel sector	Electronics sector	Total	Apparel sector	Electronics sector	Total
<b>No economic upgrading</b>	36	13	49	33	25	31
<b>Economic upgrading</b>	72	39	111	67	75	69
Process upgrading	71	33	104	66	63	65
Product upgrading	8	6	14	7	12	9
Functional upgrading	1	18	19	1	35	12
<b>Total</b>	108	52	160	100	100	100

Source: Firm Survey data (CAF-JJN 2017)

emphasis on process upgrading; for instance, 5S, TQM<sup>x</sup> and lean manufacturing (Dang Tan Duc et al. 2016). Comparing the two sectors reveals that there is a higher percentage of apparel firms that do not engage in any economic upgrading than electronics firms. More disaggregated analysis finds that while a larger proportion of apparel firms undertake process upgrading as compared to electronics firms, the opposite is true for product and functional upgrading.

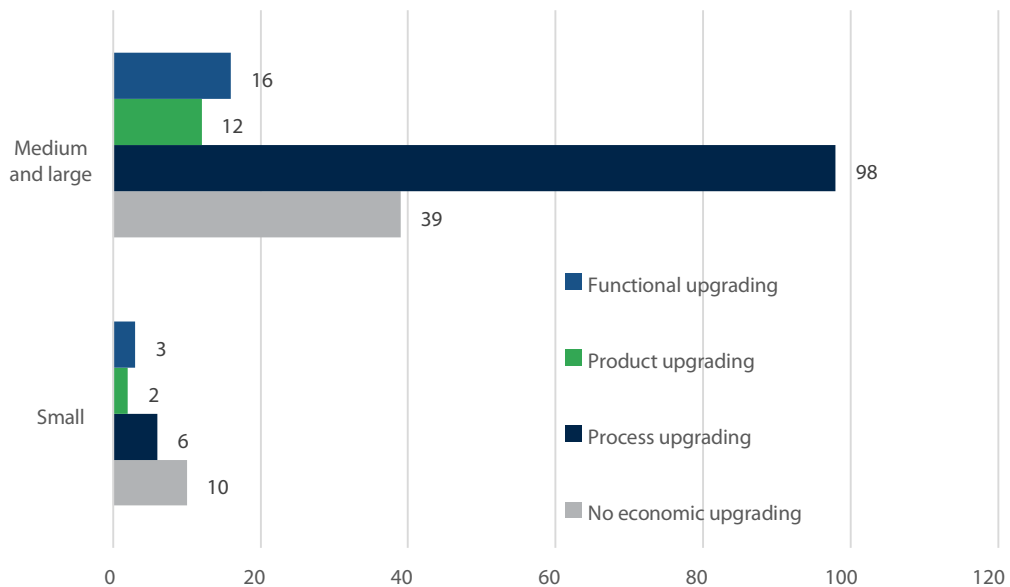
There is considerable variation in economic upgrading across different firm sizes. **Figure 1**

shows that 10 out of 18, or 55.6 percent of small firms<sup>xi</sup> did not undertake any economic upgrading whatsoever, while this proportion was way lower, at 28.9 percent (39 out of 142) for medium and large firms. Surprisingly, higher percentage of small firms do functional upgrading (three out of 18, or 16.7 percent) as compared to medium and large firms (16 out of 142 or, 11.3 percent).

**Process upgrading - the move towards a more efficient production process<sup>xii</sup>**

Firms applied several ways of process upgrading, both in terms of machines, software and production rearrangements (see **Table 7**).

**Figure 1**  
**Economic Upgrading by Firm Size (Number of Firms)**



**Source:** Firm Survey data (CAF-JJN 2017)

x 5S means Sustain, Sort, Straighten, Shine and Standardize and TQM means Total Quality Management

xi According to Vietnamese definition, firms with less than 100 workers are considered of small size, and the rest, medium and large sizes.

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

Table 7

**Process Upgrading (Number of Firms)**

Process upgrading	Apparel sector	Electronics sector	Total
Replaced one or more tasks that were formerly done manually with a machine	38	11	49
Replaced one or more machines with technically more advanced ones	53	16	69
Introduced a new and better software to control/run the machines	14	5	19
Organized the production process differently, e.g. re-arranged available machines and /or workers, in the available production setting	45	24	69
Any process upgrading	71	33	104

Source: Firm Survey data (CAF-JJN 2017)

**Product upgrading - the move towards more advanced product types<sup>xiii</sup>**

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 fashion over functional clothing in the apparel sector and more sophisticated parts, components, and/or products in the electronics sector.

Eight apparel firms upgraded their products, moving into production of higher value products with the use of more sophisticated technology and/or methods of production. Meanwhile, six electronics firms moved up the supply ladder, from the third-tier to become second-tier, first-tier suppliers or the lead firm.

**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.<sup>xiv</sup> Functional upgrading is the most advanced type of upgrading within a sector. Enterprises need to acquire new, higher value-added capabilities.

Functional upgrading is undertaken by only one firm or one percent of surveyed firms in the apparel sector, thus nearly all apparel firms stayed in cutting, sewing and finishing of apparel products. This is fairly 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).

<sup>xiii</sup> New products are introduced, which often requires more skilled jobs to make an item with enhanced features

<sup>xiv</sup> 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 own products under its own brand.

Box 1

**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 a number of 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 which produces for both foreign and domestic markets says that the firm employs a dual strategy: mostly do CMT for 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 labour turnover, with its workforce frequently fluctuating between 300-380 workers. Recruitment of new workers is becoming more difficult.<sup>xv</sup> The firm therefore increased the number of automated machines, with 85 percent of thread cutters being automated, and the number of sewing machines with automatic programming also rose substantially. Such a substitution of labour 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<sup>xvi</sup>, but the results are yet to be seen. In particular, there is a data analysis section in the firm, which collects customers’ opinions through customer survey cards, and the firm has its own sales software. Instead of labour substitution, improvement in management efficiency may be beneficial for social upgrading as it may give more room for the firm to upgrade.

This firm in general is upbeat about the prospect of the apparel sector in the short to medium term, largely because many factories have been moving out of China to neighboring countries to reduce

xv The issue of labour shortage is experienced by many firms, as the problem of ageing population started to show up. GSO’s data show that the number of net entrants into the labour 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 5-year period 2013-2017. This is coupled with rising demand for labour in the context of rising FDI inflows and increasing labour outflows in the form of labour export in recent years, resulting in difficulties in firms’ recruitment.

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

their labour 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 a number of 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 true 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.

The situation is considerably better in the electronics sector, with 18 firms, or 35 percent of surveyed electronics firms, expanding their functions, taking on new responsibilities for their own input supply, producing more electronic subassemblies or final electronics products, or moving into research and development activities, or starting distribution of their own products.

### 3.2. Social Upgrading

This report looks at a number of dimensions to determine 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. Finally, voice and feedback mechanisms from workers to firms are discussed.

#### 3.2.1. Training and promotion

Workers are provided with on-the-job training, and training courses. 96.4 percent or 54 out of 56 surveyed workers 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 8**). In relative terms, technicians have the highest percentage of being trained, at 25.6 percent, they exceed workers (13.2 percent) and managers (15.5 percent).<sup>xx</sup>

<sup>xx</sup> This survey groups workers into three categories of: (1) Permanent Worker in the production line (including workers as heads of the worker groups, given they work in a production line); (2) Technical experts (engineer, designer, technology experts, technical supervisor, who have higher education and training qualification, at least 1-3 years of college or university education); and (3) Managers (Director, Director Board, Head of Departments).

## Box 2

### **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 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 limited product and functional upgrading in the electronics 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<sup>xvii</sup> The number of second-tier suppliers has also increased to nearly 300 enterprises.<sup>xviii</sup>

Such encouraging developments are attributed to a large extent to 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.<sup>xix</sup>

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 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 interview, the firm had not yet made the final decision on whether to become a part of Samsung's global value chain 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>

Training is helpful to increase labour productivity but is also a condition for a promotion. 56 workers received special skill training courses that were related to their new positions.

71 out of 400 workers 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. Seven cases report the change in position due to an upgrade in manufacturing technology, and another seven cases reported a change in position owing to rearrangement of manufacturing processes.

At present, Vietnam's apparel and the electronics sectors are able to compete with leading exporters such as India, Bangladesh, Mexico, Indonesia, and even have higher productivity than other countries like Central America - the Caribbean, Myanmar, and Cambodia. Furthermore, some firms report a strategy on process upgrading that places a focus on labour training and minimizing production costs to increase competitiveness. However, working in labour-intensive firms, most of the workers have low skills and education beyond secondary schooling (see **Box 2**).

**Table 8**  
**Training Participation and Promotion (Persons)**

		Survey sample	Training participation					Promotion	
			Management skills	Relevant technical knowledge	Technical foreign language	Computer, electronics control device	Soft skills		Total
<b>Apparel sector</b>	Worker	121	4	11	0	0	5	11	13
	Technicians	74	5	12	1	1	4	13	15
	Manager	73	2	1	0	0	1	2	7
	<b>Total</b>	<b>268</b>	<b>11</b>	<b>24</b>	<b>1</b>	<b>1</b>	<b>10</b>	<b>26</b>	<b>35</b>
<b>Electronics sector</b>	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
	<b>Total</b>	<b>132</b>	<b>16</b>	<b>27</b>	<b>8</b>	<b>5</b>	<b>8</b>	<b>30</b>	<b>36</b>
<b>Total</b>	Worker	159	6	19	3	3	7	19	21
	Technicians	125	12	22	3	1	8	26	32
	Manager	116	9	10	3	2	3	11	18
	<b>Total</b>	<b>400</b>	<b>27</b>	<b>51</b>	<b>9</b>	<b>6</b>	<b>18</b>	<b>56</b>	<b>71</b>

Source: Worker Survey data (CAF-JJN 2017)

Box 3

**Most Workers Have Low Skills and Receive Only Basic Training**

Electronics enterprises mainly undertake the assembly and testing of electronic machines and components. Design, technology and product marketing are done by foreign companies. Given the nature of the work, workers in electronics firms are not required to possess higher order skills. Instead, they only tend to have basic engineering skills to perform standard work. Workers recruited to work in production lines have usually completed upper secondary school. Unskilled workers are the most recruited group to work in production lines of electronics firms. The skills required for a job in the “unskilled” production line include good eyesight, skillful fingers, and the ability to do repetitive tasks. They receive basic job training when they first joined the firms. Opportunities for workers to develop their skills for long-term careers are limited. As a result, most of workers are trapped at the bottom end of the well-known GVC’s smile curve, thus generating modest value added.

The training requirements for administrative personnel are also simple. Skill improvements, therefore, are limited to a small and selective group of workers. Furthermore, there is little formal and effective co-operation between these enterprises and human resource training organizations in the country.

One of electronics firms interviewed for the study had nearly 800 workers producing components for mobile phones, monitors and other electronic devices for five years. It already invested in new and modern technology and machinery systems when it started. The firm now focuses on labour training and minimizing production costs by re-arranging the production setting. Skills of their workers have been improved, and as a result the rate of defective products reduced significantly. The percentage of defective products dropped by a third between the first year of operations and the time of the study. Thanks to the skills upgrading of the technical staff and workers in production lines, the firm has increased its sales to the European Union and has received more orders. Production management has met the standards under IATF - 1694. The firm has provided different types of training for its workers. Technicians and managers are sent to firms in Thailand for practical training. Japanese trainers are invited to provide technical guidance and training on management skills for technicians and managers who subsequently become trainers for other workers in the firm. The firm set up a training center, which provides monthly sessions based on actual demand from managers and workers. Frequent updates in technical lessons considerably increased productivity and improved the firm’s competitiveness.

**Source:** Qualitative interviews



### 3.2.2. Wage improvement

Table 9 shows the average monthly wage of workers in both nominal and real terms in 2013 and 2016.<sup>xxi</sup> The average wage of all workers in the dataset in 2016 was VND 8,844 thousand per month. In real terms, average wages of workers in the apparel and electronics sectors grew by 27 percent and 39 percent respectively. The average monthly wages in electronics firms is about 9.3

percent higher than that in apparel firms.<sup>xxii</sup> The survey points to only small differences in the average wage of male and female workers. This contrasts with labour force survey results that point to a significant gender wage gap in the two sectors.<sup>xxiii</sup> A high positive correlation is found between wage and the education level, i.e., higher wages associated with higher education.

Table 9

#### Average Monthly Wage of Workers (Thousand VND)

	2013	2016 (Nominal)	2016 (Real)
<b>By sector</b>			
Apparel	6,738	9,305	8,583
Electronics	6,770	10,165	9,377
<b>By gender</b>			
Female workers	6,745	9,605	8,861
Male workers	6,755	9,559	8,818
<b>By educational level</b>			
Secondary school	5,368	7,605	7,015
High school	5,462	7,979	7,360
Vocational training	6,302	8,973	8,277
Higher education	8,675	12,185	11,240
<b>By labour category</b>			
Workers	4,998	6,940	6,402
Technicians	6,661	9,636	8,889
Managers	9,227	13,195	12,172
<b>Total</b>	<b>6,749</b>	<b>9,587</b>	<b>8,844</b>

Source: Worker Survey data (CAF-JJN 2017)

xxi Deflated to Dec 2013, using inflation rates in years 2014, 2015, 2016 taken from WDI indicators (i.e.  $1.0409 \times 1.00878 \times 1.0324$ )

xxii As our sample is not nationally representative, figures in Table 9 are different from those derived from dataset of labour force survey (LFS). Calculations based on LFS came up with lower wages 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. These figures are 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 wages in the apparel and electronics sectors respectively were 7.3 percent and 5.5 percent during the three-year period 2013-2016, or 2.4 percent and 1.8 percent per annum. As our sample is not nationally representative, estimates are different from those derived from dataset of labour force survey (LFS). It should be noted that by design, technicians and managers are heavily over-sampled in this survey. 57 percent of female workers in apparel sector and 65 percent of female workers in electronics sector are working as technicians and managers which is not the case at national level and technicians and managers monthly salary 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 observed 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

xxiii According to LFS data, in 2013, wages of female workers relative to those of male workers in the apparel and electronics sectors were 83.4 percent and 92 percent. These figures in 2016 were 67.1 percent and 97.1 percent, i.e. the gap increased in the electronics sector and decreased in the apparel sector

The median increase in wages is 23 percent. It means that half of the surveyed workers have seen their wage increase less than 23 percent, while more than a half of workers have wage increase more than 23 percent. However, not all the cases of economic upgrading have translated into social upgrading to benefit workers. In some cases, the survey found that the wages of workers did not change despite product upgrading.

Interviews with workers from both sectors 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 labour contract that is renewed when it ends. For workers whose contracts are not renewed often find themselves forced to take lower paid work in different firms (**Box 4**).

#### Box 4

### Examples of Technology Upgrading and Labour Disruptions

In a first example, a foreign-invested electronics firm that was interviewed by the research team invested in new technology in order to increase productivity and fulfill strict requirements on product quality. In late 2014, they imported new machinery. Around 200 production lines had been gradually renovated in about half a year. From 18 to 20 workers in a production line, only six to eight workers were retained.

A second example is that of a young woman who lost her job as a result of technological upgrading who had to accept another lower-wage position at a different firm. In 2011, the firm hired a 35-year-old female to work on the assembly production line. In March 2015, the firm informed her that her labour contract would not be renewed. She left the firm after three years of one-year labour contracts, which is permissible by law. The firm gradually reduced its workforce from 7,000 to about 3,500 workers. She applied to two other electronics companies but was not successful in getting a job.

She said “They probably do not hire me because they prefer to hire those under the age of 30. I could not find any job in another electronics firm. The sector tends to offer a higher salary, and has a clean working place. I had to apply to other sectors. It took me two months to find a job in a leather shoe firm with a lower salary. My wage dropped from more than VND 7 million to VND 4 million per month. Even though I had experience, I had to start from scratch in the new firm as a junior worker. I do not know what the future will look like, but I had planned to stay at this industrial park for four more years to earn wages to pay for my children education. My hope is that after the children finish their studies, I can return to the countryside where I can get a low wages from agriculture. I will not be qualified to get social insurance benefits at that time, or pension in the future, because I will only have worked ten years.”

**Source:** Qualitative interviews

### 3.2.3. Improvements in working conditions

#### a. Working hours

The average number of working hours for all workers is 9.2 hours per day (Table 10). The minimum time a worker has to work in a day is three hours in the apparel sector, and eight hours in electronics sector; the maximum time is 12 hours a day. Most workers have to work nine hours a day. The average number of working days per month for all workers is 25.5 days a month; the minimum is three days in apparel sector and 20 days in electronics sector. In both sectors, the maximum number of working days allowed in a month is 28 days.<sup>xxiv</sup>

#### b. Work regulations, regular services and benefits

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 without a decrease in income and/or an improvement in any of the working conditions listed in Table 11. As almost all workers have written labour contracts and are covered by compulsory social protection, this indicator is excluded. In general, 86 percent of workers in production lines reported socially upgrading. Vietnamese firms, under pressure to be productive and be seen as socially responsible, tend to pay attention to working conditions (Box 5 and Box 6).

Table 10

#### Average Working Hours

	Current average working hours per day (hours)	Current average working days per month (days)	Changes in the last three years (percent of workers)			The breaks are sufficiently long to satisfy the basic needs (percent of workers)
			Increase	The same	Decrease	
Apparel sector	9.1	25.6	8.3	81.0	10.7	90.9
Electronics sector	9.7	25.2	21.1	68.4	10.5	86.8
Total	9.2	25.5	11.3	78.0	10.7	89.9

Source: Worker Survey data (CAF-JJN 2017)

xxiv Analysis of data of labour 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. These figures for the electronics sector were 51.1 and 52.1.

Table 11

**Workers' Evaluation of Work Regulations, Regular Services and Benefits**

	Workers receiving the services and benefits		Improvement in policy implementation over the last three years (Yes/No assessment)		Assessment of the current performance <sup>xxv</sup>
	Number of workers	Percent of workers	Number of workers	Percent of workers	The average mark on the scale 1 to 5
	(1)	(2)	(3)	(4)	(5)
<b>Work regulation</b>					
General regulation	156	98.1	96	61.5	2.2
Safety regulation	158	99.4	103	65.2	2.2
<b>Regular services and benefits</b>					
Leave policy	158	99.4	53	33.5	2.3
Health insurance	156	98.1	48	30.8	2.3
Family support	95	59.7	55	57.9	2.2
Regular health check	153	96.2	55	35.9	2.2
Regular personal work-related safety training (e.g. chemical usage)	155	97.5	69	44.5	2.2
Regular fire training	156	98.1	66	42.3	2.2
Other	3	1.9	1	33.3	
<b>Policies applicable to female labour<sup>xxvi</sup></b>					
Policy for pregnant women	90	91.8	45	50.0	2.2
Maternity leave	85	86.7	40	47.1	2.2
Other female-focused policy	28	28.6	21	75.0	2.1
<b>Facilities available to workers</b>					
Drinking water	159	100	87	54.7	2.3
Toilet	159	100	81	50.9	2.3

xxv Scale from 1 as very bad performance, being very difficult to access, to 5 as very good performance, being very easy to access.

xxvi Question applied to female workers only.

First aid in case of injury	137	86.2	60	43.8	2.3
Air and heat quality control (ventilation, no dust/particles)	150	94.3	92	61.3	2.2
Fire hazards (protective gear, fire alarm)	153	96.2	98	64.1	2.2
Sufficient lighting	158	99.4	102	64.6	2.2
Noise prevention	91	57.2	53	58.2	2.1
Protective/safety gear	152	95.6	83	54.6	2.2

**Source:** Worker Survey data (CAF-JJN 2017)

#### Box 5

### **High Turn-over Prompts Enterprises to Improve Worker Welfare to Maintain a more Stable Labour 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 labour 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 labour 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 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 the worker turnover rate 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 wage 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.”

**Source:** Qualitative interviews

Box 6

**The Enterprise Enhances the Worker Welfare to be Seen as Socially Responsible in Line with the Global Trend**

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, labour 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. Labour protection is strictly enforced. The firm always adheres to the principle of fair treatment of workers. Ensuring jobs, training and stable income for workers are key to firm's productivity growth.

**Source:** Qualitative interviews

Occupational safety, regulating heat, and workplace hygiene are reported to be among the most important factors to manage working conditions. Workers in some apparel firms report having to work in an environment with dust, garbage, noise and a lack of light. These factors are responsible for ailments including adverse effects on the lungs and bronchi. Many firms have installed modern production lines, equipped with air conditioning and ventilation fans that have improved the health of workers and reduced occupational diseases. At present, most firms have

installed circulation systems. This system ensures that the air conditioning in the workshop keeps workplace sufficiently cool. Gypsum ceilings, and anti-hot zamil panels for roof also help regulate temperature. Labour safety in working places appears to receive due attention by managers (Box 7).

Limited finances on part of the firm prevent improvements in worker wages, as well as other working conditions. Limited resources are used for investments in new technology and automation (Box 8).

#### Box 7

### Labour Safety at Work

Managers report that they paid attention to labour 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.

Still, some firms 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 make the space hot. In the summer season, outside temperatures have a great negative impact on the indoors 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.

Source: Qualitative interviews

#### **3.2.4. Feedback loops from workers to firms**

Workers reported two main channels for offering feedback to firms -- professional associations and the Trade Union system. Associations in the sectors have made many recommendations to the government on the amendment of regulations related to the protection of labour 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 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 in order to ensure their security. Grassroots trade unions are also encouraged to conduct inspections and supervise the implementation of wage policies, social insurance, health insurance, labour safety and hygiene policies, child allowance, allowance for female workers in childbirth; organizing hygienic meals free from

Box 8

**Firms Upgrade Technology to Improve Productivity and Competitiveness but Workers do not Experience Discernible Improvements in Welfare**

An apparel firm with more than 1000 workers working on Korean orders to export high-value items to the European market experienced big changes in production three years ago. The firm moved to more sophisticated products. For example, in the past, the firm produced a dress from 40 to 45 items and received USD 2. But now, the firm selects orders with higher prices. For example, a dress uses 60 to 65 items and is priced at USD 4. The higher price also means that buyers are more demanding. As such, the firm has to check outputs more carefully and has to maintain a quality control system. The firm enhances competitiveness, which allows it to receive orders with higher prices.

The firm invested VND 2 billion in various types of machinery to meet product quality standards and the buyer demands such as new fabric quality, cutting and inspection machines, and advanced electronic sewing machines. The number of workers in some production lines such as in cloth cutting, and cloth spreading units, decreased as a result, but the total number of employees did not decrease because of an increase in the number of orders and need for more management staff.

Although investment in technology resulted in productivity and output growth, only six workers in the cloth cutting unit were trained to operate the machinery and received higher wage from VND 1.5 to 2 million per month. After investing in machinery, the firm revised to formula that links worker's wage to productivity. The rest of the workers did not experience any increase in their wage despite their productivity growth. Other benefits remain the same as before the technological upgrading.

Source: Qualitative interviews

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 labour 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 the firm managers to implement various measures to fight against the heat such as appropriate ventilation systems, cooling equipment, personal protective gear, and adequate hydration and nutrition for workers. 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, the lighting quality, noise reduction and other conditions at work.

### 3.3. Links Between Economic Upgrading and Social Upgrading

#### 3.3.1. Workers benefit from social upgrading associated with economic upgrading

One of the key challenges to promote decent work in global value chains is to accrue greater benefits to workers in addition to improving the stature of firms. Upgrading firms in the global value chain should ideally result in social upgrading for workers. This section analyzes the linkages between economic upgrading of firms and social upgrading of their workers.

**Table 12** shows the shares of surveyed workers with any social upgrading by the economic upgrading category (**Table 12**). This table shows that 301 out of 400 workers, or 75 percent of workers 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 do not receive any type of social upgrading.

These figures indicate that working in firms with economic upgrading appears to increase 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 are socially upgraded. Vietnam's accelerated global integration coupled with domestic reforms, youth population, and labour market regulations are among the factors that may have worked in favor of workers in the employer-employee relationship enabling workers to benefit from social upgrading in the absence of firm's economic upgrading (CAF 2018).

Table 12

#### Economic and Social Upgrading

	In absolute number			In percentage		
	Economic Upgrading	No Economic Upgrading	All	Economic Upgrading	No Economic Upgrading	All
Social Upgrading	213	88	301	70.8	29.2	100
No Social Upgrading	63	36	99	63.6	36.4	100
<b>Total</b>	276	124	400	69	31	100

Source: Firm & Worker Survey data (CAF-JJN 2017)

Box 9

### **A Few Vietnamese Firms Supply Electronic Components to Large Global Corporations while Providing Social Upgrading for their Workers**

Global Group S. said less than 10 percent of satellite firms supplying components and accessories are owned by the Vietnamese. Those Vietnamese satellite firms mostly do 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 has invested in the most modern, automated and semi-automated production that meets international standards. The quality management system meets standards of ISO 9001: 2008 while the environment management system meets ISO 14000: 2004 and the European Pb-free standards. Thanks to these management systems, the firm can effectively control the quality at all stages of business, from the procurement of raw material inputs 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 employing 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 strict requirements of clients, thereby enhancing the firm's competitiveness. The work environment is evaluated by workers as "clean and comfortable, with respectable treatment of workers, good lunches, due attention to welfare activities like sports, support for children's education, and good wages".

**Source:** Qualitative interviews

At a more disaggregated level, a cross-tabulation of different types of social upgrading against different types of economic upgrading is provided in **Table 13**. Column 8 shows that just under 14 percent of workers in production lines did not experience improvements in their working conditions. Overall, a large percentage of all types of workers did not receive promotion (82.3 percent) followed by the proportion of employees whose wages did not increase (49 percent). It is what is expected, as improving working conditions is the easiest thing for firms to do, while promotion is 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, given the prevalence of this type of economic upgrading.

Comparing across types of employees, **Figure 2** shows that technicians benefit the most, with 56 percent seeing their wage increase and 26 percent getting a promotion (out of 125). Managers follow, with these percentages at 52 percent and 16 percent respectively (out of 116). For workers, these percentages were 47 percent and 13 percent respectively (out of 159). More details are provided in Annex 3.

Table 13

**Different Types of Economic Upgrading and Social Upgrading<sup>xxvii</sup> (Persons)**

	Yes + Economic Upgrading	No + Economic Upgrading	Yes + No Economic Upgrading	No + No economic upgrading			
	(1)	(2)	(3)	(4)	(5)	(6)=(2)/ (5)	(7)= ((2)+(4))/ (5)
<b>All</b>							
Social upgrading	213	63	88	36	400	15.8%	24.8%
Promotion	56	220	15	109	400	55.0%	82.3%
Wage improvements	138	138	66	58	400	34.5%	49.0%
Working conditions improvements	102	9	35	13	159	5.7%	13.8%
<b>Process upgrading</b>							
Social upgrading	200	59	101	40	400	14.8%	
Promotion	53	206	18	123	400	51.5%	
Wage improvements	127	132	77	64	400	33.0%	
Working conditions improvements	96	8	41	14	159	5.0%	
<b>Product upgrading</b>							
Social upgrading	29	7	272	92	400	1.8%	
Promotion	7	29	64	300	400	7.3%	
Wage improvements	22	14	182	182	400	3.5%	
Working conditions improvements	14	1	123	21	159	0.6%	
<b>Functional upgrading</b>							
Social upgrading	43	6	258	93	400	1.5%	
Promotion	11	38	60	291	400	9.5%	
Wage improvements	32	17	172	179	400	4.3%	
Working conditions improvements	16	0	121	22	159	0.0%	

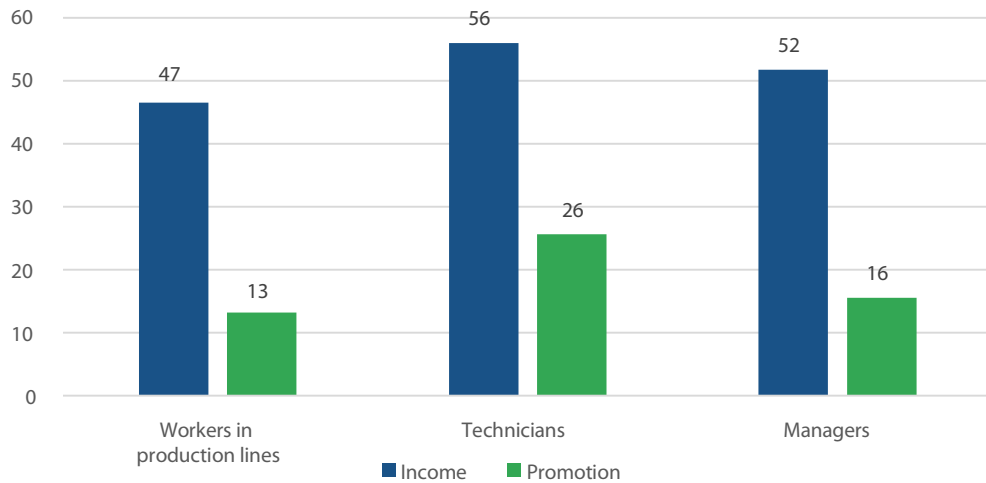
**Source:** Firm & Worker Survey data (CAF-JJN 2017)

Note: The question on working conditions was applied only to 159 workers in production lines. The questions related to working conditions have been asked only by the production line workers.

xxvii In the table, 'Yes' means the firms have experienced social upgrading while 'No' means the firms doesn't experienced social upgrading

Figure 2

### Improvements by Type of Employees (Percent)



Source: Worker Survey data (CAF-JJN 2017)

#### Box 10

### Business Growth went Hand-in-Hand with Skill Improvement for Managers

A domestic apparel firm with 900 workers produced high-quality shirts for export to the Japanese market. Recognizing that in order to increase production efficiency, having already made large investments in machinery and having an abundant labour supply, the firm focused on building management skills. Business leaders are determined to learn the skills of the Japanese leadership. The firm employs Japanese executives and applies the entire Yuki Japan management process. The firm has a management training strategy for top level management down to the head of production lines, based on the online evaluation of individual performance. Improvements in the production management process has increased capacity by 70 percent and helped reduce the average cost of the business by 20 percent thanks to the Yuki processing model.

One manager noted, "I learned a lot about how the Japanese set up the production. With the same workforce, but 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 the wage is approximately 20 percent higher than in other firms in the same area".

Source: Qualitative interviews

### 3.3.2. Correlates of economic upgrading and social upgrading

There are a number of factors that affect economic and social upgrading in firms. These include the firm's position within the value chain, the type of work that workers undertake, and the socioeconomic condition of workers in a work category.<sup>xxviii</sup> While social upgrading is the central research focus of this study, economic upgrading is also key because of the potential association between these two: 213 out of 301 workers, or 70 percent, who experience at least one type of social upgrading work in firms with economic upgrading (Table 13).

The authors undertook an econometric analysis to identify correlates of various types of firm's economic upgrading and worker's social upgrading, controlling for other factors. This section attempts to determine whether an association between economic upgrading and social upgrading exists.

#### a. Economic upgrading correlates

To investigate the correlates of economic upgrading at the firm level, the study employs logit models. Four types of economic upgrading are analyzed. In addition, a fifth one is added, to explore the potential economic upgrading.<sup>xxix</sup> The regressors include sector (dummy variable), firm age, firm size in terms of capital and workers, ownership, firm growth, and market linkages.<sup>xxx</sup>

Table 14 shows that firms with more than 1000 workers have higher probability of having any type of economic upgrading. The results are statistically significant at the one percent level. When disaggregating by various types of economic upgrading, firm size only matters for process upgrading, while it does not make a difference for product or functional upgrading.

The results also indicate that firms in the apparel sector have a lower probability of undertaking functional upgrading; the results are statistically significant at the 1 percent level. This is consistent with a common perception that in the apparel sector, functional upgrading towards higher value-added activities, including input sourcing, supply chain management, design and product development, marketing and branding is challenging. The lack of a more educated workforce is perceived to be a factor that prevents apparel firms from upgrading the firm's functions and products. According to the World Bank "... to remain competitive in the long term, Vietnam will need to move beyond advantages based on manufacturing and selling goods at lowest cost. This shift will require the country to develop a knowledge-intensive workforce and a greater number of export-oriented, domestically owned firms." (World Bank 2017, p. 101).

With regards to ownership, the results of econometric analysis indicate that private firms have a higher probability of functional upgrading

xxviii <http://www.capturingthegains.org/pdf/ctg-wp-2010-03.pdf>

xxix Based on the variable of whether the firm has a plan to upgrade its position in the value chain in the near future.

xxx The labour size of the firm is defined by a dummy of having more than 1000 workers. The ownership is proxied by the dummy variable for firms that have private, and foreign ownership. Firm growth is proxied by a dummy of the physical production capacity increase in the last three years. The market linkages are proxied by the dummy of selling products to FDI firms in Vietnam, and having subcontracts to other firms in recent years.

Table 14

**Correlates of Economic Upgrading**

	Model 1	Model 2	Model 3	Model 4	Model 5
	Any economic upgrading	Functional upgrading	Product upgrading	Process upgrading	Plan to upgrade
Apparel	-0.761 (-1.61)	-3.515*** (-3.14)	-1.019 (-1.57)	-0.186 (-0.43)	-0.505 (-1.10)
Age of the firm	0.00253 (0.92)	0.00545 (0.09)	0.00138 (0.19)	0.0024 (0.85)	0.0014 (0.35)
Have more than 1000 workers	1.695*** (3.35)	-0.224 (-0.32)	0.0362 (0.06)	1.465*** (3.21)	0.585 (1.36)
Private	0.227 (0.24)	-2.945* (-1.79)	0.396 (0.31)	-0.0651 (-0.07)	-1.106 (-1.44)
Foreign	-0.924 (-1.11)	-1.775 (-1.62)	-0.0245 (-0.02)	-1.153 (-1.40)	-1.680** (-2.57)
Growth	-0.227 (-0.52)	-1.041 (-1.57)	-0.616 (-1.03)	-0.418 (-1.01)	-0.19 (-0.46)
Sell to FDI	-0.21 (-0.44)	1.109 (1.54)	-1.43 (-1.64)	-0.302 (-0.68)	0.656 (1.43)
Subcontract	-0.284 (-0.73)	-0.0915 (-0.13)	-0.436 (-0.69)	-0.103 (-0.27)	-0.102 (-0.25)
_cons	-3.132 (-0.56)	-9.775 (-0.08)	-3.702 (-0.26)	-3.133 (-0.54)	-2.371 (-0.29)
N	159	159	159	159	159

t statistics in parentheses

\* p&lt;0.10, \*\* p&lt;0.05, \*\*\* p&lt;0.010

than other firms, other things being equal. However, this result is statistically significant only at the 10 percent level. Foreign firms are less likely to economically upgrade in the future, which is statistically significant at the five percent level.

#### **b. Social upgrading correlates**

To determine whether economic upgrading relates to social upgrading, the study uses logit models to determine the probability of social upgrading with and without controlling for economic upgrading.<sup>xxxii</sup> The model also examines how attributes such as the sector, age of the firm, gender, education, experience, skill, and the migration status of workers affects the probability of social upgrading.<sup>xxxiii</sup> The model includes a sector dummy variable to capture possible differences between apparel and electronics firms.

**Table 15** presents estimation results as for each type social upgrading, without controlling for economic upgrading. Workers in apparel firms are less likely to be promoted and to improve their wages, other things being equal. The results also indicate that workers in younger firms are more

likely to get promoted than their counterparts in older firms. Technicians and managers are more likely to get promoted and to benefit from wage increases than workers in production lines. Related experience matters, although it is only statistically significant at the 10 percent level.

**Table 16** presents the estimation results with the economic upgrading control. These results are fairly similar to those obtained when the economic upgrading variable is not included in the regressions (**Table 15**) with an exception, namely related experience is not statistically significant at any confidence level. When the economic upgrading variable is included, it is found that economic upgrading is associated with improvements in working conditions for workers in production lines, which is statistically significant at the one percent level. It is also associated with promotion, other things being equal, but it is statistically significant only at the 10 percent level.

Managers appear to be more likely to see a wage increase than technicians, but it is only statistically significant at the 10 percent level (Annex 4).

xxxii As mentioned above, any social upgrading is defined by whether a labour have better position, and/or wage increase, and/or working condition improvement.

xxxiii The skill variable is proxied by the dummy of being workers in production lines, technical experts, or managers. The experience of a labour is defined by the number of years working in the same sector.

Table 15

**Correlates of Social Upgrading without Controlling for Economic Upgrading**

	Model 6	Model 7	Model 8
	Promotion	Upgrade in working conditions	Wage increase
Apparel	-0.788** (-2.52)	-1.139 (-1.40)	-589.5** (-2.06)
Age of the firm	-0.135*** (-3.52)	0.0661 (1.14)	24.47 (0.89)
Vocational training and above	-0.462 (-1.37)	-0.288 (-0.54)	-407.6 (-1.35)
Male	-0.284 (-0.96)	-0.197 (-0.40)	-95.5 (-0.38)
Related experience	0.0684* (1.71)	-0.0181 (-0.26)	-26.75 (-0.92)
Technician	1.268*** (3.34)	N/A (.)	917.1*** (2.76)
Manager	0.840* (1.89)	N/A (.)	1568.3*** (4.23)
Local resident	0.19 (0.66)	-0.998 (-1.49)	181.8 (0.71)
_cons	2.309** (2.40)	1.795 (1.08)	1332.1* (1.78)
N	400	159	397

t statistics in parentheses

\* p<0.10, \*\* p<0.05, \*\*\* p<0.010



Table 16

**Correlates of Social Upgrading with Controlling for Economic Upgrading**

	Model 9	Model 10	Model 11
	Promotion	Upgrade in Working conditions	Wage increase
Economic upgrading	0.644* (1.95)	1.546*** (3.06)	8.286 (0.03)
Apparel	-0.737** (-2.34)	-1.122 (-1.32)	-588.4** (-2.04)
Age of the firm	-0.133*** (-3.48)	0.0806 (1.27)	24.49 (0.89)
Vocational training and above	-0.498 (-1.45)	-0.223 (-0.39)	-408.3 (-1.34)
Male	-0.314 (-1.05)	-0.269 (-0.52)	-95.97 (-0.38)
Related experience	0.0622 (1.55)	-0.0422 (-0.56)	-26.84 (-0.92)
Technician	1.314*** (3.42)	N/A (.)	917.9*** (2.75)
Manager	0.874* (1.94)	N/A (.)	1569.0*** (4.22)
Local resident	0.168 (0.58)	-1.126 (-1.62)	181.6 (0.71)
_cons	1.820* (1.83)	0.735 (0.41)	1326.1* (1.71)
N	400	159	397

t statistics in parentheses

\* p&lt;0.10, \*\* p&lt;0.05, \*\*\* p&lt;0.010

## 4. Conclusions

Most of the economic upgrading in firms takes in the form of process upgrading. The number of firms with product or functional upgrading is still very small. Therefore, Vietnam has room for improvement and it must exert considerable effort in these areas to move up in its value chains. This, in turn requires, among other things, that Vietnamese firms have access to a skilled workforce.

Firm size matters for economic upgrading; firms with a thousand or more workers are more likely to undertake economic upgrading. Among those in the survey, apparel firms have a lower chance of economic upgrading than electronics firms. This might be explained by the fact that the latter firms are more closely vertically linked to the lead firm in producer-led GVCs in the electronics sector, while the former firms have looser links with brand names in buyer-led GVCs in the apparel sector.

Other characteristics that can affect economic upgrading include firm ownership, its growth performance, and market linkages. Desk research finds that after several years of continued efforts by all parties – Samsung as the lead firm, Vietnamese firms and the Government of Vietnam – there are rapidly increasing number of Vietnamese firms that have succeeded in becoming first-tier or second-tier suppliers to Samsung. At the time, qualitative research reveals that while becoming suppliers to Samsung is very financially attractive, as Samsung's orders are in

large volumes, it is also risky, because suppliers get short lead times to full orders. This requires considerable new investments and poses makes execution challenging. Similarly, risk is also cited by a number of representatives of apparel firms as a major factor that prevents many apparel firms from engaging in product and functional upgrading.

Another factor that constrains firms to move up the value chain, as the interviews with firms revealed, is the lack of skilled workers who can perform more sophisticated tasks.

There is some evidence that workers in production lines in firms with economic upgrading are more likely to see an improvement in their working conditions than their counterparts in firms without economic upgrading. Employees in firms with economic upgrading are more likely to see promotions than firms without economic upgrading. Furthermore, qualitative research reveals that some firms, after having invested in physical capital started to re-focus their efforts on training for both workers in production lines, technicians and managers to make the best use of the machinery and other acquired technology. As such, there is a two-way interaction between economic upgrading and social upgrading.

However, the association between economic upgrading and social upgrading is far from perfect. The qualitative interviews reveal that labour substitution by machines results in

economic upgrading, but not necessarily in social upgrading. In contrast, improvements in management efficiency may benefit social upgrading.

Among different types of economic upgrading, process upgrading appears to benefit the largest number of employees. Benefits of product

upgrading, and functional upgrading tend to go mostly to technicians and managers. Across types of employees, there is evidence that technicians and managers are more likely to see their wages rise and to get promoted than workers in production lines. This is true regardless of whether the firm is economically upgraded or not.

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# Annexes

## Annex 1. Methodology for the Correlates of Upgrading

In order to investigate correlates contributing to the upgrading at the firm level and at the worker level, the study employed logit model. The logit model (also known as logistic model) predicts the probability of a binary outcome variable. There are two outcome variables in the model, economic upgrading and social upgrading which can take only two values (either upgraded or not upgraded). The prediction of the log odds is based on the predictors. Firm level predictors are sector type, age of the firm, size of the firm, types of ownership, firm growth and sell to FDI firm whereas the worker level predictors are age, sex, sector type, vocational training and above, work experience, job position and migration status. The regression generates a logistic curve, which is limited to values between 0 and 1. The logit function converts log-odds to probability.

$$\text{logit}(\pi_i) = x_i' \beta$$

where  $x_i$  is a vector of correlates and  $\beta$  is a vector of regression coefficients.  $\beta$  represents the change in the logit of the probability associated with a unit change in a particular predictor holding all other predictors constant. The left-hand-side of the regression equation is a logit rather than a mean as in linear models.

## Annex 1 Survey sample

### a. Worker survey

Table 17

#### Sectoral Distribution of Workers

	Freq.	Percent	Cum.
Apparel firms	268	67	67
Electronics firms	132	33	100
Total	400	100	

Table 18

**Number of Surveyed Workers by Sector and Gender**

	Sector		Total
	Apparel	Electronics	
Female workers	168	74	242
Male workers	100	58	158
<b>Total</b>	<b>268</b>	<b>132</b>	<b>400</b>

Table 19

**Number of Surveyed Workers by Work Types**

	Sector		Total
	Apparel	Electronics	
Workers in Production line	121	38	159
Technicians	74	51	125
Managers	73	43	116
<b>Total</b>	<b>268</b>	<b>132</b>	<b>400</b>

**b. Firm survey**

Table 20

**Sectoral Distribution of Surveyed Firms**

	Freq.	Percent
Apparel	108	67.5
Electronics	52	32.5
<b>Total</b>	<b>160</b>	<b>100</b>

Table 21

**Number of Firms by Employment Size**

Size group	Apparel	Electronics	Total
Under 50 workers	3	6	9
50 – 300 workers	23	17	40
300 – 1000 workers	47	12	59
Over 1000 workers	35	17	52
<b>Total</b>	<b>108</b>	<b>52</b>	<b>160</b>

## Annex 2. Questionnaire Modules

There are 6 modules in the Firm questionnaire as follows.

- Module 1. Basic information (product codes, main activities, years of establishment, location (industrial park), ownership categories);
- Module 2. Employment in the last year (size by gender, by skill, wage, turnover, economic incentives, working condition, social protection);
- Module 3. Firm performance in the last year (growth rates of sale, profit, value added, export);
- Module 4. Economic upgrading in the last three years (any economic upgradings, their impacts, and costs);
- Module 5. Firm strategy toward social upgrading in the last three years (personnel strategy, skill development, training, recruitment, trade union); and
- Module 6. Forward looking perception in near future (export orientation, market perception, upgrading perception).

In the Labour questionnaire, 4 modules are designed as follows.

- Module 1. Basic information of the labour (gender, education, age, ethnicity, marital status, migration);
- Module 2. Labour's Employment (task, wage, working hour, working condition, welfare);
- Module 3. Social upgrading in the last three years (skill development, training, trade union participation); and
- Module 4. Satisfaction and forward looking perception in near future (skill, job, work mobility).

### Annex 3. Social Upgrading by Different Types of Employees

Table 22

#### Social Upgrading for Workers

	Yes + Eco. Upgrading	No + Eco. Upgrading	Yes + No Eco. Upgrading	No + No economic upgrading	All
	(1)	(2)	(3)	(4)	(5)
<b>All</b>					
Social upgrading	106	5	43	5	159
Promotion	15	96	6	42	159
Wage improvements	50	61	24	24	159
Working conditions improvements	102	9	35	13	159
<b>Process upgrading</b>					
Social upgrading	100	4	49	6	159
Promotion	14	90	7	48	159
Wage improvements	45	59	29	26	159
Working conditions improvements	96	8	41	14	159
<b>Product upgrading</b>					
Social upgrading	14	1	135	9	159
Promotion	3	12	18	126	159
Wage improvements	8	7	66	78	159
Working conditions improvements	14	1	123	21	159
<b>Functional upgrading</b>					
Social upgrading	16	0	133	10	159
Promotion	1	15	20	123	159
Wage improvements	10	6	64	79	159
Working conditions improvements	16	0	121	22	159

Source: Firm & Worker Survey data (CAF-JJN 2017)

Table 23

**Social Upgrading for Technicians**

	Yes + Eco. Upgrading	No + Eco. Upgrading	Yes + No Eco. Upgrading	No + No economic upgrading	All
	(1)	(2)	(3)	(4)	(5)
<b>All</b>					
Social upgrading	59	27	24	15	125
Promotion	25	61	7	32	125
Wage improvements	48	38	22	17	125
<b>Process upgrading</b>					
Social upgrading	54	25	29	17	125
Promotion	24	55	8	38	125
Wage improvements	44	35	26	20	125
<b>Product upgrading</b>					
Social upgrading	8	4	75	38	125
Promotion	2	10	30	83	125
Wage improvements	8	4	62	51	125
<b>Functional upgrading</b>					
Social upgrading	16	3	67	39	125
Promotion	7	12	25	81	125
Wage improvements	13	6	57	49	125

Source: Firm & Worker Survey data (CAF-JJN 2017)



Table 24

**Social Upgrading for Managers**

	Yes + Eco. Upgrading	No + Eco. Upgrading	Yes + No Eco. Upgrading	No + No economic upgrading	All
	(1)	(2)	(3)	(4)	(5)
<b>All</b>					
Social upgrading	48	31	21	16	116
Promotion	16	63	2	35	116
Wage improvements	40	39	20	17	116
<b>Process upgrading</b>					
Social upgrading	46	30	23	17	116
Promotion	15	61	3	37	116
Wage improvements	38	38	22	18	116
<b>Product upgrading</b>					
Social upgrading	7	2	62	45	116
Promotion	2	7	16	91	116
Wage improvements	6	3	54	53	116
<b>Functional upgrading</b>					
Social upgrading	11	3	58	44	116
Promotion	3	11	15	87	116
Wage improvements	9	5	51	51	116

Source: Firm & Worker Survey data (CAF-JJN 2017)

#### Annex 4. Correlates of Social Upgrading for Technicians and Managers only

	Model 12	Model 13
	Better position	Wage increase
Economic upgrading	0.994**	295.1
	-2.34	-0.71
Apparel	-0.631	-793.6*
	(-1.63)	(-1.82)
Age of the firm	-0.127***	66.61
	(-2.66)	-1.57
Vocational training and above	-0.953**	-1017.7**
	(-2.28)	(-2.04)
Male	-0.084	-71.73
	(-0.22)	(-0.18)
Related experience	0.0387	-70.18
	-0.82	(-1.62)
Technician	0.343	-681.9*
	-0.92	(-1.67)
Local resident	0.143	428.6
	-0.41	-1.1
_cons	2.703*	2118.1
	-1.94	-1.59
N	241	239

t statistics in parentheses

\* p<0.10, \*\* p<0.05, \*\*\* p<0.010



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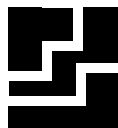
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