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GLOBAL VALUE CHAINS, EMPLOYMENT, AND WAGE INEQUALITY: A STUDY OF INDIAN MANUFACTURING

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Abstract

Using plant-level data from the Annual Survey of Industries, this study presents an empirical analysis of the effects of global value chains (GVCs) on employment and wage premiums in the Indian manufacturing sector. We emphasize the GVC's impact on three labor market variables: (i) employment, (ii) the wage premium among skilled, unskilled, male, and female workers, and (iii) wage inequality based on skill and gender. The analysis in the paper consists of four sub-categories of workers: skilled, unskilled, male, and female workers. We find that participation in GVCs is positively associated with employment and wages. We also find that these effects are more pronounced for skilled workers and that GVC participation significantly increases wage gaps between skilled and unskilled workers. There are several policy implications from the study: (i) the skills of workers should be improved through training and re-tooling, (ii) a strong monitoring framework on the dynamics of the labor market should be developed in terms of unbundling the effects of the GVC, and (iii) strong labor market institutions need to be developed to create more forward-looking policies that will increase the "future skills" of domestic workers.

Keywords: GVC, employment, wage inequality, manufacturing, India

JEL Classification: F16, F61

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1. INTRODUCTION

A key topic of research in trade liberalization is the distributional effects of global production value chains and the impact of regional integration on the domestic economy (Goldberg and Pavcnik 2007; J. R. Baldwin and Yan 2014). Since the 1980s, globalization has been driven mainly by the global production value chain in terms of production fragmentation and increases in intermediate inputs trade (R. Baldwin 2006; World Bank 2020). Recently, we have also observed an emergence of services and servicification of manufacturing activities through global production value chain activities (Thangavelu, Wang, and Oum 2018). In fact, the emergence of global value chains (GVCs) has significantly altered the structure of international trade and global production since the Asian Financial Crisis in the 1990s (World Bank 2020).

According to the Organisation for Economic Co-operation and Development (OECD), nearly 70% of global trade is driven by GVC activities, such as trade in intermediate goods; raw materials, parts, and components crossing international borders; services trade related to GVCs; and movement of people and technology.¹ According to the World Development Report (World Bank 2020), approximately 60% of global trade consists of trade in intermediate inputs and services through GVCs. On average, the value-added trade contributes approximately 30% and 18% of the GDP of developing and developed countries, respectively. However, the World Development Report (2020) also highlighted the unevenness of GVC participation by developed and developing countries and the uneven impact of industries and workers within and between countries.

There are several studies that examine the determinants of GVC participation in developed countries using aggregated and firm level data, but there are only a handful of studies focused on developing and less developed countries. Even though GVCs result in productive improvements in the domestic economy in terms of industrial competitiveness, their impacts on income distribution have not been carefully studied in the context of developing countries (K. Banga 2016). Further, the studies on GVCs have mostly focused on employment growth, with only limited analysis of rising inequality and its implications on labor markets, especially in developing countries. Therefore, the impact of firm GVC participation on employment and wages remains an open question, especially in the context of developing countries. Recent models of production fragmentation following the trade in tasks approach have shown that the impact of offshoring on wages is not uniform across countries due to the different stages of growth in domestic industries and institutions. The global production value chain could also intensify production fragmentation through offshoring, which may exacerbate wage inequality, especially for low-skilled workers and occupations relative to the skilled workers exposed to globalization.

In this study, we examine the relationship between GVCs and wage inequality for India using plant-level data. To our knowledge, this is the first study to examine the GVC and wage inequality using plant-level data for India. After four decades of dirigiste regime, India moved to liberalized regimes during the early nineties. Reform measures included considerable reductions in tariff and non-tariff barriers and removal of restrictions on foreign investment in India. Since the adoption of reforms, the Indian economy has witnessed noticeable economic growth, thereby highlighting the positive effects of trade liberalization. Studies have shown that the extent of India's GVC participation has

¹ https://www.oecd.org/trade/topics/global-value-chains-and-trade/#:~:text=In%20reality%2C%20about% 2070%25%20of,consumers%20all%20over%20the%20world.

grown over the last two decades (Veeramani and Dhir 2022). A McKinsey report forecasted that India needs to create at least 90 million new jobs by 2030, and the main driver of economic growth given the employment generation challenge is through GVC participation (McKinsey Global Institute 2020). The effect of GVC participation on the employment of skilled and unskilled workers and the wage gap will be important to the creation of inclusive and sustainable growth in India.

Several recent studies have examined the association between GVC participation and positioning on employment for the Indian economy (K. Banga 2016; Guha-Khasnobis, Aditya, and Chandna 2023). These studies used sectoral-level data to understand the association between the extent of GVC participation and positioning on employment growth. Compared to these studies, we use rich, establishment-level panel data and analyze the impact of GVC on different labor market outcomes. Specifically, we address three issues in terms of (i) the impact of GVC participation on the employment of skilled, unskilled, male, and female workers, (ii) the impact of GVC on wage inequality by skill and gender of the workers, and (iii) the differences in impacts by firm size and technology intensity. In this study, we use a rich, plant-level data set over the years 2009-10 to 2019-20 from the Annual Survey of Industries (ASI) provided by the Government of India's Ministry of Statistics and Programme Implementation (MOSPI). We use the plant-level data at two-digit industries classification consisting of 23 manufacturing industries. In fact, this study is perhaps the first attempt to estimate the labor market effects (employment and wage inequality) of GVC participation using unit (plant) level data of the Indian manufacturing firms.

The rest of the paper is organized as follows: Section 2 provides a brief literature background. Section 3 describes the data and stylized facts about the data. Section 4 provides the estimation strategy of the paper. The baseline results and subsample analysis are presented in Section 5. Section 6 concludes the paper.

2. LITERATURE REVIEW

Although recent studies have examined a wage premium associated with exporters, the weakness of these studies is that they are unable to account for distributional aspects of wages. In an open economy, the gains of trade and distributional effects of productivity growth are likely to be unequal within and between countries.

The vast majority of literature on trade and inequality focuses on the relationship between increases in inequality of incomes or wages associated with international trade (Helpman et al. 2017). The theoretical framework in these studies relies on the standard Heckscher–Ohlin–Samuelson (HOS) model. The findings of these studies are rather inconclusive as some of them show an increase in inequality (Attanasio, Goldberg, and Pavcnik 2004), while others find insignificant trade impact.

In contrast, empirical work on the impact of GVCs on inequality is sparse and is mostly focused on developed countries (Lopez Gonzalez, Kowalski, and Achard 2015). Among the earliest attempts, Feenstra and Hanson (1996) and Costinot, Vogel, and Wang (2012) provided theoretical and empirical evidence to explain the wage inequality within the global supply chain network. In their model, participation in global supply chains leads to increases in skill premium and ultimately marks an increase in wage inequality, depending on the position of the workers in the production chains.

Several factors contribute to the uneven impact of trade and GVC on workers (Wang, Findlay, and Thangavelu 2020). The value-added trade of GVCs is associated with higher trade gains and more volatile income distribution via three channels (Antràs 2020). First, similar to offshoring in goods, unskilled intensive tasks offshored from developed countries tend to be more skill intensive in developing countries, which raises demand for skilled labor and widens the wage inequality of skills in both countries. Second, developing countries tend to demand more skilled labor and to pay higher wages to skilled labor to meet the quality requirement of GVC products that are destined for quality-sensitive consumers in rich countries (Verhoogen 2008). Third, compared to domestic firms, GVC firms tend to adopt more capital-intensive technologies (Bernard et al. 2018). Due to capital-skill complementarity (Krusell et al. 2000), adopting capital-intensive technologies raises the demand for skilled workers and enlarges wage inequality. A study by Wang, Thangavelu, and Lin (2021) examined the impact of wage inequality in GVC activities in the People's Republic of China (PRC). Using detailed Chinese firm-level data from 2000 to 2006, the paper developed a Mincer-type empirical model to study the wage premium changes associated with foreign value-added and upstreamness. The study found robust empirical evidence that the increase in wage inequality in the PRC mainly arises from moving to more upstream sectors than from changing GVC participation. Carpa and Martínez-Zarzoso (2022) used a sample of 39 countries over the period 1995-2016 to study the relationship between participation in GVCs and intra-country income inequality and found that backward integration increased income inequality temporarily, but in the long run income inequality decreased. Szymczak and Wolszczak-Derlacz (2022) studied wage effects of backward, forward GVC integration and relative GVC position. They found that GVC involvement has a significant and differential impact on the wages of high-skilled, medium-skilled, and low-skilled workers.

Several studies on employment and GVC have emphasized the employment opportunities from GVC participation. Pham and Jinjarak (2022) and Said-Allsopp and Tallontire (2015) analyzed the impact of firms' GVC participation on female employment opportunities using firm-level data. Most of the studies in the context of India that have analyzed the impact of labor market outcomes on trade and GVCs are based on sectoral data. In the case of India, R. Banga (2005) analyzed the impact of international trade on wages and employment using three-digit sectoral-level data. The findings of the study point to the absence of a wage premium associated with exports; however, imports were negatively associated with wages. K. Banga (2016) used sectoral data and reported that GVC participation through backward linkage has a negative effect on employment growth, while the effect of forward linkage on employment growth is insignificant. Christian (2013) used a case study approach to GVCs in a call center industry in India and showed that GVCs led to an increase in professional jobs for women. More recently, Aggarwal and Sharma (2023) used ASI unit-level data and found that imports and exports had a negative impact on wages. However, except for Deb (2022), who analyzed GVC participation on the gender wage gap, other studies did not fully capture firms' GVC activities and their linkage to wages and employment. A recent study using firm-level data for India highlights the importance of GVC activities in the Indian manufacturing sector for productivity improvements as well as the upgrading of skills and services as key components for positioning to higher value-added activities (Reddy, Sasidharan, and Thangavelu 2022). Unlike previous studies on India, the objective of this study is to investigate the impact of GVC participation on employment and wage premiums for both skilled and unskilled workers using establishment-level panel data for Indian manufacturing industries.

3. DATA

We obtained the data for this study from the plant-level longitudinal data of the ASI. The ASI is the largest database on industrial statistics in India, and it includes all the production units registered under sections 2(m) (i) and (ii) of the Factory Act 1948. Previous firm-level studies on GVCs in the context of India have mostly used the Prowess database. However, the Prowess database primarily covers public limited companies and does not cover small enterprises and private limited organizations that contribute significantly to the manufacturing sector. In contrast, the ASI covers organized sector units belonging to public and private limited companies, proprietorship, and partnership companies (Goldar 2022). The ASI provides information on various plant characteristics, including exports, imports, ownership, fixed assets. employment and labor cost, and expenses for outputs and inputs. The ASI survey framework includes census and sample sectors.² Under the "Census" scheme, all the larger units (plants) are surveyed every year, while smaller units (part of the "Sample" sector) are sampled every few years. The ASI provides information on variables, including fixed assets, employment and wages, imports, and exports. In this study, the number of manufacturing plants covered in the surveys included more than 50,000 plants per year. Even though ASI plant-level data dates back to 1985, export information is available only from 2008-2009. To avoid the negative outcomes of the global financial crisis during 2008, which may bias our estimates, our study period begins with 2010.

Like any plant-level data, the ASI is not free from missing information. Therefore, before proceeding to empirical analysis, we cleaned the data through data filtering techniques. As a first step, we considered only those production units belonging to the manufacturing sector at 23 two-digit industries based on the National Industry Classification 2008. In the second step, we considered firms fully operating and functioning during the survey period. We then dropped units with missing information on labor, imports, and exports. After the data cleaning process, our final sample consisted of 446,366 plant-year observations³ over the ten years from 2010–2019.⁴

3.1 Stylized Facts

Before we proceed to estimate the association between GVC participation, employment, and wage premium, we report some stylized facts from the sample data. We classified the units included in the study into four categories: (i) GVCs, (ii) only exporters, (iii) only importers, and (iv) domestic establishments. We defined GVCs as those establishments that simultaneously import and export in a survey year. In our descriptive statistical analysis, all other establishments fit into one of three categories: (i) importers (firms with only imports), (ii) exporters (firms with only exports), and (iii) domestic establishments (establishments without any involvement in international trade). Some of the previous studies using micro data also considered firms either importing inputs or exporting as part of GVCs (Pham and Jinjarak 2023). In our study, we used the strong criteria that a GVC firm must be simultaneously importing and exporting in a survey year. The composition of establishments during our study period is reported in Figure 1. We observe that the number of plants across all categories reported an increase during the study period (2010–2019).

² However, ASI does not contain information on units with less than 10 workers or 20 workers without power.

³ Year wise number of observations are reported in the Appendix.

⁴ We use the terms "plant," "establishment," and "factories" synonymously.



Figure 1: Composition of Establishments

During the same period, the number of establishments participating in GVCs showed a marked improvement. We report the number of establishments participating in GVC by year in Figure 2. It is evident from the figure that the number of firms involved in GVC activity significantly increased over the study period. In the beginning of the study period, we could identify 1,742 establishments as GVC participants, and by the end of the study period, the number of GVC establishments had increased to 2,627. In terms of the share, we observe that around 5% of the establishments are involved in GVC activities. The share of sole importers of inputs registered an increase from 15.67% to 17.49%, while the share of only exporters recorded a marginal increase from 9.30% to 10.08%.



Figure 2: Number of GVC Firms

Source: Author's calculation based on ASI.

Source: Author's calculation based on ASI.

We also classified GVC establishments based on the two-digit NIC classification (Table 1). It can be seen from the table that in terms of GVC participation, GVC establishments mostly belong to the wearing apparel, leather and related products, and machinery and equipment sectors. Establishments belonging to beverages, tobacco products, and furniture products recorded the lowest share among GVC establishments.

NIC Two Digit	2010	%	2015	%	2019	%
Food Products (10)	92	5.27	157	6.41	155	6.27
Beverages (11)	4	0.22	4	0.16	2	0.08
Tobacco (12)	7	0.4	7	0.28	6	0.24
Textiles (13)	116	6.64	168	6.86	164	6.64
Wearing Apparel (14)	180	10.3	260	10.6	357	14.4
Leather (15)	165	9.45	171	6.98	183	7.41
Wood Products (16)	11	0.63	13	0.53	6	0.24
Paper (17)	25	1.43	30	1.22	32	1.29
Printing and Recorded Media (18)	18	1.03	19	0.77	12	0.48
Coke and Refined Petroleum (19)	15	0.85	13	0.53	12	0.48
Chemicals (20)	136	7.79	190	7.76	216	8.74
Pharmaceuticals (21)	103	5.9	134	5.47	194	7.85
Rubber & Plastics (22)	77	4.41	119	4.86	123	4.98
Non-Metallic (23)	49	2.8	88	3.59	83	3.36
Basic Metals (24)	70	4.01	124	5.06	114	4.61
Fabricated Metal (25)	84	4.81	122	4.98	92	3.72
Computer, Electronic and Optical (26)	86	4.92	104	4.24	82	3.32
Electrical (27)	89	5.1	149	6.08	115	4.65
Machinery (28)	143	8.19	205	8.37	190	7.69
Motor Vehicle (29)	81	4.64	156	6.37	109	4.41
Transport (30)	24	1.37	32	1.3	39	1.57
Furniture (31)	3	0.17	7	0.28	13	0.52
Others (32)	167	9.57	176	7.18	170	6.88

Table	1:	Industr	v-wise	Classification	of	GVC	Firms
IUNIC		maaou	y WIGG	oluoonioulion	U .	U • U	

Source: Author's calculation based on ASI. Note: NIC codes are reported in parentheses.

Since our study emphasizes the nexus between GVC participation on employment and wages, the year-wise changes in the employment and wages among different categories of manufacturing units are provided in Figures 3 and 4. Figure 3 reports trends in employment. We observe that average employment did not register much change across all categories. In Figure 3, panel A reports the change in employment of production workers, while we present changes in the employment of skilled workers and the gender categories of male and female workers in panels B, C, and D, respectively. It is evident that internationalized establishments are facilitators of employment compared to domestic firms. Specifically, GVC establishments employ more workers across all categories than non-GVC firms. In the case of production workers, the average number of workers increased from 420 to 600 from 2010 to 2019. At the same time, the average number of skilled workers also reported an increase from 60 to 70. However, we do not observe much change in women's employment in any category. Similar to GVC establishments, importers also employed an average of 60 skilled workers. Similarly, the average wages of workers showed an increasing trend in our sample. The changes in average wages during the study period are presented in Figure 4 panel A (wages of unskilled workers), B (skilled wages), C (male wages), and D (female wages). We observe an increase in wages across all categories of workers for GVC and non-GVC establishments during the study period. However, similar to Aggarwal and Sharma (2022), we also observe that importing establishments pay higher wages compared to all other manufacturing units. Even though GVC establishments also report a substantial wage increase, the wage increase seems to be biased toward skilled workers. From Figure 4, it is evident that the average wage of skilled workers increase by around threefold during 2010–2019, while the corresponding increase in wages of unskilled workers and women workers was marginal.



Figure 3: Change in Workers

Source: Author's calculation based on ASI.

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Figure 4: Average Wages by Skill and Gender of the Workers

Source: Author's calculation based on ASI. Note: Average wage is in Indian Rupees.

In turn, increases in the average wages of skilled workers widen the wage gap between skilled and unskilled workers. Therefore, the wage gap (difference in average wages) between skilled and unskilled (panel A) and between men and women (panel B) are presented in Figure 5. It is evident from Figure 5 that wage inequality between skilled and unskilled workers doubled during 2010–2019 among the importers and GVC units, while the wage gap between men and women marginally increased. In brief, we observe that skilled workers are beneficiaries of the internationalization of establishments, specifically, importers and GVC participants.



Figure 5: Wage Inequality Based on Skill and Gender of Workers

Note: Authors calculation based on ASI. Note: Value figures in Indian Rupees.

4. EMPIRICAL STRATEGY

To estimate the effect of GVC participation on employment and wages, we used the following empirical specification:

$$lnY_{iit} = \alpha + \beta GVC_{iit} + \delta Z_{iit} + \gamma_i + \mu_t + \varepsilon_{it}$$
(1)

 Y_{ijt} denotes the dependent variable. We estimated three specifications of this equation with three variants: (i) average employment, (ii) average wage, and (iii) wage inequality defined as the difference in average wages⁵ using a fixed effects model. GVC_{iit} is a binary dependent variable that represents the GVC status of the firm at time t, with value 1 if firm *I* in industry *j* at time *t* participates in GVC and 0 otherwise. The measurement of GVC at the plant level is in the spirit of al la Antràs (2020), stating that simultaneous importers and exporters are treated as GVC establishments. Further, we controlled for different time-varying plant specific variables (Z_{iit}) . These include establishment size measured as total output; following previous studies, we hypothesized that size has a positive and significant association with a plant's GVC participation. We also controlled for age of the establishment. We defined age as the difference between the current year and the initial year of operation. Capital intensity was defined as the total output of the unit divided by the fixed assets. We expect firms capital intensity will have a positive association with the wage gap. Further, ε is the random error term, and we additionally incorporate year (μ_t) and industry (γ_i) fixed effects.

In the ASI data set, it is possible to distinguish between skilled and unskilled workers. Therefore, we estimated an alternative specification using production and supervisory employment information. Similarly, we used wage information for the production workers and supervisory (managerial) staff to estimate the wage specification. We conducted the same set of analyses by incorporating the distinction based on employment by gender and wage premium. Table 2 reports the summary statistics for our sample.

⁵ We capture the wage inequality based on the skills (difference between production workers and skilled workers) and gender (male–female difference in wages).

	All Firms			GVC Firms			Non-GVC Firms		
Variables	Obs.	Mean	Std. Dev	Obs.	Mean	Std. Dev	Obs.	Mean	Std. Dev
Employment									
Production	446,366	165.30	683.40	23,189	511.22	1,223.88	423,177	146.35	635.32
Managerial	446,366	19.74	105.66	23,189	66.64	215.69	423,177	17.17	95.39
Men	446,366	80.81	291.84	23,189	241.97	631.10	423,177	72.02	257.93
Women	446,366	22.51	283.71	23,189	98.97	547.57	423,177	18.32	261.03
Average Wage									
Production	446,366	102,808	112,473.5	23,189	143,061	127,441	423,177	100,602	111,175
Managerial	400,673	613,668	1.76e+07	23,070	1,048,294	5,506,065	377,603	587,114	1.81e+07
Men	407,795	118,746	154,630.6	22,332	171,920	183,496	385,463	115,666	152,223
Women	136,617	101,981	187,877.6	11,610	137,716	192,693	125,007	98,662	187,078
Wage Gap									
Skill	400,673	506,861	1.76e+07	23,070	904,993	549,879	377,603	482,537	1.81e+07
Gender	132,480	0.1866	0.412	11,552	0.164	0.419	120,928	0.188	0.412
GVC	446,366	0.051	0.22	23,189	-	-	423,177	-	-
Control Variable									
Size	438,949	17.96	2.49	23,132	20.12	1.89	415,817	17.84	2.47
Age	446,366	24.68	15.61	23,189	26.37	15.34	423,177	24.59	15.62
Capital Intensity	446,366	625,725	2,138,185	23,189	840,198	2,253,448	423,177	613,973	2,131,067

Table 2: Summary Statistics

Notes: Value figures in Rs. Lakhs and Others in Numbers. Wage gap is in Indian rupees. Source: Authors based on ASI.

We observe that 5.1% of the observations in our sample correspond to GVC establishments. On average, an establishment in the sample is 24 years old; however, the average age of a GVC establishment is 26. Regarding employment, GVC establishments employed, on average, 66 workers falling under the skilled worker category. This is four times more than non-GVC establishments. Furthermore, we observe a substantial difference in wages, specifically in the case of wages of managerial workers in GVC establishments, which induces a wage gap between production and managerial workers.

5. RESULTS AND DISCUSSION

We estimated the impact of GVC on the employment of all categories: unskilled, skilled, men, and women workers. We present the association between GVC participation and employment in Table 3.⁶ The results show positive and statistically significant employment effects on both skilled and unskilled workers. We also observe positive employment effects of GVC for both male and female workers. However, the employment of GVC is higher for unskilled and female workers because more labor-intensive activities are driven by the GVC impact.

The results by skills and gender are also reported in Figure 3. The results indicate that compared to non-GVC firms, GVC firms experienced an increase in employment, which supports the findings of the previous studies (R. Banga, 2005; Hollweg 2019). However, the results did not show a substantial increase in skilled relative to unskilled employment in our study (the coefficient of unskilled employment is higher than skilled employment). We also find that the coefficient for female workers is higher than for male workers, which indicates that the GVC participation of enterprises led to increase

⁶ Based on the Hausman test, we used fixed effects model for our analysis.

in female employment compared to non-GVC firms. This is interesting as GVC activities are more labor intensive at the lower end of the GVC activities, which have greater impact on unskilled and female workers.

	(1)	(2)	(3)	(4)
Variables	Unskilled Workers	Skilled Workers	Male Workers	Female Workers
GVC	0.494***	0.433***	0.273***	0.632***
	(0.006)	(0.005)	(0.008)	(0.009)
Size	0.537***	0.404***	0.444***	0.116***
	(0.0007)	(0.0006)	(0.0008)	(0.0009)
Age	0.006***	0.005***	0.013***	0.002***
	(9.86e-05)	(8.34e-05)	(0.0001)	(0.0001)
Capital Intensity	-0.095***	-0.028***	-0.033***	-0.079***
	(0.0004)	(0.0004)	(0.0005)	(0.0006)
Constant	-5.324***	-5.625***	-5.324***	-0.346***
	(0.012)	(0.010)	(0.015)	(0.017)
Industry	Yes	Yes	Yes	Yes
Observations	438,949	438,949	438,949	438,949
R-squared	0.618	0.588	0.470	0.216
Number of years	10	10	10	10

Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

Regarding other control variables, the coefficients of size and age are positive and significant, highlighting that larger and older firms employ more workers than smaller and younger firms. This result is in line with the findings of earlier studies (Feenstra and Hanson, 1996; Ma et al., 2019; Pham and Jinjarak 2023). Among other control variables, the capital intensity of enterprises had a negative sign, indicating that increased capital intensity has a substitution effect on employment, which corroborates the results of Aggarwal and Sharma (2022).

We also analyzed the association between GVC participation and another outcome variable, that is, the wage of different categories. The results show that the wages of skilled workers for GVC establishments are higher compared to non-GVC firms. We also find a positive and significant relationship between GVC participation and wages for all categories of workers compared to non-GVC firms. The higher coefficient value of skilled workers indicates that the wages of skilled workers increased substantially in GVC firms compared to non-GVC firms. This supports our observation of a three-fold increment in the wages of skilled workers in GVC firms reported in Figure 4, panel b, which lends additional support to our hypothesis. However, we observe a statistically insignificant relationship between female wages and GVC participation. The coefficients of other control variables, such as age and size, are positive and statistically significant. However, the coefficient of capital intensity is positive on all specifications except in the case of the specification with male wage.

Finally, we analyzed the impact of GVC on the wage gap between skilled and unskilled workers and on the gender of the workers. The results are provided in Table 5. In the case of GVC establishments, we find a positive and significant GVC association for both cases, indicating a higher wage gap than in non-GVC firms. It is also evident that the skill-based wage gap is highly predominant in the case of GVC firms. Interestingly,

the size coefficient turned out to be negative and significant, indicating smaller firms exhibit a lower wage gap for male and female workers.

(1)	(2)	(3)	(4)
Unskilled Wage	Skilled Wage	Male Wage	Female Wage
0.044***	0.143***	0.078***	0.007
(0.003)	(0.005)	(0.003)	(0.005)
0.112***	0.250***	0.129***	0.129***
(0.0003)	(0.0006)	(0.0003)	(0.0007)
0.002***	0.001***	0.001***	0.001***
(4.79e-05)	(8.63e-05)	(5.21e-05)	(9.81e-05)
0.004***	0.005***	-0.003***	0.004***
(0.0002)	(0.0004)	(0.0002)	(0.0004)
8.988***	7.626***	8.869***	8.577***
(0.006)	(0.012)	(0.006)	(0.013)
Yes	Yes	Yes	Yes
438,865	394,249	401,771	134,831
0.329	0.380	0.319	0.344
10	10	10	10
	(1) Unskilled Wage 0.044*** (0.003) 0.112*** (0.0003) 0.002*** (4.79e-05) 0.004*** (0.0002) 8.988*** (0.006) Yes 438,865 0.329 10	(1)(2)Unskilled WageSkilled Wage0.044***0.143***(0.003)(0.005)0.112***0.250***(0.003)(0.0006)0.002***0.001***(4.79e-05)(8.63e-05)0.004***0.005***(0.0002)(0.0004)8.988***7.626***(0.006)(0.012)YesYes438,865394,2490.3290.3801010	(1)(2)(3)Unskilled WageSkilled WageMale Wage0.044***0.143***0.078***(0.003)(0.005)(0.003)0.112***0.250***0.129***(0.0003)(0.0006)(0.0003)0.002***0.001***0.001***(4.79e-05)(8.63e-05)(5.21e-05)0.004***0.005***-0.003***(0.0002)(0.0004)(0.0002)8.988***7.626***8.869***(0.006)(0.012)(0.006)YesYesYes438,865394,249401,7710.3290.3800.319101010

Table 4: GVC Participation and Wages

Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3)	(4)	
Variables	Wage Skilled–U	e Gap Jnskilled	Wage Gap Male–Female		
GVC		0.166***		0.039**	
		(0.008)		(0.017)	
Size	0.292***	0.309***	-0.047***	-0.044***	
	(0.0009)	(0.0009)	(0.002)	(0.002)	
Age	0.0009***	0.001***	-0.0002	-0.0002	
	(0.0001)	(0.0001)	(0.0003)	(0.0003)	
Capital Intensity	0.005***	0.007***	-0.013***	-0.013***	
	(0.0006)	(0.0006)	(0.001)	(0.001)	
Constant	6.349***	6.039***	-0.790***	-0.847***	
	(0.018)	(0.016)	(0.045)	(0.042)	
Observations	376,908	376,908	105,090	105,090	
R-squared	0.331	0.326	0.030	0.030	
Number of Year	10	10	10	10	

Table 5: GVC Participation and Wage Gap

Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

5.1 Endogeneity

In this section, we address endogeneity issues in our estimation. The important econometric issue while estimating the fixed effects model was the two-way causation between GVC participation and employment outcomes, specifically employment and wages. It can be argued that employment structure can be associated with firms' GVC participation. To address this endogeneity issue, we applied two stage least

squares (2SLS) method by introducing sector–state ratio of GVC firms (*Number of GVC Firms*_{*irt*}) to the total number of firms in a particular region (state in our analysis) and sector (*Number of firms*_{*irt*}).⁷ It can be argued that the sectoral concentration of regions is positively associated with firm trading activity (Mittelstaedt, Ward, and Nowlin 2006; Pham and Jinjarak 2021). We report 2SLS estimates in Tables 6 (impact on employment) and 7 (impact on wages).⁸

	(1)	(2)	(3)	(4)
Variables	Unskilled Workers	Skilled Workers	Male Workers	Female Workers
GVC	1.660***	2.226***	1.782***	3.180***
	(0.029)	(0.026)	(0.035)	(0.004)
Size	0.510***	0.369***	0.428***	0.062***
	(0.0009)	(0.0008)	(0.001)	(0.001)
Age	0.004***	0.004***	0.012***	0.0003**
	(0.0001)	(9.23e-05)	(0.0001)	(0.0001)
Capital Intensity	-0.104***	-0.025***	-0.035***	-0.111***
	(0.0005)	(0.0004)	(0.0006)	(0.0008)
LM Statistic	2.7e+04***	2.7e+04***	2.7e+04***	2.7e+04***
Wald F Statistic	29,000	29,000	29,000	29,000
Observations	438,949	438,949	438,949	438,949
R-squared	0.562	0.481	0.406	0.299
Number of Year	10	10	10	10

Table 6: GVC Participation and Employment

Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

Table 7: GVC Participation and Wages

	(1)	(2)	(3)	(4)
Variables	Unskilled Wage	Skilled Wage	Male Wage	Female Wage
GVC	1.539***	2.257***	1.355***	0.945***
	(0.016)	(0.026)	(0.017)	(0.022)
Size	0.083***	0.208***	0.100***	0.110***
	(0.0005)	(0.0009)	(0.0005)	(0.001)
Age	0.001***	0.0002**	0.001***	0.0009***
	(5.87e-05)	(0.0001)	(6.06e-05)	(0.0001)
Capital Intensity	0.009***	0.009***	0.001***	0.0117***
	(0.0002)	(0.0005)	(0.000304)	(0.0004)
LM Statistic	2.7e+04***	2.7e+04***	2.6e+04***	2.5e+04***
Wald F Statistic	29000	29000	27000	26000
Observations	438,865	394,249	401,771	134,831
R-squared	0.035	0.135	0.055	0.135
Number of Year	10	10	10	10

Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

⁷ GVC_{irt} = Number of GVC Firms_{*irt*}/Number of firms_{*irt*}.

⁸ The estimated results of the first stage are in Appendix B.

The results indicate that the positive association of GVC participation with employment and wages remains robust after addressing endogeneity concerns. We find that GVC participation has a significant association with skilled workers employment and wages. For the women workers and female wages, we observe that the coefficients of GVC participation are positive and significant. For each percentage point increase in GVC participation, there is an associated increase in female workers of 3.18 percentage points, while the increase in wages is only 0.95 percentage points. However, in the case of male workers, we find that GVC participation is associated with an increase in male workers of 1.78 percentage points, while the increase in wages is 1.36 percentage points. The Wald F statistics remain greater than 10 in all the specifications, rejecting the null hypothesis of a weak instrument. Similarly, significant Lagrange Multiplier (LM) test statistics across specification suggest that the null hypothesis of under-identification can be rejected.

5.2 Robustness Analysis

Even though we observed a significant association between GVC participation, employment, and wages, we assumed there might be changes in the effects of GVC on employment and wages that vary by technological intensity of the firms. This led us to carry out a subsample analysis based on the technological intensity of firms. However, data unavailability prevented us from classifying firms based on technological intensity, and we therefore depended on the technological intensity of different industry sectors. For the classification, we used the standard Eurostat 2017,⁹ and we made a concordance with NIC 2008 and classified our sample as low-tech and high-tech sectors.

As reported in the overall sample result, the subsample result also reported a positive association between GVC and employment across all categories.¹⁰ The impact of GVC on wages based on the subsample analysis provides some interesting results (Table 8). For those establishments belonging to the high-tech sector, we find a significant positive association between GVC participation and employment in all categories.

Interestingly, in the low-tech sector, we find that GVC has a negative association with female wages. More interestingly, the coefficient of GVC is insignificant when we estimate the wages of unskilled workers, which indicates that GVC participation by low-tech firms did not facilitate any significant changes in the wages of unskilled workers. With regard to the wage gap, irrespective of the technology intensity of the sector, GVC participation significantly increased the wage gap between the skilled and unskilled workers. In terms of the coefficient of GVC, we observe higher wage inequality based on skill in the case of high-tech sectors. However, GVC participation has an insignificant impact on the gender wage gap (Table 9).

⁹ https://ec.europa.eu/eurostat/data/database.

¹⁰ Therefore, the association between GVC participation and employment for different subsamples is reported in Appendix C.

	Low-Tech Sector					High-Tech Sector				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		
Variables	Log Unskilled Wage	Log Skilled Wage	Log Male Wage	Log Female Wage	Log Unskilled Wage	Log Skilled Wage	Log Male Wage	Log Female Wage		
GVC	-0.005	0.0871***	0.017***	-0.042***	0.119***	0.224***	0.162***	0.114***		
	(0.004)	(0.008)	(0.005)	(0.007)	(0.005)	(0.010)	(0.006)	(0.011)		
Size	0.116***	0.262***	0.122***	0.127***	0.119***	0.258***	0.141***	0.155***		
	(0.0004)	(0.0008)	(0.0004)	(0.0008)	(0.0006)	(0.001)	(0.0007)	(0.001)		
Age	0.001***	0.001***	0.001***	0.001***	0.003***	-0.001***	0.003***	0.004***		
	(6.22e-05)	(0.0001)	(6.73e-05)	(0.0001)	(9.85e-05)	(0.0001)	(0.0001)	(0.0002)		
Capital	-0.019***	-0.043***	-0.009***	-0.021***	-0.028***	-0.043***	-0.029***	-0.050***		
Intensity	(0.0007)	(0.001)	(0.0007)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)		
Constant	8.497***	7.069***	8.455***	8.178***	8.676***	7.672***	8.376***	7.820***		
	(0.008)	(0.016)	(0.009)	(0.016)	(0.013)	(0.024)	(0.014)	(0.0314)		
Observations	270,115	236,636	242,514	83,843	101,922	95,055	96,690	27,410		
R-squared	0.445	0.421	0.418	0.450	0.438	0.411	0.456	0.467		

Table 8: GVC Participation and Wages by Technology Intensity

Standard errors in parentheses.

*** p<0.01. ** p<0.05. * p<0.1.

Table 9: GVC Participation and Wage Gap by Technology Intensity

	Low-Tec	h Sector	High-Tec	h Sector
	(1)	(2)	(3)	(4)
Variables	Wage Gap Skilled and Unskilled	Wage Gap Male and Female	Wage Gap Skilled and Unskilled	Wage Gap Male and Female
GVC	0.108***	0.023	0.251***	0.033
	(0.011)	(0.023)	(0.013)	(0.036)
Size	0.328***	-0.060***	0.310***	-0.050***
	(0.001)	(0.002)	(0.001)	(0.004)
Age	0.002***	-7.89e-06	-0.003***	0.002***
	(0.0001)	(0.0004)	(0.0002)	(0.0007)
Capital Intensity	-0.058***	0.040***	-0.049***	0.028***
	(0.001)	(0.004)	(0.003)	(0.008)
Constant	5.398***	-0.809***	6.356***	-1.150***
	(0.023)	(0.055)	(0.034)	(0.099)
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Observations	224,624	65,780	91,769	20,739
R-squared	0.354	0.038	0.346	0.017

Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

We conducted another subsample analysis based on the size of the establishment. We divided the data into micro, small, and medium enterprises (MSMEs). We classified an establishment as an MSME based on the value of investment in plant and machinery. Those units with less than one crore investment in plant and machinery were classified as micro firms; units with an investment of more than one crore and less than 10 crores were treated as small; and units with an investment of more than 10 and less than 50 crores were considered as medium firms.¹¹ The results are reported in Table 10.

¹¹ This classification follows the official classification by the Ministry of Micro, Small, and Medium Enterprises (https://msme.gov.in/know-about-msme).

	Місго							
	(1) Unskilled Wage	(2) Skilled Wage	(3) Male Wage	(4) Female Wage				
GVC	-0.04***	0.091***	-0.017**	-0.06***				
010	(0.007)	(0.012)	(0.007)	(0.009)				
Size	0 100***	0 234***	0.098***	0 109***				
0120	(0.0005)	(0.001)	(0,0006)	(0.001)				
Age	0.001***	0.0001	0.001***	0.001***				
7.gc	(7.40-05)	(0.0001)	(7.70-05)	(0.001)				
Capital Intensity	(7.46-03)	(0.0001)	0.0007	(0.0001)				
Capital Intensity	-0.014	-0.05	(0.001)	-0.01				
Constant	(0.001) 8 715***	(0.001)	(0.001)	(0.001)				
Constant	0.713	(0.021)	0.010	0.415				
Voor	(0.010)	(0.021)	(0.011)	(0.020)				
rear	Yes	Yes	Yes	Yes				
Industry	res	Y es	Yes	res				
Observations	217,299	180,707	193,725	61,908				
R-squared	0.394	0.339	0.367	0.434				
		Sn	nall	(0)				
	(5)	(6)	(7)	(8)				
	Unskilled	Skilled	Male	Female				
	0.005***	0.216***	0 12/***	0.071***				
GvC	0.095	(0.012)	0.124	(0.012)				
Size	(0.007)	(0.012)	(0.008)	(0.012)				
Size	0.069***	0.158	0.078****	0.0825				
A = -	(0.001)	(0.002)	(0.001)	(0.002)				
Age	-0.001***	0.002***	-0.001**	-0.001**				
• • • • • •	(0.0001)	(0.0001)	(0.0001)	(0.0002)				
Capital Intensity	-0.01***	-0.02***	-0.01***	-0.02***				
	(0.001)	(0.002)	(0.001)	(0.003)				
Constant	9.389***	9.225***	9.291***	9.141***				
	(0.022)	(0.040)	(0.025)	(0.048)				
Year	Yes	Yes	Yes	Yes				
Industry	Yes	Yes	Yes	Yes				
Observations	70,144	69,194	65,809	21,125				
R-squared	0.352	0.220	0.328	0.305				
		Mec	lium					
	(9)	(10)	(11)	(12)				
	Unskilled	Skilled	Male	Female				
01/0	wage	wage	wage	wage				
GVC	0.062^^^	0.154^^^	0.073^^^	0.027**				
	(0.006)	(0.011)	(0.007)	(0.013)				
Size	0.059***	0.124***	0.073***	0.071***				
	(0.001)	(0.002)	(0.001)	(0.003)				
Age	0.003***	0.0005**	0.003***	0.003***				
	(0.0001)	(0.0002)	(0.0001)	(0.0002)				
Capital Intensity	-0.01***	-0.01***	-0.02***	-0.03***				
	(0.001)	(0.003)	(0.002)	(0.003)				
Constant	9.732***	10.07***	9.568***	9.494***				
	(0.032)	(0.058)	(0.038)	(0.074)				
Year	Yes	Yes	Yes	Yes				
Industry	Yes	Yes	Yes	Yes				
Observations	46,875	46,744	44,791	15,511				
R-squared	0.326	0.196	0.311	0.289				

Table	10:	GVC	and	Wages	by	Firm	Size
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Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

Irrespective of size, the impact of GVC on wages in all the categories is positive and significant. The impact of GVC on wages reported in Table 10¹² shows that skilled workers substantially benefitted by the GVC participation across firm size. Further, wages of unskilled workers have a negative association with the GVC status of establishments belonging to micro and small categories. In the case of micro firms, all other categories except skilled workers have a negative association with GVC participation. These results indicate that as the size of the units increases, GVC participation has a positive association with the wages of all categories. The wage gap between skilled and unskilled workers is reported in Table 11. Regarding the wage gap, GVC participation has a significant positive association with the wage gap between skilled and unskilled workers in all the categories, while it has a positive impact on the gender wage gap in the case of small enterprises.

	Micro		Sm	all	Medium		
	(1)	(2)	(1)	(2)	(1)	(2)	
Variables	Wage Gap Skilled and Unskilled	Wage Gap Male and Female	Wage Gap Skilled and Unskilled	Wage Gap Male and Female	Wage Gap Skilled and Unskilled	Wage Gap Male and Female	
GVC	0.118***	0.0021	0.253***	0.096**	0.188***	-0.007	
	(0.018)	(0.033)	(0.016)	(0.041)	(0.015)	(0.039)	
Size	0.300***	-0.082***	0.189***	-0.0213**	0.142***	-0.004	
	(0.001)	(0.003)	(0.002)	(0.008)	(0.003)	(0.01)	
Age	0.0005***	0.002***	0.003***	-0.002***	-0.0005*	-0.0006	
	(0.0002)	(0.0005)	(0.0002)	(0.0007)	(0.0002)	(0.001)	
Capital Intensity	-0.049***	0.051***	-0.029***	0.011	-0.015***	-0.0273**	
	(0.002)	(0.0045)	(0.0035)	(0.010)	(0.0037)	(0.0116)	
Constant	5.746***	-0.503***	8.282***	-1.726***	9.432***	-1.896***	
	(0.031)	(0.071)	(0.053)	(0.170)	(0.073)	(0.223)	
Year	Yes	Yes	Yes	Yes	Yes	Yes	
Industry	Yes	Yes	Yes	Yes	Yes	Yes	
Observations	167,984	48,385	67,997	16,574	46,138	12,112	
R-squared	0.266	0.046	0.169	0.017	0.150	0.017	

Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

6. CONCLUSION

This study analyzed the impact of GVC participation on employment and wages in the Indian manufacturing sector using plant-level data consisting of 438,949 establishmentyear observations over the period 2010–2019. Our study finds that GVC participation is having a positive impact on employment in the Indian manufacturing sector. The results indicate increases in employment across all categories, including skill and gender. The results also indicate that the GVC impact on skilled workers is higher compared to unskilled workers. We observe that the average wage of skilled workers increased threefold compared to unskilled workers during our study period.

¹² We also analyzed the impact of GVC on employment in different categories of MSMEs; however, we did not find much variation among various categories of employment. Results are reported in Appendix D.

The results indicate that the wage gap between the skilled and unskilled increased due to the GVC effects in the Indian manufacturing industries. There are several policy implications from the widening wage gap in the domestic economy: (a) government should improve the skills of the unskilled workers through training and retooling of workers, (b) it is important to monitor the dynamics of the labor market as the GVC increases the unbundling effects of production and increases the structural transformation in the domestic economy, (c) GVC increases the service linkages and activities, and it will increase the demand for skilled workers in higher value-added services, and (d) there is a need to develop strong labor market institutions that create more forward-looking policies that will increase the "future skills" of domestic workers.

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APPENDIX A: YEAR-WISE NUMBER OF OBSERVATIONS

Year	No. of Enterprises	
2010	37,086	
2011	39,850	
2012	40,596	
2013	43,367	
2014	45,021	
2015	47,204	
2016	47,069	
2017	49,423	
2018	48,623	
2019	48,127	

APPENDIX B: RESULTS OF THE FIRST-STAGE REGRESSION (PROBIT MODEL)

Variables	GVC
GVCspt	6.435***
Control Variables	Yes
Constant	-6.364***
R-squared	0.22
Observations	438,949

Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

Dependent Variable: GVC_{it.}

APPENDIX C: IMPACT OF GVC ON EMPLOYMENT IN LOW-TECH AND HIGH-TECH FIRMS

	Low Tech				High Tech			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	Log Unskilled Workers	Log Skilled Workers	Log Male Workers	Log Female Workers	Log Unskilled Workers	Log Skilled Workers	Log Male Workers	Log Female Workers
GVC	0.606***	0.449***	0.288***	0.901***	0.313***	0.352***	0.246***	0.251***
	(0.010)	(0.008)	(0.012)	(0.013)	(0.011)	(0.010)	(0.014)	(0.015)
Size	0.463***	0.369***	0.430***	0.062***	0.507***	0.442***	0.415***	0.055***
	(0.0009)	(0.0007)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Age	0.005***	0.004***	0.012***	0.002***	0.003***	0.006***	0.010***	0.002***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0002)	(0.0002)
Capital Intensity	0.022***	-0.063***	-0.058***	0.120***	-0.008***	-0.088***	-0.029***	0.086***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Constant	-5.029***	-5.122***	-5.247***	-0.623***	-5.688***	-6.119***	-4.836***	-0.575***
	(0.018)	(0.014)	(0.021)	(0.024)	(0.027)	(0.24)	(0.032)	(0.034)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	270,168	270,168	270,168	270,168	101,942	101,942	101,942	101,942
Number of Year	10	10	10	10	10	10	10	10

Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

APPENDIX D: IMPACT OF GVC ON EMPLOYMENT IN MSME

	Micro								
Variables	(1) Log Unskilled Workers	(2) Log Skilled Workers	(3) Log Male Workers	(4) Log Female Workers					
GVC	0.833***	0.450***	0.330***	1 208***					
010	(0.0150)	(0.0101)	(0.0161)	(0.0182)					
Sizo	0.347***	0.242***	0.320***	0.0457***					
Size	(0.00118)	(0.00800)	(0.00127)	(0.0437					
Age	_0.000530***	0.000881***	0.004/0***	0.00147***					
лус	(0.000152)	(0.000001	(0.000163)	(0.00147					
Capital Intensity	0.0780***	0.000103)	0.0101***	0.165***					
Capital Intensity	(0.00170)	-0.0213	-0.0191	(0.00206)					
Constant	-3 188***	(0.00113)		(0.00200)					
Constant	-3.100	-3.077	-0.441	-0.331					
Voor	(0:0221)	(0.0149)	(0:0237)	(0.0207)					
rear Inductra	res	res	fes	res					
ndustry	res	res	res	1 es					
Observations	217,343	217,343	217,343	217,343					
R-squared	0.407	0.378	0.329	0.213					
		5	Small	(0)					
	(1)	(2)	(3)	(4)					
Variables	Log Unskilled	Log Skilled	Log Mole Werkere	Log Female					
	0.214***	0.240***		0 400***					
GVC	0.214	0.240	(0.0108)	0.423					
Ci=o	(0.0150)	(0.0120)	(0.0198)	(0.0209)					
Size	0.316	0.245	0.226	0.0492					
A	(0.00240)	(0.00201)	(0.00316)	(0.00334)					
Age	0.0112***	0.00317***	$0.0177^{}$	0.00525***					
A N N N	(0.000223)	(0.000187)	(0.000294)	(0.000311)					
Capital Intensity	-0.0249***	-0.0537***	-0.00311	0.00985**					
a	(0.00313)	(0.00263)	(0.00413)	(0.00437)					
Constant	-2.206***	-2.793***	-1.492***	-0.288***					
	(0.0470)	(0.0395)	(0.0620)	(0.0656)					
Year	Yes	Yes	Yes	Yes					
Industry	Yes	Yes	Yes	Yes					
Observations	70,153	70,153	70,153	70,153					
R-squared	0.325	0.273	0.167	0.200					
		M	edium						
	(1)	(2)	(3)	(4)					
M. 1.1.1.	Log Unskilled	Log Skilled	1 N . I . N/ . I	Log Female					
Variables	Workers	Workers	Log Male Workers	Workers					
GVC	0.137***	0.173^^^	0.0994^^^	0.341^^^					
	(0.0125)	(0.0128)	(0.0192)	(0.0234)					
Size	0.230***	0.219***	0.175***	0.0428***					
	(0.00289)	(0.00298)	(0.00446)	(0.00543)					
Age	0.0101***	0.00907***	0.0188***	0.00366***					
	(0.000245)	(0.000252)	(0.000377)	(0.000459)					
Capital Intensity	-0.00287	-0.0487***	-0.0120**	0.00843					
	(0.00315)	(0.00324)	(0.00484)	(0.00591)					
Constant	0.172***	-1.799***	0.207**	-0.0876					
	(0.0610)	(0.0628)	(0.0939)	(0.115)					
Year	Yes	Yes	Yes	Yes					
Industry	Yes	Yes	Yes	Yes					
Observations	46,886	46,886	46,886	46,886					
R-squared	0.262	0.220	0.141	0.232					

Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.