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A Survey of Firms in Viet Nam**

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The Internationalisation of Firms and Management Practices: A Survey of Firms in Viet Nam*

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Abstract

This study examines the role of management practices in the internationalisation of domestic firms through directly exporting and/or supplying to local affiliates of multinationals. An original survey of manufacturing firms in Viet Nam was conducted, investigating their management practices such as human resource management and internationalisation status. The survey results shed light on similarities and dissimilarities among firms in several dimensions of management practices. Findings reveal that internationalised firms tended to be more enthusiastic about the formal training of production workers, the modernisation of production and operation, and product and process innovation. Differences in skills and experience requirements for newly employed managers were less recognizable, but internationalised firms tended to have managers who studied overseas. Furthermore, the use of public support to employee training, teamwork in production, and unionisation of employees did not show a significant difference between internationalised and non-internationalised firms.

Keywords: Management practices, Firm heterogeneity, Global value chains

JEL classification: F23, F61, M11, M50

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1. Introduction

It is well known that only a small fraction of firms supply products to foreign markets and such firms tend to be more productive than those that serve only domestic markets. Intrinsically productive firms would self-select to enter foreign markets (Bernard and Jensen, 1999). However, improved foreign market access may encourage firms to invest in productivity-enhancement measures and enter foreign markets. Experience gained in the foreign market may further improve firms' productivity (learning-by-exporting). Recent empirical studies have investigated such dynamic aspects of firms' internationalisation and found complementarities between firms' internationalisation (typically export) and their productivity-enhancing activities (Aw et al., 2007, 2011 for research and development; Bustos, 2011, 2007 for technology adoption; Verhoogen, 2008 for quality upgrading; and Lileeva and Trefler, 2010 for product innovation and technology adoption).

It is also known that 'good' management practices improve firms' productivity or profitability (Syverson, 2011). Thus, firms with 'good' management practices tend to be internationalised. Bloom and Van Reenen (2007) surveyed the management practices of firms from multiple countries and found that firms with 'good' management practices were likely to be exporters. However, the correlation between 'good' management practices and firms' internationalisation leads to at least three fundamental questions. First, among various management practices, what are the most relevant to firms' internationalisation? Management practices cover a broad range of firms' activities, from production techniques to human resource management (HRM). Also,

literature on management practices and firms' productivity indicate that the positive effects of 'good' management practices on productivity may be conditional (e.g. Black and Lynch, 2001). Second, does the mode of internationalisation affect what appropriate management practices are? Firms' internationalisation may include direct exports, foreign direct investment (FDI), and foreign outsourcing. Further, providing intermediate goods to local affiliates of multinational enterprises (MNEs) can be regarded as a mode of internationalisation. The last mode is especially important to developing countries that host FDI from developed countries. Thus, identifying management practices that are particularly important for the last mode could yield important insights on developing countries' participation in global value chains (GVCs). Third, it is conceivable that many management practices are in the public domain, unlike new products and technology. If 'good' management practices are substantial determinants of firms' productivity or profitability, why is it that only a fraction of firms are successfully internationalised? We believe that it is important to examine how 'good' management practices could prevail among firms in developing countries.

Considering these questions, this study examined the adoption of management practices among firms that would face increasing opportunities for exports and business transactions with foreign firms. We conducted an original survey of manufacturing firms in Viet Nam. Among various management practices, we highlighted those related to employment for the following reasons. First, HRM directly affects employees' motivation. HRM may also play an important role in the implementation of other management practices such as the adoption of modern manufacturing systems. Second,

the examination of HRM may clarify the microeconomic structure of the effects of globalisation on labour market performances such as wages, skills demand, and labour productivity.

More concretely, our survey covered the following HRM issues:

1. What skills and experiences do firms participating in GVCs require of newly employed managers and workers?
2. How do GVC-participating firms incentivise their managers and workers? Are performance-related payments and formal appraisal systems adopted differently between firms that participate in GVC and those that do not?
3. How do GVC-participating firms train their managers and workers?
4. To what extent do GVC-participating firms allow their employees to participate in decision making?

The survey also collected information about more general management practices such as goal setting, performance evaluation, and feedback to the operation. The survey also collected information on the background of chief executive officers (CEOs), including their educational attainment, work experiences, and family ties. These CEOs' characteristics could affect the adoption of management practices.

The study's major findings can be summarised as follows. With respect to the operation of firms, we found both similarities and dissimilarities between domestic and foreign firms in several dimensions.¹ First, as the trade literature on heterogeneous

¹ Following the definition of foreign direct investment by the International Monetary Fund, we define foreign firms as firms with 10% or more of foreign ownership in a firm's capital.

firms suggest, foreign firms had significantly larger sales and expenses than domestic firms. The superiority of foreign firms was also evident in other financial figures such as sales expenses, general and administrative expenses, wages, fixed assets, and energy expenses. Second, while substantial proportions of domestic and foreign firms engaged in direct exports and supply to other foreign firms, only a small proportion of these firms maintained subsidiaries abroad. Third, in terms of the share of production workers, managers, and technicians to total employees, there were no substantial differences between domestic and foreign firms. About 90% of the employees were production workers. The share of female employees in each job category was similar between domestic and foreign firms. It tended to decrease from about 55% in production workers to about 20% in managers. Fourth, a large percentage of production workers from both domestic and foreign firms had attained high school education. A smaller percentage of production workers had attained formal education of up to college and/or university. By contrast, about 83% of managers of domestic firms attained college/university education and about 88% for foreign firms.

With respect to management practices, we found similarities and dissimilarities between domestic GVC firms, non-GVC firms, and foreign firms in several dimensions. First, in terms of the skills and experience requirements for *newly employed managers*, all the three categories of firms did not generally show substantial differences in educational attainment. Almost all the firms required newly recruited managers with higher education (college level or above). However, more foreign firms required foreign language skills and past work experience in foreign firms. About 50% of foreign firms required foreign language skills, whereas less than 30% of domestic firms

required this skill. Also, about 15% of foreign firms required past work experience in foreign firms while a much smaller fraction of domestic firms did. These tendencies also hold for the distribution of skills and experiences for *existing managers*. However, it should be noted that domestic firms that supplied to local MNE affiliates tended to have more managers with foreign experience (i.e. study abroad).

Second, in terms of the adoption of the performance incentive pay system, there was little difference among domestic firms regardless of their GVC participation status. However, a larger fraction of the foreign firms determined wages and bonuses based on the performance of their employees. A higher fraction of domestic firms supplying to local MNEs determined wages and bonuses to production workers based on performance and/or formal appraisal. No large difference was observed in the promotion systems for both production workers and managers.

Third, a higher fraction of domestic exporters had production-worker training programs than domestic non-exporters. Domestic firms that supplied to local MNE affiliates were more likely to provide on-the-job training for production workers than domestic firms that did not supply to local MNE affiliates.

Finally, domestic firms that supplied to local MNE affiliates were more likely to have their production workers involved in teams for work or problem-solving activities than domestic firms that did not supply local MNE affiliates.

This paper is related to at least three strands of literature. First, our study is directly related to management practices and firms' productivity. The study of Bloom and Van Reenen (2007) is closest to this paper. Bloom and Van Reenen (2007) pioneered the collection of data on management practices at the firm level from multiple countries

and showed that better management practices are positively correlated to firms' productivity. Their survey asked a comprehensive set of questions about management practices and aggregated them to a single index of management practices. Although the sample size of our survey is much smaller than theirs, a richer classification of internationalisation is feasible in our survey. More concretely, we compared management practices across direct exporters, local firms that supplied to MNEs' local affiliates, and foreign firms.

Second, this paper is related to the heterogeneous-firm trade literature. As discussed earlier, recent empirical studies have examined the evolution of firms' productivity over time in open economy environments. However, management practices are rarely investigated as a source of productivity gains in the literature.² This study attempts to complement the preceding studies by looking into the management practices of both GVC-participator firms and non-GVC participator firms.

Third, this study is related to the literature on FDI spillovers. Many observers argue that FDI brings positive spillover effects to host countries such as technology transfers from MNEs' local affiliates to local firms in the backward linkage. For example, Blalock and Gertler (2008), Javorcik (2004), and Liu (2008) empirically showed such spillovers exist. More recently, Newman et al. (2015) reported that Vietnamese firms could obtain productivity gains through direct transfers of knowledge and technology from MNEs' local affiliates through business transactions. Although our paper does not identify the causal relationship between management practices and GVC participation, it shows that management practices adopted by local firms supplying to MNE affiliates

² Bloom and Van Reenen (2007) is an exception. They show that firms with better management practices are likely to have high productivity and export.

tend to be similar to those adopted by the MNE affiliates. Thus, our study suggests the existence of spillovers from FDIs in terms of management practices.

The remainder of this paper is organised as follows. Section 2 explains the survey method. Section 3 describes the survey data. Sections 4 and 5 describe firm characteristics and management practices revealed by the survey data. Section 6 concludes the study.

2. Survey Method

2.1 Survey Questions

Our survey collected information on various management practices of Vietnamese manufacturing firms, along with basic data on their characteristics (e.g. ownership) and performance (e.g. sales, employment, and the mode of internationalisation). Vietnamese firms are appropriate for our research goal of investigating the correlation between the internationalisation of firms and management practices because of the presence of a series of trade liberalisation policies in Viet Nam such as the bilateral investment agreement between Japan and Viet Nam enacted in 2004, the World Trade Organization accession in 2007, and the Japan-Viet Nam Economic Partnership Agreement enacted in 2009. We focus on some manufacturing sectors; textile and garment sectors in 17-19 of the two-digit code of International Standard Industry Classification Revision 3 (ISIC Rev. 3, electronics sectors in 30-33 codes, and transportation equipment sector in 34-35 codes.

The survey questions were categorised into the following four sections: (i) background information on firms, (ii) human resource management, (iii) organisation, and (iv) operations and its implementation. Appendix Table 1 contains the summary list of the survey questions. The background information section collected data on the basic information of firms such as ownership, size and characteristics of employees, and mode of internationalisation. In addition to direct exports, the mode of internationalisation included ‘supply of products to MNEs’ local affiliates’ to capture the effects through the backward linkage in GVCs.

The HRM section included detailed information about the education and work experiences of managers and production workers. We expected that GVC firms would attempt to hire production workers and managers with higher education levels. In particular, we conjectured that managers’ work experiences in MNEs were crucial for indigenous firms to participate in GVCs.

In addition, the HRM section included questions about performance-related pay and appraisal systems. The status of the adoption of performance-related pay was particularly interesting because some studies claim that performance-related pay does not necessarily enhance firms’ productivity and profitability (e.g. Frick, Goetzen, and Simmons, 2013).

In the organisation section, we asked whether firms increase or decrease the number of organisational layers in the production department. The results in prior studies are mixed regarding a relationship between firms’ internationalisation and organisational layers. The section on operation and its implementation covered other typical questions on management practices such as the number of targeted indicators, the frequency of

monitoring and reviewing targets, and the time frame of targets (i.e. short-term and/or long-term targets). These questions are based on Bloom and Van Reenen (2007). Following Bloom and Van Reenen (2007), we conjectured that if firms set more performance indicators, monitor and review them more frequently, and combine short- and long-term targets, then they should perform better and be more internationalised by either direct exports or business transactions with MNEs' local affiliates.

2.2 Conduct of the Survey

To conduct the survey, we obtained cooperation from the Central Institute for Economic Management, a Vietnamese research institute. We carefully designed the sampling of the surveyed firms to include domestic firms that did not directly export or supply products to MNEs' local affiliates (non-GVC firms), those that directly exported and/or supplied products to MNEs' local affiliates (GVC firms), and MNEs' local affiliates (foreign firms).

Because our survey questions covered a broad range of management practices including HRM, we conducted the survey through face-to-face interviews. Furthermore, to obtain accurate answers as much as possible, we interviewed multiple managers from human resource departments (personnel affairs), accounting, and sales. Researchers and surveyors from CIEM formed interview teams (normally 2-3 persons per team) and interviewed respondents face-to-face for about two hours per firm. Upon the request of some firms, the questionnaire was sent in advance for them to prepare for the interview. A series of interviews were conducted in January and February of 2016, and a total of 235 firms were interviewed.

3. Data

We use survey data on Vietnamese manufacturing firms as described in the previous section. We received responses to our questionnaire from 198 firms.³ These firms were located in four major areas in the Red River Delta of northern Viet Nam: Hanoi (about 41% of the respondent firms), Vinh Phuc Province (about 35%), Hai Phong (about 17%), and Hung Yen Province (about 7%). These firms fall into three major categories of the manufacturing industry: textile and garments (about 27% of the respondent firms), electronics (about 35%), and transportation equipment (about 38%). The respondent firms also came from various corporate structures (types of business registration) as shown in Table 1.

Table 1. Types of Business Registration of Respondent Firms (as of 2014)

	Limited Liability	Joint Stock	FDI	Privately Owned	N.A.	Total
No. of firms	76	33	76	3	10	198

FDI = foreign direct investment, N.A. = not applicable.

Note: Two state-owned enterprises are excluded.

Source: Authors' calculation based on the survey data in Viet Nam.

In this study, we focus on differences between firms that participate in GVCs and those that do not. We first separate the respondent firms into two groups: domestic firms and foreign firms. This category is chosen because foreign firms are likely to participate in GVCs. Following the IMF definition of FDI, we define foreign firms as firms with

³ We have also obtained responses from two state-owned enterprises which we excluded from our sample for the analysis.

10% or more foreign ownership in terms of capital holding. However, most foreign firms in the survey were 100% foreign-owned, and all the domestic firms were 100% domestic-owned.⁴ In addition, we separate the domestic firms into GVC-participating firms and GVC non-participating firms. Specifically, we focus on whether domestic firm supplies its products to other foreign firms in Viet Nam ('GVC supplier') or not ('GVC non-supplier'). Additionally, we examine whether domestic firm directly exports its products abroad ('GVC exporters') or not ('GVC non-exporters'). Thus, we consider that domestic firms can participate in GVCs by exporting or supplying to other foreign firms.

Table 2 shows the number of reported firms categorised in each of these groups. Since not all the 198 firms provided information on their ownership or GVC participation, our analysis was limited to the 127 firms for 2009 and 193 firms for 2014.⁵ The sample size was different between the two data points (2009 and 2014) and this was mainly because, as shown in Table 3, a significant portion of the 198 respondent firms were established after 2009 and did not have information for 2009.

Table 2. Categorisation of Sample Firms

	Domestic Firms				Domestic Firms Total	Foreign Firms	Total
	Non-suppliers	GVC Suppliers	Non-exporters	GVC Exporters			
Year 2009	39	17	45	11	56	71	127
Year 2014	34	35	46	23	69	124	193

GVC = global value chain.

Note: The figures indicate the number of firms falling into each category.

Source: Authors' calculation based on the survey data in Viet Nam.

⁴ Several reported firms had between 30% and 90% of foreign ownership.

⁵ Not all these 193 firms (127 for 2009) responded to every question in the questionnaire and the number of respondents widely varied depending on the question.

Table 3. Ages of Reported Firms (by year of establishment)

	On or Before 2009	After 2009	Total
No. of firms	130	68	198

Source: Authors' calculation based on the survey data in Viet Nam.

4. Similarities and Dissimilarities between Domestic and Foreign Firms

Financial characteristics

Table 4 shows the financial characteristics of domestic and foreign firms. We report the mean of each variable across firm samples and all the figures are measured in billions of Vietnamese dong (D). In 2014, domestic and foreign firms had average sales of D179.5 billion and D2,853 billion, respectively. The cost of goods sold on average was D91.3 billion for domestic firms and D1,447 billion for foreign firms. The figures show that foreign firms had significantly larger sales and expenses than domestic firms. This pattern is also supported by other financial figures, including sales expenses, general and administrative expenses, wages, fixed assets, and energy expenses.

Table 4. Financial Characteristics

Variable	Domestic Firms		Foreign Firms		Total	
	2009	2014	2009	2014	2009	2014
Total sales	52.7	179.5	2,290.3	2,853.4	1,209.2	1,830.0
Sales per employee	0.2	0.7	3.4	4.7	2.4	3.8
Cost of goods sold	44.3	91.3	1,052.6	1,447.6	560.7	926.6
Sales expenses	1.6	2.5	66.0	41.9	34.7	26.5
General and administrative expenses	4.5	7.8	135.0	78.1	68.9	49.7
Total wage	4.8	7.1	20.7	38.2	10.0	18.8
Wage per employee	0.02	0.03	0.03	0.06	0.02	0.04
Total fixed asset	31.8	49.8	133.1	233.6	65.6	122.9
Energy expense	1.7	2.9	6.7	7.6	4.3	5.8

Note: Figures are the mean of corresponding variable in billions of Viet Nam dong.

Source: Authors' calculation based on the survey data in Viet Nam.

Internationalisation

In 2014, 32.4% of domestic firms and 37.2% of foreign firms were engaged in direct export. In terms of FDI, less than 2% of domestic and foreign firms maintained foreign subsidiaries in other foreign markets in 2014. The percentage of firms with a joint venture was 5.6% for domestic firms and 10.9% for foreign firms in 2014, implying that foreign firms were more likely to form joint ventures than domestic firms. Regarding the transaction relationship with foreign firms in Viet Nam, 50.7% of domestic firms supplied their products to foreign firms in Viet Nam whereas 69.8% of foreign firms did. Finally, 5.6% of domestic firms imported final goods in 2014 while 5.4% of foreign firms did. By contrast, 53.5% of domestic firms imported intermediate inputs and/or capital goods while 14.7% of foreign firms did.

In sum, our sample shows that a large proportion of domestic and foreign firms engaged in direct export and supplied to other foreign firms in Viet Nam. Only a small proportion of them maintained foreign subsidiaries in other foreign markets. Although both domestic and foreign firms had the small tendency to import final goods, more than half of domestic firms imported intermediate inputs and/or capital goods. In addition, foreign firms were more likely to establish a joint venture than domestic firms.

Table 5. Internationalisation, %

Variable	Domestic Firms		Foreign Firms		Total	
	2009	2014	2009	2014	2009	2014
Direct export	21.4	32.4	46.6	37.2	35.7	35.5
Foreign subsidiaries abroad	0.0	1.4	1.4	0.8	0.8	1.0
Joint venture	3.6	5.6	13.7	10.9	9.3	9.0
Supply product to foreign firms in Viet Nam	32.1	50.7	57.5	69.8	46.5	63.0
Import final goods	3.6	5.6	8.2	5.4	6.2	5.5
Import intermediate inputs/capital goods	50.0	53.5	16.4	14.7	31.0	28.5

Note: Figures show the mean of the variable that takes on unity if yes, and zero otherwise.

Source: Authors' calculation based on the survey data in Viet Nam.

Location of plants/subsidiaries

The previous result shows that there were some firms with foreign subsidiaries in other foreign markets. To elaborate on this result, Table 6 presents the location of plants/subsidiaries, with the figures indicating the average number of plants/subsidiaries in the corresponding location. In 2014, some domestic firms indicated the presence of foreign subsidiaries, but the information on their location was missing in our survey data. On the other hand, some foreign firms showed the presence of foreign plants/subsidiaries in China, Japan, and in countries in the Association of

Southeast Asian Nations. No foreign firm in the sample appeared to maintain foreign plants/subsidiaries in the United States of America or the European Union. Thus, majority of the sample firms maintained only domestic plants and only a few foreign firms had foreign plants in a few foreign markets.

Table 6. Location of Plants/Subsidiaries

Variable	Domestic Firms		Foreign Firms		Total	
	2009	2014	2009	2014	2009	2014
Domestic	0.68	1.04	1.07	1.14	0.90	1.11
Foreign	0	0.03	0.17	0.17	0.10	0.12
China	0	0	0.07	0.05	0.04	0.03
Japan	0	0.02	0.04	0.06	0.02	0.05
US	0	0	0	0	0	0
EU	0	0	0	0	0	0
ASEAN	0	0.02	0.03	0.02	0.02	0.02
Other	0	0.00	0.04	0.04	0.02	0.03

ASEAN = Association of Southeast Asian Nations, EU = European Union, US = United States.

Note: Figures show the average number of plants/subsidiaries.

Source: Authors' calculation based on the survey data in Viet Nam.

Composition of employees

We turn to describe the composition of employees of the domestic and foreign firms. Table 7 shows the average number and shares of employees across a wide range of employee characteristics. In 2014, domestic firms had 265 employees whereas foreign firms had 604 employees. The number of production workers was 234 for domestic firms and 545 for foreign firms. On the other hand, the number of non-production workers was 26.4 for domestic firms and 52.0 for foreign firms. In addition, the number of managers was 8.4 for domestic firms and 26.7 for foreign firms. Consistent with the general observation on organisational composition, there were a larger number of production-level workers and a smaller number of management-level workers. The

share of female employees decreased from lower to higher positions within the organisational structure for both domestic and foreign firms. Finally, the number of temporary workers was significantly small for both domestic and foreign firms.

Table 7. Composition of Employees

Variable	Domestic Firms		Foreign Firms		Total	
	2009	2014	2009	2014	2009	2014
No. of employees	278.3	265.5	679.3	604.0	508.0	483.9
Female share, %	48.9	45.9	45.1	45.4	46.8	45.6
No. of production workers	223.0	234.0	606.3	545.0	434.3	436.0
Female share, %	45.8	55.8	43.4	54.4	44.7	55.0
No. of non-production workers	29.2	26.4	77.7	52.0	55.9	43.0
Female share, %	49.2	41.9	37.1	35.2	41.4	36.9
No. of managers	7.4	8.4	28.6	26.7	18.7	20.1
Female share, %	19.7	19.9	16.4	18.1	17.5	18.5
No. of technicians	16.7	17.4	36.7	22.5	25.0	20.1
Percentage share of temporary production workers	5.6	5.1	4.4	2.1	4.9	3.4
Percentage share of temporary non-production workers	1.8	1.7	0.0	0.1	0.8	0.8

Source: Authors' calculation based on the survey data in Viet Nam.

Education of employees

Table 8 shows the average percentage of employees attaining formal education. In 2014, 69.3% of production workers attained high-school education for domestic firms and 73.7% for foreign firms. Thus, the largest share of production workers attained high-school education for both domestic and foreign firms. A smaller percentage of production workers attained formal education of up to college and/or university. By contrast, 83.4% of managers attained college/university education for domestic firms and 88.3% for foreign firms. Thus, education level tended to increase for the upper level of the organisational structure.

Table 8. Education of Employees, %

Variable	Domestic Firms		Foreign Firms		Total	
	2009	2014	2009	2014	2009	2014
Production workers						
Primary	0.0	0.0	0.0	0.0	0.0	0.0
Secondary	5.3	5.3	7.5	6.5	6.7	6.1
High school	63.4	69.3	70.4	73.7	67.8	72.2
Vocational training	16.7	15.2	6.9	8.8	10.5	11.1
College/university	9.6	10.4	9.1	9.9	9.3	10.1
Managers						
Primary	1.2	1.5	0.0	0.0	0.5	0.5
Secondary	0.0	0.0	0.3	0.3	0.2	0.2
High school	0.7	0.4	1.4	1.9	1.1	1.3
Vocational training	20.0	17.0	11.1	9.0	14.6	11.8
College/university	78.3	83.4	82.3	88.3	80.7	86.6

Note: Figures show the percentage of people completing the corresponding educational level.

Source: Authors' calculation based on the survey data in Viet Nam.

CEO characteristics

Table 9 presents the characteristics of CEOs. In 2014, 30% of domestic firms and 18% of foreign firms had CEOs who were family members. Majority of the top managers attained college/university education for both domestic and foreign firms. In 2014, 31% of domestic firms and 42% for foreign firms had CEOs who had foreign-study experience. Fifty-nine percent of domestic firms and 46% for foreign firms had CEOs with foreign language skills. About 54% of domestic firms and 24% of foreign firms had CEOs who had previous work experience at another firm. By contrast, 23% of domestic firms and 60% of foreign firms had CEOs that had previous work experience in multinational enterprises.

Table 9. CEO Characteristics, %

Variable	Domestic Firms		Foreign Firms		Total	
	2009	2014	2009	2014	2009	2014
CEO is a family member	45.5	32.4	9.6	11.7	25.0	19.1
Education						
Primary	0.0	0.0	0.0	0.0	0.0	0.0
Secondary	0.0	2.9	0.0	1.6	0.0	2.0
High school	0.0	2.8	2.7	6.2	1.6	5.0
Vocational training	18.5	11.3	11.3	9.3	14.4	10.0
College/university	75.0	85.9	86.3	86.8	81.4	86.5
Studying abroad	17.9	31.4	38.7	42.2	29.8	38.4
Foreign language skill	19.0	58.6	40.0	45.7	30.8	50.3
Work experience at another firm	31.0	53.5	28.9	24.2	29.9	34.7
Work experience at MNE	11.9	22.5	42.1	60.5	28.9	47.0

CEO = chief executive officer, MNE = multinational enterprise.

Note: Figures show the mean of the variable that takes on unity if yes, and zero otherwise

Source: Authors' calculation based on the survey data in Viet Nam.

5. Similarities and Dissimilarities in Management Practices

We now focus on the HRM practices and operations of firms. Our main question was whether there was any difference in the managerial and operational practices between firms that participated or were involved in GVCs and those that did not. As mentioned earlier, we separated the respondent firms into three groups: foreign firms, domestic GVC participants (firms that directly exported their products abroad, firms that supplied their products to the affiliates of MNEs, or branches/affiliates of MNEs that were locally operating in Viet Nam), and domestic firms not participating in GVCs (GVC non-participants). We then compared the responses to questions in our survey questionnaire concerning the managerial and operational practices between or among these groups of respondent firms.

In the following analysis, we used the 2014 information on the surveyed firms only. As described earlier, more than a third of the surveyed firms were established after 2009 and they provided us information as of 2014 only (there were also some firms that did not provide information as of 2009). Therefore, to maintain the size of the effective sample as large as possible, we compared across the groups of firms based on their 2014 information. Furthermore, it should be noted that the number of respondents varied depending on questions (and it was sometimes small). Thus, we showed the number of respondent firms to each question or item in Tables 10 through 19.

Skills and Experiences Required of Managers

Table 10 presents the summary of the responses of the firms to a series of questions concerning skills and experiences that firms required of managers they recruit. It is surprising that the data indicated no significant difference between the GVC participants (i.e. foreign firms and domestic firms that directly exported or supplied to local MNE affiliates) and non-participants in the required level of education, skills, and experience. Almost all the firms required newly recruited managers to have a degree in higher education (college-level or above) and some previous work experience of more than 2 years on average. The data indicated noticeable differences between the domestic and foreign firms in language skills and previous work experience in foreign firms. More than a half of the foreign firms required foreign language skills of newly hired managers while less than 30% of the domestic firms required this skill. Also, 15% of the foreign firms required newly recruited managers to have a previous work experience in foreign firms while a much smaller fraction of the domestic firms did. Both differences were understandable considering the ‘foreignness’ of the foreign firms.

Table 10. Skills and Experience Required of Newly Hired Managers

Variable	Suppliers to MNEs		Exporters		Domestic	Foreign
	Non-GVC	GVC	Non-GVC	GVC	Total	Firms
Level of Education						
1. Lower secondary	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2. Upper secondary	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
3. Vocational training	0.0%	10.0%	5.9%	0.0%	5.3%	1.3%
4. College/university or higher	100.0%	90.0%	94.1%	100.0%	94.7%	98.8%
no. of respondents	9	10	17	2	19	80
Specific Skills/Experience Required?						
Special degree (e.g., MBA)	11.1%	0.0%	0.0%	25.0%	4.8%	4.3%
Experience in studying abroad	0.0%	8.3%	5.9%	0.0%	4.8%	7.5%
Skills in foreign languages	55.6%	8.3%	29.4%	25.0%	28.6%	51.6%
Skills on international business	0.0%	8.3%	5.9%	0.0%	4.8%	7.5%
Other skills	33.3%	16.7%	17.6%	50.0%	23.8%	6.5%
no. of respondents	9	12	17	4	21	93
Previous Work Experience Required?						
1. Yes	100.0%	100.0%	100.0%	100.0%	100.0%	94.3%
Required years of work*	2.8	2.1	2.5	2.3	2.4	2.2
Experience in foreign firms	12.5%	0.0%	7.1%	0.0%	5.6%	14.9%
2. No	0.0%	0.0%	0.0%	0.0%	0.0%	5.7%
no. of respondents	8	10	14	4	18	87

GVC = global value chain, MBA = Master of Business Administration, MNEs = multinational enterprises.

Notes: Figures show the fraction of the respondent firms to which each item applies, except for those for the question indicated with an asterisk.

* The figures show the average value of the variable for each group of respondent firms.

Source: Authors' calculation based on the survey data in Viet Nam.

Table 11 summarises the responses to the set of questions regarding the actual foreign experience of the existing managers working at the surveyed firms. The data indicated that the foreign firms were more likely to have managers with foreign experience in work or study than the domestic firms. At both domestic and foreign firms, however, managers with work experience at other MNEs were very few. The data indicated no difference between the GVC participants and non-participants among the domestic firms, but it was noticeable that nearly half of the domestic suppliers to local MNE affiliates had managers who studied abroad while the non-suppliers had none. This might suggest that those managers who studied abroad in the GVC suppliers contributed to the firms' establishment of network with local MNE affiliates utilising

their foreign experience and possibly human network.

Table 11. Past Foreign Experience of Existing Managers

Variable	Suppliers to MNEs		Exporters		Domestic Total	Foreign Firms
	Non-GVC	GVC	Non-GVC	GVC		
Any Manager Worked at a MNE Before?						
1. Yes	0.0%	16.7%	11.8%	0.0%	9.5%	8.6%
2. No	100.0%	83.3%	88.2%	100.0%	90.5%	91.4%
Any Manager Worked Abroad Before?						
1. Yes	0.0%	8.3%	5.9%	0.0%	4.8%	10.8%
2. No	100.0%	91.7%	94.1%	100.0%	95.2%	89.2%
Any Manager Studied Abroad Before?						
1. Yes	0.0%	41.7%	23.5%	25.0%	23.8%	45.2%
2. No	100.0%	58.3%	76.5%	75.0%	76.2%	54.8%
no. of respondents	9	12	17	4	21	93

GVC = global value chain, MNEs = multinational enterprises.

Note: Figures show the fraction of the respondent firms to which each item applies.

Source: Authors' calculation based on the survey data in Viet Nam.

Performance Payment and Formal Appraisal

Table 12 summarises the responses to a series of questions regarding performance pay and other benefit systems of the respondent firms. First, the data indicated that the firms were more likely to have introduced performance-pay systems for production workers than for managers, regardless of whether they were participating or not participating in GVCs. No major difference was observed between the GVC participants and non-participants in terms of performance-pay systems, although there were some noticeable things. One was that a larger fraction of the foreign firms determined wages and bonuses based on the performance of their employees compared to the domestic firms. Another was that the fraction of the firms that determined wages and bonuses to production workers based on performance and/or formal appraisal was higher for the domestic firms supplying to local MNEs than their non-supplying counterparts. The other was that the domestic exporters were more likely to determine pays to their employees based on formal appraisal than the non-exporters.

No major difference was observed in the data in terms of fringe benefits between the GVC-participating and non-participating firms. Almost all the firms provided meal benefits to their employees, and a significant fraction of the firms also had housing and transportation support available to their employees (but not much of the other types of benefits). Although the difference was not very significant, the data indicated that the foreign firms were likely to offer a richer menu of fringe benefits to their employees (paid leave, in particular) than the domestic firms.

Table 12. Compensation and Benefit Systems

Variable	Suppliers to MNEs		Exporters		Domestic	Foreign
	Non-GVC	GVC	Non-GVC	GVC	Total	Firms
Wages & Bonuses Conditional on Performance?						
Yes, for production workers	44.4%	66.7%	58.8%	50.0%	57.1%	71.0%
Yes, for managers	44.4%	16.7%	29.4%	25.0%	28.6%	44.1%
no. of respondents	9	12	17	4	21	93
Wages & Bonuses Based on Formal Appraisal?						
Yes, for production workers	44.4%	91.7%	64.7%	100.0%	71.4%	73.1%
Yes, for managers	44.4%	33.3%	35.3%	50.0%	38.1%	46.2%
no. of respondents	9	12	17	4	21	93
Profit Sharing Applied To Reward High Performance?						
Yes, for production workers	33.3%	58.3%	47.1%	50.0%	47.6%	37.6%
Yes, for managers	33.3%	25.0%	29.4%	25.0%	28.6%	24.7%
no. of respondents	9	12	17	4	21	93
Fringe Benefits Available to Employees						
Meal allowances or canteen	100.0%	100.0%	100.0%	100.0%	100.0%	92.5%
Housing allowances or dormitory	33.3%	50.0%	47.1%	25.0%	42.9%	51.6%
Transportation or transportation allowances	33.3%	83.3%	58.8%	75.0%	61.9%	62.4%
Paid leave, more generous than legal requirements	0.0%	0.0%	0.0%	0.0%	0.0%	9.7%
Maternity leave, more generous than legal requirements	0.0%	8.3%	5.9%	0.0%	4.8%	7.5%
Pension, employer's contribution higher than legal	0.0%	8.3%	5.9%	0.0%	4.8%	2.2%
Other fringe benefits	11.1%	0.0%	5.9%	0.0%	4.8%	5.4%
no. of respondents	9	12	17	4	21	93

GVC = global value chain, MNEs = multinational enterprises.

Note: Figures show the fraction of the respondent firms to which each item applies.

Source: Authors' calculation based on the survey data in Viet Nam.

Employee Promotion Systems

Table 13 summarises the responses to the set of questions regarding employee promotion systems of the firms. Overall, no difference was observed among the

respondent firms in terms of promotion systems for both production workers and managers, whether the firms were GVC participants (i.e. domestic vs. foreign, domestic exporters or to-MNE suppliers vs. non-exporters/non-suppliers). Around 80%–90% of the firms determined the promotion of both production workers and managers solely on their performance and ability, and another 10%–20% determined their employee promotion partly on the employees’ performance and ability. In terms of the system of employee appraisal for promotion, majority of the firms had a well-defined formal appraisal system for production workers, yet many of them did not have a well-defined appraisal system for managers. This might be because employee performance is relatively straightforward to measure for production workers but is not so for managers who are usually expected to conduct multiple complicated tasks.

Table 13. Employee Promotion Systems

Variable	Suppliers to MNEs		Exporters		Domestic	Foreign
	Non-GVC	GVC	Non-GVC	GVC	Total	Firms
Basis of Promotion						
<i>Production Workers:</i>						
1. Solely on performance & ability	77.8%	83.3%	76.5%	100.0%	81.0%	82.1%
2. Partly on factors other than performance/ability	11.1%	16.7%	17.6%	0.0%	14.3%	17.9%
3. Mainly on factors other than performance/ability	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
4. Workers are not normally promoted	11.1%	0.0%	5.9%	0.0%	4.8%	0.0%
no. of respondents	9	12	17	4	21	84
<i>Managers:</i>						
1. Solely on performance & ability	85.7%	91.7%	86.7%	100.0%	89.5%	82.9%
2. Partly on factors other than performance/ability	14.3%	8.3%	13.3%	0.0%	10.5%	17.1%
3. Mainly on factors other than performance/ability	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
4. Workers are not normally promoted	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
no. of respondents	7	12	15	4	19	76
Well-defined System of Formal Appraisal for Promotion?						
<i>Production Workers:</i>						
1. Yes	44.4%	75.0%	64.7%	50.0%	61.9%	53.8%
2. No	55.6%	25.0%	35.3%	50.0%	38.1%	46.2%
<i>Managers:</i>						
1. Yes	44.4%	25.0%	35.3%	25.0%	33.3%	24.7%
2. No	55.6%	75.0%	64.7%	75.0%	66.7%	75.3%
no. of respondents	9	12	17	4	21	93

GVC = global value chain, MNEs = multinational enterprises.

Note: Figures show the fraction of the respondent firms to which each item applies.

Source: Authors’ calculation based on the survey data in Viet Nam.

Employee Training

Table 14 summarises the responses to the set of questions concerning employee training of the firms. In terms of training of production workers, no overall difference was observed between the domestic and foreign firms. Majority (nearly 70%) of the firms in both groups conducted on-the-job training for production workers and some firms were introducing off-the-job or self-developed training in addition to or instead of on-the-job training. However, the data indicated some notable differences between the GVC participants and non-participants among the domestic firms. First, a higher fraction of the exporters had production-worker training programs in every type than the non-exporters. Second, almost all the suppliers to local MNE affiliates conducted on-the-job training to production workers while only a third of the non-suppliers did. In addition, a relatively high fraction for the self-developed training in the non-suppliers might have indicated their reliance on the self-development of their employees. Overall, the data indicated that the domestic GVC participants were more likely to be providing formal training programs to their production workers than the GVC non-participants.

The data also indicated that the GVC-participating firms were more likely to provide training to their managers than the non-GVC participants. Compared to the domestic firms, a larger fraction of the foreign firms provided formal training to managers, especially on-the-job and off-the-job programs. In addition, among the domestic firms, a (much) larger fraction of the GVC participants (exporters or suppliers to local MNE affiliates) provided formal training of various types to managers than their GVC non-participating counterparts. The data also indicated the high reliance of the domestic non-suppliers to local MNEs on their employees' self-development in

terms of training, not only for production workers but also for managers.

Finally, almost no respondent firms received public support to their employee training. This might be because such public support was (or at least during the period of inquiry) hardly available in Viet Nam.

Table 14. Employee Training

Variable	Suppliers to MNEs		Exporters		Domestic	Foreign
	Non-GVC	GVC	Non-GVC	GVC	Total	Firms
Formal Training Program for Production Workers?						
Yes, on-the-job training	33.3%	91.7%	64.7%	75.0%	66.7%	66.7%
Yes, off-the-job training	11.1%	16.7%	11.8%	25.0%	14.3%	15.1%
Yes, self-development	33.3%	0.0%	11.8%	25.0%	14.3%	33.3%
no. of respondents	9	12	17	4	21	93
Formal Training Program for Managers?						
Yes, on-the-job training	11.1%	25.0%	11.8%	50.0%	19.0%	29.0%
Yes, off-the-job training	0.0%	8.3%	0.0%	25.0%	4.8%	17.2%
Yes, self-development	44.4%	16.7%	23.5%	50.0%	28.6%	29.0%
no. of respondents	9	12	17	4	21	93
Received Any Public Support for Training?						
None	83.3%	91.7%	86.7%	100.0%	88.9%	90.3%
Subsidies (incl. tax reduction/exemption)	0.0%	8.3%	6.7%	0.0%	5.6%	1.6%
Training program offered by public entities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Training facilities operated by governments	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%
Other public support	16.7%	0.0%	6.7%	0.0%	5.6%	6.5%
no. of respondents	6	12	15	3	18	62

GVC = global value chain, MNEs = multinational enterprises.

Note: Figures show the fraction of the respondent firms to which each item applies.

Source: Authors' calculation based on the survey data in Viet Nam.

Teamwork in Production

Table 15 summarises the responses to a series of questions regarding teamwork among production workers. No difference was observed among the respondent firms regardless of their GVC-participation status. At 60%–70% of the firms' production, workers were involved in some work teams formally or informally. At a similar fraction of the firms' production, workers were rotated across jobs or tasks on the production line. An exception was the observed difference between the domestic suppliers and non-suppliers to local MNE affiliates in terms of work-team involvement. Most GVC

suppliers had their production workers involved in teams for work or problem-solving activities whereas the majority of the non-suppliers did not. Involvement in GVC through product supply may stimulate problem-sharing and teamwork on the production lines in firms.

Table 15. Teamwork in Production

Variable	Suppliers to MNEs		Exporters		Domestic	Foreign
	Non-GVC	GVC	Non-GVC	GVC	Total	Firms
Production Workers Involved in Teams or Related Problem-Solving Activities?						
1. Yes	44.4%	83.3%	64.7%	75.0%	66.7%	63.4%
2. No	55.6%	16.7%	35.3%	25.0%	33.3%	36.6%
no. of respondents	9	12	17	4	21	93
Production Workers Rotated across Jobs/Tasks?						
1. Yes	66.7%	75.0%	69.2%	75.0%	70.6%	61.3%
2. No	33.3%	25.0%	30.8%	25.0%	29.4%	38.8%
no. of respondents	9	8	13	4	17	80

GVC = global value chain, MNEs = multinational enterprises.

Note: Figures show the fraction of the respondent firms to which each item applies.

Source: Authors' calculation based on the survey data in Viet Nam.

Firm and Employee Organisations

Table 16 shows the summary of the responses to a series of organisation-related questions. The first two questions were about labour unions. Overall, no significant difference was observed between the domestic and foreign firms or between the domestic GVC participants and non-participants. The average unionisation rate was above 90% in every group, and in about a half of the firms in each group, labour unions were recognised for wage bargaining. One notable thing was that a larger fraction of the domestic exporters recognised their labour unions for wage bargaining than the other groups of domestic and foreign firms. This might be related to the fact that the unionisation rates were very high for the reported domestic exporters (the average was

almost 100%).

The last questions were about the organisation layers of firms. The data indicated that the foreign firms were more likely than the domestic firms to have increased organisation layers in both production and non-production units. This might be because the foreign firms were expanding (or trying to expand) their local business activities more actively than the domestic firms during the period of inquiry. The data showed that among the domestic firms, more than a half of the suppliers to local MNE affiliates increased their organisation layers in production units while 70% of the non-suppliers decreased or maintained layers in their production units. This could be because the GVC suppliers were demanded to increase variation in their products and thus increased layers in production units to respond. In contrast to this difference between the domestic GVC suppliers and non-suppliers, the data indicated another difference between the exporters and non-exporters of the domestic firms. A larger fraction of the exporters maintained or decreased organisation layers in their production units compared to the non-exporters. This could be because these exporters needed to narrow the range of products for product concentration or streamline the production decision-making for exporting. On the other hand, in terms of organisation layers in non-production units, no difference was observed between the GVC participants and non-participants among the domestic firms.

Table 16. Firm and Employee Organisations

Variable	Suppliers to MNEs		Exporters		Domestic	Foreign
	Non-GVC	GVC	Non-GVC	GVC	Total	Firms
Unionisation Rate	93.6	96.2	92.5	99.8	94.9	97.4
no. of respondents	32	33	43	22	65	125
Were Unions Recognised for Wage Bargaining?						
1. Yes	52.9%	48.4%	38.1%	73.9%	50.8%	48.7%
2. No	47.1%	51.6%	61.9%	26.1%	49.2%	51.3%
no. of respondents	34	31	42	23	65	113
Changes in Organisational Layers in Production Department?						
1. Increase	30.3%	53.1%	48.8%	27.3%	41.5%	72.2%
2. Decrease	3.0%	0.0%	0.0%	4.5%	1.5%	1.6%
3. Unchanged	66.7%	46.9%	51.2%	68.2%	56.9%	26.2%
no. of respondents	33	32	43	22	65	126
Changes in Organisational Layers in Non-production Department?						
1. Increase	10.3%	29.4%	15.6%	18.2%	16.1%	46.5%
2. Decrease	0.0%	0.0%	0.0%	0.0%	0.0%	4.2%
3. Unchanged	89.7%	70.6%	84.4%	81.8%	83.9%	49.3%
no. of respondents	39	17	45	11	56	71

GVC = global value chain, MNEs = multinational enterprises.

Note: Figures show the fraction of the respondent firms to which each item applies, except for those for the question indicated with an asterisk.

*The figures show the average value of the variable for each group of respondent firms.

Source: Authors' calculation based on the survey data in Viet Nam.

Performance Management

Table 17 summarises the responses to the set of questions regarding comprehensiveness (or detailedness) and frequency of the monitoring and review of employees' performance. In terms of the comprehensiveness of performance monitoring, the data indicated that foreign firms were likely to prepare/use more performance indicators than the domestic firms. The data also indicated that among the domestic firms, the GVC participants were overall more likely to monitor the performance of their employees using more indicators than the GVC non-participants, particularly the suppliers to local MNE affiliates compared to the non-suppliers.

In terms of the frequency of the performance review of employees, the data showed some difference between the domestic and foreign firms in the review of production workers. The foreign firms were likely to review the performance of production workers with a higher frequency than the domestic firms. However, this difference was not observed between the GVC-participants and non-participants of the domestic firms. In addition, the data indicated no evident difference among the groups of firms in terms of the performance review frequency for managers. Most firms reviewed their managers' performance basically annually.

The overall message of these data is that GVC participation may lead firms to monitor their workers engaged in production more closely.

Table 17. Employee Performance Monitoring

Variable	Suppliers to MNEs		Exporters		Domestic Total	Foreign Firms
	Non-GVC	GVC	Non-GVC	GVC		
No. of Key Indicators for Performance Monitoring						
1. 1-2 key indicators	53.3%	26.7%	35.0%	50.0%	40.0%	16.4%
2. 3-9 key indicators	33.3%	70.0%	55.0%	45.0%	51.7%	77.3%
3. 10 or more key indicators	6.7%	0.0%	2.5%	5.0%	3.3%	3.6%
4. No key indicators	6.7%	3.3%	7.5%	0.0%	5.0%	2.7%
no. of respondents	30	30	40	20	60	110
Frequency of Performance Review: Managers						
1. Yearly	60.0%	73.3%	69.2%	61.9%	66.7%	64.6%
2. Quarterly	26.7%	13.3%	23.1%	14.3%	20.0%	15.0%
3. Monthly	6.7%	13.3%	5.1%	19.0%	10.0%	17.7%
4. Weekly	3.3%	0.0%	2.6%	0.0%	1.7%	0.9%
5. Daily	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
6. Hourly or more frequently	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
7. Never	3.3%	0.0%	0.0%	4.8%	1.7%	0.9%
no. of respondents	30	30	39	21	60	113
Frequency of Performance Review: Production Workers						
1. Yearly	45.2%	35.5%	34.1%	52.4%	40.3%	14.6%
2. Quarterly	25.8%	38.7%	36.6%	23.8%	32.3%	25.2%
3. Monthly	19.4%	19.4%	22.0%	14.3%	19.4%	50.5%
4. Weekly	0.0%	0.0%	0.0%	0.0%	0.0%	5.8%
5. Daily	6.5%	6.5%	7.3%	4.8%	6.5%	2.9%
6. Hourly or more frequently	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
7. Never	3.2%	0.0%	0.0%	4.8%	1.6%	1.0%
no. of respondents	31	31	41	21	62	103

GVC = global value chain, MNEs = multinational enterprises.

Note: Figures show the fraction of the respondent firms to which each item applies.

Source: Authors' calculation based on the survey data in Viet Nam.

Setting and Recognition of Production Targets

Table 18 summarises the responses to a series of questions concerning the nature (time frame and level of difficulty) and awareness (who and how to share) of the firms' production targets. Compared to domestic firms, foreign firms were more likely to set multi-period production targets that required relatively higher levels of workers' effort, and to share the targets among a wider group of employees of both production and managerial levels. Although the difference was not as large as between the domestic and foreign firms, a similar difference in target setting and sharing was also observed between the GVC participants and non-participants of the domestic firms. The GVC participants, both exporters and suppliers to local MNE affiliates, were more likely than the GVC non-participants to set production targets requiring higher levels of workers' efforts and to share them among a wider range of employees. Moreover, the firms supplying to local MNE branches were also more likely to set short- and long-term combined targets than the non-suppliers (this difference was not very evident between the domestic exporters and non-exporters). Also, target-sharing was conducted among a much wider group of employees in the exporters than non-exporters (this difference was not so significant between the GVC suppliers and non-suppliers).

Table 18. Production Targets

Variable	Suppliers to MNEs		Exporters		Domestic	Foreign
	Non-GVC	GVC	Non-GVC	GVC	Total	Firms
Time Frame of Production Targets						
1. Mainly Short term	4.0%	3.6%	2.7%	6.3%	3.8%	1.2%
2. Mainly Long term	48.0%	17.9%	29.7%	37.5%	32.1%	7.0%
3. Short- and Long-term Combined	48.0%	78.6%	67.6%	56.3%	64.2%	90.7%
4. No targets	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%
no. of respondents	25	28	37	16	53	86
Displaying Production Targets?						
1. At One place	71.0%	58.6%	65.0%	65.0%	65.0%	28.3%
2. At Multiple places	22.6%	37.9%	27.5%	35.0%	30.0%	61.9%
3. Not displaying at workplace	6.5%	3.4%	7.5%	0.0%	5.0%	9.7%
no. of respondents	31	29	40	20	60	113
Effort Level Required to Achieve the Targets						
1. Not much effort	0.0%	3.0%	2.5%	0.0%	1.6%	1.1%
2. Some effort	10.3%	3.0%	10.0%	0.0%	6.5%	32.2%
3. Normal amount of effort	62.1%	66.7%	62.5%	68.2%	64.5%	32.2%
4. More than normal effort	20.7%	12.1%	15.0%	18.2%	16.1%	23.3%
5. Extraordinary effort	6.9%	15.2%	10.0%	13.6%	11.3%	11.1%
no. of respondents	29	33	40	22	62	90
Target Sharing: Who Are Aware of the Targets?						
1. Only senior managers	37.9%	9.4%	27.5%	14.3%	23.0%	4.0%
2. Most managers and some production workers	10.3%	3.1%	10.0%	0.0%	6.6%	9.1%
3. Most managers and most production workers	13.8%	28.1%	30.0%	4.8%	21.3%	46.5%
4. All managers and some production workers	37.9%	59.4%	32.5%	81.0%	49.2%	40.4%
no. of respondents	29	32	40	21	61	99

GVC = global value chain, MNEs = multinational enterprises.

Note: Figures show the fraction of the respondent firms to which each item applies.

Source: Authors' calculation based on the survey data in Viet Nam.

Technology Management in Production and Operation

Table 19 summarises the responses to the set of questions concerning the management of the firms' production and operational technologies. We were interested in whether the GVC-participating firms were likely to apply a newer or more modernised production technology and operational system. Interestingly, in terms of the modernisation of operation, the fraction of the firms that modernised their manufacturing operation is larger for domestic firms than foreign firms. Only a quarter of the respondent foreign firms introduced lean manufacturing while more than a half of the respondent domestic firms did so. This might be because foreign firms originally had a modernised operational system and thus did not (have to) conduct further

modernisation during the period of inquiry. Among the domestic firms, the GVC participants were more likely to conduct operational modernisation, and the difference was larger between exporters and non-exporters than between suppliers and non-suppliers to local MNE affiliates. An export opportunity may motivate domestic firms to streamline manufacturing operations somewhat strongly.

In terms of product or process innovation, majority of the respondents performed some innovation during the period of inquiry for both domestic and foreign firms, but the fraction of those firms was higher for the domestic firms than the foreign firms. Similar to the case of operational modernization, this might be because many of the foreign firms had already performed some product/process innovation. Among the domestic firms, also similar to the case of operational modernization, GVC participants were overall more likely to perform product or process innovation than GVC non-participants, while the difference was larger between exporters and non-exporters than between suppliers and non-suppliers to local MNE affiliates. It was notable that all the respondent exporters performed some innovation. More than 80% of them performed product innovation and more than a half of them did process innovation. The opportunity for exporting may also stimulate firms' innovation activities.

Table 19. Technology Management in Production and Operation

Variable	Suppliers		Exporters		Domestic	Foreign
	Non-GVC	GVC	Non-GVC	GVC	Total	Firms
Modernized Manufacturing Operation?						
1. Yes / Lean manufacturing	43.8%	58.6%	47.2%	77.8%	53.3%	24.5%
2. No	56.3%	41.4%	52.8%	22.2%	46.7%	75.5%
no. of respondents	16	29	36	9	45	98
Product or Process Innovation Performed						
None	21.1%	16.1%	26.5%	0.0%	18.0%	39.3%
Innovation/adoption of new product	42.1%	67.7%	47.1%	81.3%	58.0%	42.0%
Innovation/adoption of new production process	42.1%	35.5%	29.4%	56.3%	38.0%	33.9%
no. of respondents	19	31	34	16	50	112
No. of Employees Per Supervisor *	15.5	22.0	20.2	17.4	19.2	23.4
no. of respondents	26	34	40	20	60	116

GVC = global value chain, MNEs = multinational enterprises.

Note: Figures show the fraction of the respondent firms to which each item applies, except for those for the question indicated with an asterisk.

*: The figures show the average value of the variable for each group of respondent firms.

Source: Authors' calculation based on the survey data in Viet Nam.

Management and Operation Practice and GVC Participation: A Summary

As described above, our data suggested some difference and similarities (or non-difference) between the firms that participated in GVCs and those that did not. We found the following features for GVC-participating firms: First, the broad group of GVC participants (foreign firms, domestic exporters, and domestic suppliers to local MNE affiliates) were more likely to have formal training for managers; have increased organisation layers in production departments (except for domestic exporters that were more likely to maintain or decrease layers); set production targets that involved both short- and long-term goals and required relatively high levels of effort to their employees; and shared the targets among a broader group of employees compared to GVC non-participants. Second, compared to domestic firms, foreign firms were more likely to have performance-linked pay systems with a richer menu of fringe benefits to their employees, and more likely to monitor/review the employees (particularly production workers) more often based on multiple performance indicators. Third, the

domestic GVC participants (i.e. exporters and to-local-MNE suppliers), compared to their non-GVC-participating counterparts, were likely to be more enthusiastic about the formal training of production workers, the modernisation of production and operation, as well as product and process innovation. On the other hand, we did not find a notable difference between GVC participants and non-participants in terms of the required background to newly recruited managers (except for some language skills and foreign experience for foreign firms), the use of public/government support to employee training, teamwork in production, and unionisation of employees. These features might not be critical factors for GVC participation, at least for the surveyed manufacturing firms in northern Viet Nam.

6. Conclusion

This study examined the adoption of management practices by firms that would face increasing opportunities for internationalisation. For this purpose, we conducted an original survey of Vietnamese manufacturing firms. This study focused on HRM because it may play an important role in the implementation of other management practices such as the adoption of modern manufacturing systems. Furthermore, the examination of HRM may clarify the microeconomic structure of the effects of globalisation on labour market performances such as wages, skill demand, and labour productivity.

The major findings can be summarised as follows. Foreign firms had much larger sales and expenses than domestic firms. This trend holds for other financial figures including sales expenses, general and administrative expenses, wages, fixed assets, and

energy expense. In addition to direct exports, supplying products to MNEs' local affiliates (foreign firms) was an important mode of internationalisation, while only a small proportion of domestic firms had foreign affiliates. Regardless of the substantial differences in many operation indicators, domestic and foreign firms had similar proportions in terms of job categories (production workers, managers, and technicians).

There were similarities and dissimilarities across domestic GVC firms, domestic non-GVC firms, and foreign firms in several respects of management practices. Almost all the firms required newly recruited managers with a degree in higher education (college-level or above) and some previous work experience of more than 2 years on average. However, while 15% of foreign firms required newly recruited managers with past work experience in foreign firms, a much smaller fraction of domestic firms did.

With respect to performance-related pay, compared to domestic firms, a larger fraction of foreign firms determined wages and bonuses for production workers and managers based on performance. In addition, domestic firms supplying to MNEs' local affiliates tended to determine wages and bonuses for production workers based on performance and/or on formal appraisal more than those that did not supply to MNEs' local affiliates. With respect to promotion systems for production workers and managers, no substantial difference was observed between domestic and foreign firms. However, GVC firms tended to rely solely on performance and ability than non-GVC firms. In addition, a higher fraction of domestic exporters had production-worker training programs than domestic non-exporters. Domestic firms supplying to local MNE affiliates were more likely to conduct on-the-job training for production workers than domestic non-suppliers. Finally, domestic firms supplying to MNEs' local

affiliates were more likely to have their production workers involved in teams for work or problem-solving activities than those that did not supply to MNEs' local affiliates.

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Appendix Table 1. Summary of the Survey Questions

A. Background Information

1. Years of establishment
2. Location
3. Type of business registration
4. Ownership
5. Main business activities
6. The size and characteristics of employees
7. Characteristics of CEOs
8. Internationalisation
9. Performance

B. Human resource management

1. Skill requirements for newly employed production workers and managers
2. Work and study experiences of managers
3. Wages and other rewards
4. Promotion systems
5. Dismissal systems
6. Training
7. Teamwork

C. Organisation

1. Changes in organisational layers
2. Labour union

D. Operations and its implementation

1. Target setting (the number of performance indicators)
2. Target monitoring (the frequency of monitoring)
3. Target review (the frequency of target review)
4. Time frame of production targets
5. Target sharing
6. The requirement level of production targets
7. Awareness of production targets
8. Problem identification and resolution
9. Production management
10. Innovation and/or adoption of new products or production processes
11. The number of employees per supervisor