Article

Working Conditions, Export Decisions, and Firm Constraints-Evidence from Vietnamese Small and Medium Enterprises

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Abstract: Better working conditions promote employee creativity and loyalty. Meanwhile, a stable and skilled workforce contributes to a firm's sustainable growth. Therefore, providing favorable working conditions is one of the critical sustainable goals of many countries worldwide. However, some critics are concerned participating in international trade causes worsening employment conditions in developing countries. Driven by these concerns, the relationship between exports and labor conditions is worth illuminating. This study adopts the data from Vietnam's small and medium-sized manufacturing enterprises (*SMEs*). The dataset was collected by the Ministry of Labour, Invalids and Social Affairs (*MOLISA*) and the University of Copenhagen, *UNU-WIDER* from 2011 to 2015. Unlike previous studies, this study clusters firms by export status, including four groups: non-exporting, consecutive exporting, start-exporting, and exit-exporting. Observing dynamic exports sheds light on the effects of export decisions more thoroughly than the static export. Another contribution, this study focuses on an essential aspect of working conditions: providing fringe benefits. Subsequently, the analysis is upgraded by controlling for firm constraints as interaction variables. A major constraint and financial constraint are adopted to proxy for a firm's constraints. This work promotes assessments to be more accurate, thereby providing more valuable information to policymakers. Finally, a robustness test is applied to each type of fringe benefit. Instrumental variables are used to solve the problem of endogeneity. The results found that exporting firms provide better working conditions. Additionally, constrained firms have worse working conditions.

Keywords: working conditions; fringe benefits; export; SMEs; instrumental variable; probit regression; Vietnam

1. Introduction

The 2030 Agenda for Sustainable Development [1] affirmed the role of sustainable work in the firm's growth and society. Accordingly, sustainable work provides favorable working conditions for workers and supports their lives. Better working conditions might increase labor productivity, decrease work-related risks and create many innovative initiatives for firms. These results positively impact the firm's revenue and reputation. In other words, better working conditions help employees work better and create a firm's sustainable development. Therefore, the human factor is emphasized in the concept of sustainable development. Employees must be guaranteed a safe working environment, basic welfare, and decent compensation.

However, changes in society and the economy significantly affect employment [2]. Firms devise internationalization strategies to adapt to new markets and societal requirements. Fierce competition caused by the expansion of international trade has stimulated enterprises to cut costs, improve product quality, and reallocate resources [3]. At the same time, firms raise their expectations about employee flexibility and dedication [4,5]. In addition, Idris's research [6] pointed to evidence that globalization increases workload pressure. Workers are under more psychological pressure about threats of being fired

or making mistakes. In addition, Fenner [7] showed that the development of modern information technology and the availability of the Internet facilitates employees to become more and more involved in additional work-related activities. The flip side of the problem is that employers can be overly demanding about employees' availability [8]. Consequently, employees become more stressed, which can lead to physical and mental impairment. Therefore, many authors have recognized that today's socio-economic development can be a risk factor for working conditions [2,6,9]. Studying the impact of economic and social factors on working conditions becomes more important.

Driven by the role and number of small and medium enterprises (*SMEs*) globally, raising working conditions in this region is vital. *SMEs* account for more than 90% of firms worldwide and contribute significantly to employment (https://www.worldbank.org/en/topic/smefinance, accessed on 23 May 2022). According to Champoux [10], during the 1990s, *SMEs* provided about 38% of total jobs worldwide. From 2002 to now, *SMEs* create about 80% of new jobs annually [11]. *SMEs* contribute 67% of employment in European countries. This ratio is higher in Asia Pacific markets, accounting for more than 70% of total employment [12]. Despite the growing role of *SMEs*, working conditions in this sector are a matter of concern. Many studies suggest that large firms offer better working conditions than *SMEs* [13,14]. Champoux [10] and Holmes [15] agreed that employees in *SMEs* are young, inexperienced, low educated, and lack awareness of risks. Therefore, *SMEs*' risk of accidents is higher than their counterparts. In addition, many *SMEs* have financial constraints. They prefer to prioritize investing in activities that bring short-term benefits than investment in occupational safety and social security for employees. Because ensuring labor safety and social security are beneficial in the long run [16]. ILO [17] compared working conditions in *SMEs* and large firms in the *EU*. Although wages in *SMEs* are only one-third of wages in large firms, the working environment in *SMEs* is more dangerous and toxic. 80% of occupational accidents occur in *SMEs*. In France and Japan, 2% of *SMEs* have a union in their firm. The rate is 15% in the Netherlands and 13% in Ireland. Therefore, labor relations and collective bargaining in *SMEs* are weak. Furthermore, working hours per capita tend to be higher in small firms than in others, particularly in Brazil and India. Working overtime on weekends is common in many countries worldwide. In Vietnam, more than 95% of firms operating in the Vietnamese market are *SMEs* [18]. *SMEs* have contributed about 41% of *GDP*, accounting for a third of total state budget revenue. At the same time, *SMEs* also attracted more than 61% of the total workforce in factories. Besides, *SMEs* contributed 33% to the value of industrial output and 30% to the value of exported goods. Many firms forced employees to work more than 8 h per day. In particular, about 40% of employees must work 40–48 h/week on average, about 35.8–39% of employees work more than 48 h a week every year, and over 11% work more than 60 h a week. Moreover, with seasonal employment characteristics and short-term labor contracts, many *SMEs* have not ensured benefits for insurance and other non-financial benefits for workers. Therefore, it becomes urgent to study the factors that can promote better working conditions in Vietnamese *SMEs*.

First, this study analyzes the effect of export on working conditions, adopting firm-level data from Vietnam. The *SME* survey was conducted biennially by the Ministry of Labour, Invalids and Social Affairs (*MOLISA*) and the University of Copenhagen, *UNU-WIDER* on more than 2500 manufacturing firms from 2011 to 2015. This study fills a gap in research on working conditions in *SMEs*, which is poorly known [17]. The highlight is that firms are clustered by export status, including four groups: non-exporting, consecutive exporting, start-exporting, and exit-exporting. Observing dynamic exports sheds light on the effects of export decisions more thoroughly than the static export. Another important contribution that differentiates this study from the previous research is its focus on a lesser-known aspect of working conditions: nonwage benefits (also known as fringe benefits). Fringe benefits play a critical role in increasing job satisfaction and ensuring physical and mental health for employees [19]. Job satisfaction and happier life are likely to boost workers' dedication and loyalty. In other words, fringe benefits act as magnets

to help firms attract and retain employees. For that reason, nonwage benefits are an issue that attracts the attention of employees, firms' managers, and policymakers. These benefits enhance jobs' attractiveness and motivate employees. Additionally, "*the proximity to airport*" is used as an instrumental variable to solve the problem of endogeneity. This method of constructing instrumental variables is inspired by Tanaka's research [20] but applies to specific characteristics of Vietnam. This new point has not been approached in the Vietnamese literature stream. Second, this study scrutinies the relationship between export and working conditions under a firm's constraints. A firm's operation obstacles play an essential role in decisions on the distribution of benefits to employees [13]. For example, financial constraints are one of the leading difficulties affecting the operation and development of Vietnamese *SMEs*. According to Rand [21], only one-third of *SMEs* accessed bank loans, while three-quarters of these firms had credit needs in the period 2012–2017. Nearly 62% of *SMEs* are dissolved or temporarily suspended due to lack of finance. This fact shows that a firm's constraints can significantly hinder its survival and development. Indirectly, a firm's constraints can affect working conditions and can moderate the effect of exports. A major constraint (lack of qualified human resources, lack of marketing service or transport facilities, too fierce competition in the market, and lack of technical know-how) and financial constraint are adopted to proxy for a firm's constraints. Controlling constraints as an interaction variable in the relationship between exports and working conditions is a novelty. This work promotes assessments to be more accurate, thereby providing more valuable information to policymakers. Then, the paper conducts a robustness test to observe the impact on each type of fringe benefit. Ten fringe benefits refer including social insurance, health insurance, unemployment insurance, compensation for accidents, sick leave, paid maternity leave, unpay maternity leave, annual leave, retirement, and survival benefits. The findings provide some policy implications for Vietnam to support firms in entering international markets and improving workers' working conditions.

In the remainder of the paper, the literature review is provided briefly in Section 2. Section 3 presents the data and variables. Subsequently, empirical specifications are analyzed. All results are discussed in Section 4. Furthermore, finally, Section 5 is a conclusion.

2. Literature Review

The terminology "sustainable" or "sustainable development" is diverse and commonly used in many fields. Sustainable development is one of the top goals of firms around the world. A sustainable firm means that it must harmoniously combine the firm's interests, the environment, and labor [22]. More specifically, business strategies need to meet the needs of enterprises and stakeholders (related to profits, market share, innovation, etc.). At the same time, those strategies need to be environmentally friendly and ensure the rights of human resources. According to the International Labor Organization [17], working conditions refer to monetary factors (such as wages and bonuses) and non-monetary factors (such as working hours, rest periods, employee benefits, and workplace). In 2007, *ILO* developed the concept of decent work: "Decent work consists of four issues, namely (1) full employment of human rights with the right individual qualifications; (2) employment with acceptable, equal conditions, with the opportunity to develop and improve personal skills; (3) employment with social security, safety at work towards health care and risk prevention; (4) employment has social dialogue through freedom of association, freedom of speech" (https://www.ilo.org/global/topics/decent-work/lang--en/index.htm, accessed on 23 May 2022). As such, ILO emphasizes the contribution of non-wage factors in ensuring better working conditions. Employee benefits are a key factor in determining the relationship between employees and employers. Regarding employee benefits, scientists focus on some aspects such as working hours (office hours, overtime, unpaid hours), psychological workload, discrimination in the workplace [23,24], occupational safety compliance (fire safety interval, health management), freedom of negotiation [20], consolidation [25] and fringe benefits [26].

Many previous studies have identified the importance of working conditions for enterprises' sustainable development. Delmas [27], Ahmed [28], Adhikari [29], Sharma [30], Chen [31], and Sauermann [32] agreed that applying new technology, approaching new production processes, or inventing new products are the root of sustainable development. Equality and recognition in the workplace motivate workers to participate more in organizational initiatives. Meanwhile, employees are firms' valuable assets, so labor is the main factor promoting innovation. The author found that the compensation outside the salary creates employee satisfaction. These benefits can influence the worker's behavior, reducing the negative psychology caused by pressure and workload. Di Fabio [33] said that in addition to a safe and friendly working environment, employee satisfaction creates sustainable work. Because those additional benefits beyond salary have the potential to improve long-term happiness for employees, making them continue to stay at work in the long run. Besides, Edmans [34] proved that employee satisfaction could increase shareholder returns. His results showed that firms need to continually create and maintain a friendly working environment to make their employees more innovative. Recognizing the importance of employee benefits, the Agenda 2030 by the Sustainable Development Goals (SDGs) determined it is one of the 17 essential goals of sustainable development (United Nations. UN, A/RES/70/1. Transforming Our World: The 2030 Agenda for Sustainable Development, United Nations Official Document. Available online: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E, (accessed on 23 May 2022)).

Numerous experts found a relationship between international trade and labor conditions in the previous literature, but not consistently across all economies. Based on Rice [35] and Blanchflower [36], Kristal [26] explained the impact of exports on workers' ability to receive fringe benefits through a firm's profitability. By linking industrial-level data to individual-level data in Israel, he found that exporting firms gain higher profits than domestic firms. Therefore, exporting enterprises can invest more in employees (including salary, bonuses, and compensation). Conversely, firms with lower profits may reduce their ability to pay workers. Numerous scientists agreed that improving working conditions accompanies improving product quality standards. For example, Robertson [37] analyzed the link between globalization and employment conditions in developing countries using country-level data. In their study, he showed that characteristics of exported goods (such as requiring technological complexity, standards to produce goods, or simply assembling, such as in the garment and assembly industry), and the characteristics of the exporting partner, might all contribute to the change in working conditions. For example, partners in the export market such as Japan, Germany, and the EU require many strict standards regarding product quality, equipment, and environmental protection. These requirements require skilled labor and high labor productivity. As a result, firms offer higher-level fringe benefits to attract these laborers. These findings were similar to previous empirical research such as Elliott [38]. According to Kremer [39], an upgrade in quality standards increases the need for a more highly skilled workforce. As a result, firms offer higher wages or more allowances to attract and retain these highly skilled workers. Consequently, workers in professional jobs are also more likely to receive higher welfare [40]. Moreover, several studies found evidence of the relationship between working conditions and the openness of the economy. Flanagan [41] showed that the per capita income of a country has a significant influence on labor conditions. Workers in fast-growing economies are more likely to enjoy better labor benefits. In addition, Busse [42] argued that an open economy could create more jobs with higher incomes for working-age workers. Indirectly, children are not forced into the labor force because their parents' income can cover the family's living expenses. Greenhill [43] found no evidence of a relationship between economic openness and labor standards across 90 developing countries. However, a country's labor standards are likely to improve if the partner has higher labor standards. This finding supports the view of a positive effect of international trade on employment.

Besides the bright side, many researchers are concerned about the negative effects of international trade on working conditions. According to Blattman [44], workers in industrial zones are 3.3% more likely to suffer from health deterioration than workers in other areas. In addition, the working environment in industrial plants could be more hazardous than in other industries. McManus [45] said that fierce competition in export markets increases the rate of workers' injury. In particular, the study investigated the relationship between the injury rates of US export factories in 1996–2007 and import growth in China. The results presented that factory accident rates occur more frequently as the demand for imported goods in foreign markets increases. This negative impact in small firms (less than 50 employees) is more significant than in enterprises with more than 1000 employees (13% compared to 2%). Blair-Loy [46] and Flanagan [41] argued that international trade does not negatively affect total standard working hours. However, there is evidence that boosting exports puts workers under pressure to work overtime. Many exporters are forced to cut costs, shorten production times and lower product prices under the pressure of export costs, large transaction volumes and competition in foreign markets. These obstacles can induce the firm to intentionally violate minimum labor standards such as using child labor and forcing workers to work overtime, even when there is no overtime pay [47]. Similarly, Virtanen [48], O'Reilly [49], Kivimaki [50] concured that morbidity, hypertension, stress, and even mortality rates in exporting firms are higher than in domestic firms. An excessive effort to achieve high labor productivity can expose workers to potential health risks [51]. As a result, many firms offer better compensation policies for workers such as health insurance, accident compensation, paid sick leave, etc. These findings were supported by the empirical study of Tanaka [20]. Her study found a positive impact of exports on improving the working conditions of firms in Myanmar's textile industry. Exporting firms pay more attention to fire safety management and labor health. International labor standards are also strictly complied. Besides, export firms are more likely to offer employees a higher salary and other non-salary benefits. Nonetheless, export activity is not the cause of longer working hours (the coefficient between exports and working hours is not statistically significant).

Notably, some authors pointed out that financial constraints affect welfare distribution decisions. As with other activities, firms must use internal capital or external financial sources to invest in employees. A firm's remuneration policy for employees is costly [52]. Therefore, the labor policy depends on the financial viability of the enterprise and its capital structure. Results on Compustat industrial firms in 1950–1993 found that wages and worker benefits in financially constrained firms were less generous than their counterparts. Besides, the authors found that the rate of job cuts is likely to be directly proportional to corporate debt. However, this result did not imply that a firm will make payroll cuts when it starts incurring debts. This study suggested that a firm should establish a clear plan and appropriate debt ratio within its tolerance threshold. In addition, debt firms tend to use more seasonal and part-time employees to relieve pressure on salary and benefits. These conclusions reflexed financial shortfalls significantly affect employment policy and working conditions. Subsequently, Cohn [53] found a negative relationship between financial constraints and workplace safety in US firms from 2002 to 2009. Financial constraints lead to tightening investment activities, especially investment in occupational safety. As a result, workplace injuries were higher in financially constrained firms than in their counterparts. Boubaker [54] illustrated the close relationship between employee benefits and debt maturity time of enterprises. Firms had higher equity leverage if they preferred to approach long-term debt. Long-term debt, which has low financing costs and flexible interest rates, can help firms increase liquidity and access available liquid assets. In addition, Nickell [55] demonstrated that short-term employment is likely to decline by nearly 3% if interest rates rise from 5% to 8%. As a result, firms that had long-term debt might be able to provide better working conditions for employees. However, accessing long-term loans requires firms to meet more stringent standards, especially for *SMEs* [56].

Although nonwage benefits have received much attention from researchers worldwide, there have not been many studies on this aspect in Vietnam. According to Hansen [57], in the period before Vietnam joined the WTO, only large companies pay attention to the provision of fringe benefits. Since 2008, Government has paid more attention to ensuring employee benefits, especially at *SMEs*. Many supportive policies have been introduced, such as amending the labor code, building an insurance fund, enforcing the law on occupational safety, etc. Those actions of the government also contribute to attracting the attention of researchers in this field. A few prominent studies, such as Rand [58], Trifkovic [59] demonstrate the influence of owner gender and international management standards on the ability to receive fringe benefits of employees. The analysis regarding firms' constraints and ability to provide better working conditions is missing in Vietnam.

3. Empirical Specification

3.1. Data Source

This study uses a dataset collected by the Ministry of Labour, Invalids and Social Affairs (*MOLISA*) and the University of Copenhagen, *UNU-WIDER*. Enterprise surveys are conducted every two years on more than 2500 SMEs. This survey associated general characteristics of enterprises, financial situation, production characteristics, technology, sales structure, human resources, export situation, etc. As explained by *UNU-WIDER*, the samples were selected for the survey according to the inheritance principle. For example, the 2013 survey approached firms that were surveyed in 2011. If a firm dissolved, it would be replaced by a similar firm in the province. The proportion of firms in each region depends on the total number of enterprises registered. The study excludes firms that lack information on working conditions and exports. Furthermore, it removes unnecessary variables. In the end, the remainder for analysis was 6123 observations for the three surveys.

3.2. Working Conditions

Besides salary and working environment, fringe benefits bring job satisfaction and happier life [13]. Therefore, fringe benefits are one of the top concerns when employees seek and decide on a job. Fringe benefits refer to insurances, pensions, scholarships, accommodation, kindergartens, education, transportation, rest, recreation facilities, v.v. Providing fringe benefits is applied famous worldwide [60]. Thus, I use fringe benefits to represent working conditions in this research.

First, I am interested in implementing a social insurance regime for employees. This insurance aims to compensate part or all of an employee's income when their income is lost due to illness, maternity, work accident, occupational disease, end of working age, or death (Article 3, Law on Social Insurance 2014 Vietnam clearly states the concept of social insurance). Therefore, compliance with social insurance is one of the prerequisites in ensuring the rights of employees. However, according to [18], 31.12% of the labor force participated in compulsory social insurance in 2020 (Not all employees are eligible to participate in mandatory social insurance. According to the regulations, participants in social mandatory insurance will have to comply with the general payment rate, method, and time of payment. In contrast, voluntary social insurance participants can choose the payment level and manner suitable to their income.) (down 1.12% compared to the same period in 2019). Among workers who are not eligible for compulsory insurance, just over 2% pay for social insurance by themselves. Thus, up to 66.5% of the working-age labor force did not participate in social insurance, mainly farmers and workers in the informal sector. I create a dummy variable *fsocial*, which takes the value one if the employer answers Yes to the question: *"Did you pay a contribution to social insurance for your employees?"* and 0 if the answer is No.

Health insurance is convenient in improving working conditions for employees. Depending on the target group, health insurance may pay part or all of the cost of medical examination and treatment according to the Ministry of Health regulations. Therefore, participating in health insurance brings peace of mind to employees, especially in low-

income households. I create a dummy variable $fhealth$, which takes the value 1 when the employer answers Yes to the question: *"Did you pay a contribution to health insurance for your employees?"*, takes the value 0 when the answer is No.

Unemployment insurance is a mode of compensating a part of an employee's income when they lose a job. This insurance scheme also supports workers to improve their knowledge to find a new job (Employment Law 2013). Therefore, this insurance is essential for employees, helping to share the financial burden while they cannot find a job. The above information is collected based on the question *"Did you pay a contribution to unemployment insurance for your employees?"*. I create a dummy variable named $funemp$, which takes the value one if the answer is yes and 0 if otherwise.

Despite regulations on occupational safety, many Vietnamese firms have not yet complied with regulations on labor protection. More than 52% of workers work in vulnerable jobs (According to the ILO, vulnerable jobs are those that provide inadequate income, low productivity and difficult working conditions that deprive workers of basic rights) in Vietnam [18]. Therefore, the average salary received by workers is not enough to compensate for the damage caused by poor working conditions. Thus, direct compensation for workers suffering from occupational accidents or diseases creates an advantage for the job. Ensuring the payment of these compensations contributes to a healthy and attractive work environment. In this research, I am interested in the question: *"Do you normally compensate your workforce directly for accidents or professional illness?"*. The dummy variable $facc$ takes the value one if the business pays the compensation; otherwise, it receives 0.

In addition, I consider the compensation of sick leave, maternity leave, annual leave, leave, retirement, and death. Many workers bypass these benefits. because of a lack of knowledge and having no experience in negotiating with employers. Therefore, these interests are the leading cause of disputes in labor relations. I collected information from the questions in the survey, including *"Do the employees enjoy Sick leave with pay?"*, *Do the employees enjoy the Right to paid maternity leave?"*, *"Do the employees enjoy the Right to unpaid maternity leave?"*, *"Do the employees enjoy Annual leave with pay?"*, *"Do the employees enjoy any payment (lump-sum) when a worker retires?"* (Conditions to be paid a pension: employees reach retirement age (60 years old for men, 55 years old for women—if the employee works in coal mining, hazardous environment, the age requirement might less) and participate in social insurance for full 20 years. Suppose the employee does not have both of the above conditions. In that case, they can enjoy a lump-sum pension), and *"Do the employees enjoy Survival Benefit (family)? (The worker's family members can receive benefits if the worker died"*). Then, I created dummy variables, named as $fsick$, $fpmat$, $fumat$, $fleave$, $fretire$, and $fsurvive$, respectively. Dummy variables take the value one if the answer is Yes; otherwise, it takes 0.

In summary, I utilize ten criteria to represent working conditions in this study. They include contributing to social insurance for employees ($fsocial$); contributing to health insurance for employees ($fhealth$); compensating the workforce directly for accidents or professional illness ($facc$); employees enjoy sick leave with pay benefits ($fsick$); employees enjoy the right to paid maternity leave benefits ($fpmat$); employees enjoy the Right to unpaid maternity leave benefits ($fumat$); employees enjoy annual leave with pay benefits ($fleave$); employees enjoy any payment when they retire ($fretire$); employees enjoy survival benefits family ($fsurvive$), and contribute to unemployment insurance for their employees ($funemp$). The ten variables above are indicator variables. In reality, a firm often provides more than one benefit to its employees, so the working condition improves with the number of benefits offered. To comprehensively estimate the impact of exports on the overall working condition, I rate the working condition on a scale of 0 to 1. The value of the score variable (named *Score*) is close to 1, the working condition is better, and vice versa. I use the average method to calculate the value of the score variable. Thus, the variable *Score* is the average of the ten working conditions above.

3.3. Estimation Strategy

3.3.1. The Effect of Export Participation on Working Conditions

First, the average score (denoted as *Score*) is generated to represent working conditions. Its value is the average of ten fringe benefits variables, including $fsocial$, $fhealth$, $facc$, $fsick$, $fpmat$, $fumat$, $fleave$, $fretire$, $funemp$ and $fsurvive$. The impact of export decisions on working conditions is elucidated in the model below.

$$Scoreit_{its} = \alpha_1 + \beta_1 \cdot ExD_{its} + \lambda_1 \cdot Control_{its} + v + \gamma + \epsilon_{its} \quad \text{(Model 1)} \quad (1)$$

where subscript i, t, s denote firm, year, and sector, respectively. v, γ are year and sector fixed effects. ϵ_{its} is an error term. All margin effects are reported. The export participation (denoted as ExD_{its}) is a binary variable. Its value equals 1 if a firm exports, 0 if otherwise. $Score_{its}$ is the working condition score of a firm i at a time t. $Control_{its}$ is the set of control variables. This model control both firm characteristics and owner characteristics. Similar Rand [21], Jowett [61], Trifkovic [59], control variables include firm age (marked as *firmage*), a form of ownership (denoted as *legal*) (Firm legal include Household establishment/business (1), Private (sole proprietorship) (2), Partnership (3), Collective/Cooperative (4), Limited liability company (5), Joint stock company with state capital (6), Joint stock company without state capital (7), Joint venture with foreign capital (8), State enterprise (central) (9), State enterprise (10)), the proportion of unskilled workers (*unskilled*) and the number of irregular workers (*casual*). Moreover, many previous studies demonstrated the key role of trade unions. Freeman [25] believed that the trade union is a bridge in resolving conflicts between employees and employers. Besides, the Trade Union coordinates with a firm to build collective bargaining agreements and internal labor regulations. This means that unions are involved in formulating strategies on working hours, occupational safety, insurance, and health care [62–65]. Therefore, the existence of trade unions in enterprises can improve working conditions. This study utilize union as a control variable (denoted as *union*). It takes the value one if the firm answers Yes for the question: "*Does the enterprise have a local/plant level trade union/employee representative organization?*" and 0 otherwise. Besides firm characteristics, employers' idiosyncratic significantly impact on providing non-wage benefits [21,66,67]. Therefore, this study selectes owner gender (*gender*), the highest general education completed (*edubasic*) and the owner/manager's highest professional education (*eduprof*) to add in the set of control varriables.

Notably, endogenous issues need to be considered in this model. In the Keynesian view, the increase in labor force size, capital stock, human capital, and technical change are the main causes of endogenous problems [68]. Besides, Schank [69] suggested firm characteristics, for instance, the management of a firm's production processes or a firm's networks might influence its export decisions, but these factors have not been observed. Thus, the regression might be biased. Numerous previous studies identify the export decision's endogenous problem, where an export variable correlates with the error term [20,70,71]. Therefore, this study deals with endogenous problems so that the regression results are not biased. According to Rodriguez-Pose [72], Farole [73], geographical factors impact on export decision. *SMEs* tend to export more to countries adjacent to their locations [74,75]. They leverage their familiarity with trading cultures and practices to gain competitive advantages. Besides, logistics is costly and risky if the distance is large. Long shipping times also affect the firm's liquidity if they export to distant destinations. According to Tanaka [20], a firm's location near the airport is an export advantage. The convenience of transportation benefits both buyers and sellers, such as saving time and freight costs and creating favorable conditions for partners to survey and sign contracts. Therefore, foreign partners prefer firms located in convenient traffic areas, closer to the airport. In other words, a favorable geographical location can promote exports. Thus, proximity to the airport might be selected as the instrumental variable to solve the model's endogenous problem (Similar to Tanaka). However, the Vietnamese SME survey does not publish firm-specific addresses. Firms only provide information about the district and province. Therefore, this

study uses district and province to determine the distance to the international airport. In sum, I create an instrumental variable to represent the proximity to the airport via district code (denoted as $airport_d$). This dummy variable takes on a value of 1 if a firm is located near the airport and 0 if otherwise (See Appendix A for more detail). Then, all the models are regressed by the IV-Probit method.

Second, I cluster firms into four groups by export status because the static method does not observe the effects caused by changes in export status. Stopping export might imply weak performance, and reduced or lost profit. In this case, a firm might gradually tighten operation costs, reducing the provision of benefits to employees. The effect of export status on working conditions is illumined in the following models:

$$Scoreit_{its} = \alpha_2 + \beta_2 \cdot Starter_{its} + \lambda_2 \cdot Control_{its} + v + \gamma + \epsilon_{its} \quad \text{(Model 2a)} \quad (2)$$

$$Scoreit_{its} = \alpha_3 + \beta_3 \cdot Exiter_{its} + \lambda_3 \cdot Control_{its} + v + \gamma + \epsilon_{its} \quad \text{(Model 2b)} \quad (3)$$

$$Scoreit_{its} = \alpha_4 + \beta_4 \cdot ConEX_{its} + \lambda_4 \cdot Control_{its} + v + \gamma + \epsilon_{its} \quad \text{(Model 2c)} \quad (4)$$

$$Scoreit_{its} = \alpha_5 + \beta_5 \cdot NonEX_{its} + \lambda_5 \cdot Control_{its} + v + \gamma + \epsilon_{its} \quad \text{(Model 2d)} \quad (5)$$

in which:
(i) *Starter* is a firm that engages in the export market at time t and does not export at time $t-1$.
(ii) *Exiter* is a firm that stops exporting at time t, although they exported at time $t-1$.
(iii) *ConEX* is a firm that exports at the time (t) and time ($t-1$).
(iv) *NonEX* is a firm that do not export at the time (t) and time ($t-1$).

3.3.2. The Effect of Export on Working Conditions under Firm Constraints

Lack of capital, lack of skilled workers, fierce competition, etc. are typical difficulties for SMEs (Worldbank). These obstacles have a significant impact on firms' investment policies and decision-making. To exemplify, Leonidou [76] focused on non-exporters perceptions about export. In particular, the author assessed why a firm fails to export or does not enter export markets. The fierce competition from the international market and the inability to compete on price are considered by firms as the two main causes directly leading to hindering exports. Besides, some other studies such as Rantanen [77], Shoham [78], Coad [79] presented that internal barriers such as shortage of skilled workers, and outdated scientific and technical qualifications are likely to affect a firm's productivity. Low labor productivity limits the firm's competitiveness, especially in foreign markets Bernard [80], and Delgado [81]. In addition, institutional barriers (such as obstacles in obtaining business licensing and permit, unstable state policies, and the excessive intervention of the authorities) are also likely to hinder the firm's possibility of engaging foreign markets [82,83]. As a result, operational constraints will likely increase the sensitivity between corporate decisions and employee welfare. Therefore, controlling for obstacles as a moderator variable is necessary for testing in my model.

In this section, a firm's constraints are proxied by two methods: First, a firm's self-assessment information about a major constraint (denoted as *constraint*) is utilized. *constraint* is a dummy variable collected from the question in the survey: "*Does your firm have a major constraint to growth?*". The variable gets the value of one if the firm's answer is Yes, and 0 if the firm's response is No. The firm's major obstacles include lack of qualified human resources, lack of marketing service or transport facilities, too fierce competition in the market, and lack of technical know-how. Second, a financial constraint is emphasized. Pissarides [84] argued that underdeveloped capital markets and the instability of developing economies are the reasons for the lack of finance of *SMEs*. Similarly, Wang [85] agreed that credit supply from financial institutions is influenced by the lack of management experience, low quality of labor, inadequacies in banking supervision, and macroeconomic policies. Banks that are unwilling to lend have increased pressure on available capital sources, thus affecting the firm's ability to access capital. As a result, the

firm's activities are limited. Lack of finance directly affects the growth of a firm's sales and exports [84] and leads to a weaker firm's growth [86]. Therefore, I want to analyze financially constrained and unconstrained firms separately. Thereby, the impact of exports on employment conditions under financial constraints is scrutinized. Financial constraints reflect a firm's impediment to access credit in the formal financial markets. This indicator is not available on the balance sheets of Vietnamese enterprises. The measurement method is similar to the one mentioned in Phan [87]. The financial constraint variable (marked as *FIN*) is binary, takes a value equal to 1 if the firm has credit constraint, and 0 otherwise. In particular, unconstrained firms have been granted all loan requirements and no longer have any credit requirements or those who have not applied for credit because there is absolutely no need. In contrast, constrained firms are those that (i) have been denied credits or, (ii) have only partially accepted and still have a capital demand or, (iii) need credit but cannot access a loan.

To determine the effects of export on working conditions under firm constraints, I estimate Model 3 below:

$$Score_{its} = \alpha_6 + \beta_6 \cdot ExD_{its} + \gamma_6 \cdot ExD_{its} \cdot X_{its} + \lambda_6 \cdot Control_{its} + v + \gamma + \epsilon_{its} \quad \text{(Model 3)} \tag{6}$$

where $X_{its} = (constraint, FIN)$ is the set of constraints in firm growth.

IV-Probit method is applied with *"the proximity to airport"* as an instrumental variable. All margin effects are reported.

3.3.3. Further Sensitive Analysis

Although the average score used in the main analysis is simple, easy to calculate, and might provide an overview of the current firm's working condition. However, this calculation does not provide information on the specific workers' interests. Meanwhile, the impact of exports on each type of labor welfare will not be the same. Therefore, I examine the effect of exports on each fringe benefit in this section. Expected results highlight welfare categories sensitive to changes in exports. Based on that, it can add helpful information for government in making appropriate policies to protect the rights and increase benefits for workers. However, the most severe obstacle for *SMEs* in Vietnam is financial constraints. Although government has introduced many measures and capital support packages for firms, more than three-quarters of enterprises still face difficulties obtaining bank loans to varying degrees (Reports of the Ministry of Industry and Trade https://moit.gov.vn/en, accessed on 16 May 2022). A lack of capital can lead to growth stagnation as the company may not have the necessary resources to expand. Consequently, it might lead to the eventual failure of the company. Thus, I focus only on financial constraints and observe the interaction of this factor with the relationship between export and working conditions.

To do so, the model below is regressed:

$$Working\ condition_{its} = \alpha_7 + \beta_7 \cdot ExD_{its} + \gamma_7 \cdot ExD_{its} \cdot FIN_{its} + \lambda_7 \cdot Control_{its} + v + \gamma + \epsilon_{its} \tag{7}$$

where subscript i, t, s denote firm, year, and sector, respectively. v, γ are year and sector fixed effect. ExD_{its} represent export dummy of firm i, $Control_{its}$ is the set of control variables. ϵ_{its} is an error term. FIN_{its} is financial constraints. $Working condition_j = \{fsocial, fhealth, facc, fsick, fpmat, fumat, fleave, fretire, fsurvive, funemp\}$

4. Estimation Results and Discussion

4.1. The Effect of Export Participation on Working Conditions

The influence of export participation on working conditions is elucidated in Table 1. The results generally reveal that exporting firms tend to provide better working conditions (positive correlations and significant at the 1%). Working conditions (as shown in the mean score) and export status are positive in both the non and controlled cases for firm and manager idiosyncrasies (Columns 1 and 2). An exporting firm's probability of good working conditions is 3.882 percentage points (Column 1). In Column 2, the presence

of control variables increases the positive effect of exports on working conditions. The correlation coefficient of exports increased to 4116 percentage points.

Table 1. The influence of export status on working conditon.

	Model 1		Model 2			
			2a	**2b**	**2c**	**2d**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
ExD	3.882 ***	4.116 ***				
	(0.038)	(0.04)				
Starter			9.010 ***			
			(0.081)			
Exiter				13.93 ***		
				(0.128)		
conEX					5.799 ***	
					(0.053)	
nonEX						−2.822 ***
						(0.026)
fage		−0.001	−0.000	−0.002	−0.002	0.011 ***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
legal		−0.042 ***	−0.010	0.023 **	−0.024 ***	−0.038 ***
		(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
unskilled		−0.010 ***	−0.003 ***	0.001	−0.005 ***	−0.004 ***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
casual		−0.172 *	0.094	−0.208 **	−0.337 ***	−0.205 **
		(0.093)	(0.093)	(0.093)	(0.092)	(0.092)
gender		−0.043	0.024	−0.005	−0.048 *	−0.019
		(0.027)	(0.027)	(0.027)	(0.027)	(0.027)
edubasic		−0.015	0.00	−0.026	0.013	0.078***
		(0.02)	(0.0234)	(0.0235)	(0.023)	(0.023)
eduprof		−0.0194 **	−0.019 **	−0.018 **	−0.035 ***	−0.012
		(0.007)	(0.007)	(0.008)	(0.007)	(0.008)
union		−0.542 ***	−0.149 **	0.014	−0.396 ***	−0.067
		(0.062)	(0.060)	(0.061)	(0.061)	(0.061)
Constant	−0.140	0.470 ***	0.009	0.181	0.354 **	1.859 ***
	(0.133)	(0.173)	(0.163)	(0.163)	(0.163)	(0.165)
Observations	6,123	6.084	6.114	6.114	6.114	6.114

Note: This table presents all results of the IV-Probit regressions with "the proximity to airport" instrumental variable at the district level. Standard errors in parentheses. ***, **, * denote significance at 1%, 5%, 10%. All regressions include the year- and sector-fixed effects. Working condition is measured as an average score of non-wage benefits.

Except for firm age, owner's basic education level, and gender, the other characteristics have a negative relationship with the employment conditions at the 5% and 1% significance levels. In particular, the legal form of Vietnamese *SMEs* is likely to change the strategy of sharing nonwage benefits. This result implies that working conditions in private firms and cooperatives are better than in other types, such as joint-stock, foreign joint ventures, and state-owned enterprises. Private firms and cooperatives are popular in Vietnam

because they suit the agricultural economy [88]. Cooperatives can be understood as social cooperation to benefit each other and develop together. This form creates many jobs for farmers, contributing to social stability. Rothschild-Whitt [89] explained that linkages in the working environment tend to be closer in cooperatives due to their social goals. Due to living and working practices, employees in cooperatives are often more friendly and supportive of each other. Employees are also free to exchange their thoughts and aspirations with the employer to reach a common voice. These factors contribute to creating a healthy working environment for employees. In addition, a firm that uses untrained workers may offer less attractive remuneration. This finding implies that low-skilled workers receive fewer non-financial allowances than high-skilled workers. The reason is that workers' low level of education and skills can negatively affect their ability to absorb science and technology, their productivity, and product quality. These consequences directly affect the profit and growth of the firm. As a result, firms discriminate between skilled and untrained workers on labor welfare. This result raises a concern for the Vietnamese workforce.

According to the Ministry of Planning and Investment of Vietnam, Vietnam's human development index (*HDI*) (Human Development Index-*HDI* is a measure of a country's average performance in terms of income, literacy rate, life expectancy) has increased dramatically since 1990 but only ranked 117 out of 189 in the world (*HDI* Vietnam 2019 is 0.704, higher than the average index of developing countries 0.689, but lower than the average index of Southeast Asia and the Pacific 0.747 (https://hdr.undp.org/sites/default/files/hdr_2015_statistical_annex.pdf, accessed on 16 May 2022)). Besides, according to the World Bank's assessment, the quality of Vietnamese labor ranks 11th out of 12 Asian countries in terms of skills, efficiency, and productivity [90]. Labor productivity in Vietnam is only higher than in Cambodia and Laos. Meanwhile, labor productivity in Singapore is 15 times higher than in Vietnam. This indicator in Japan and Korea is 8 and 6 times higher than in Vietnam, respectively [91] (https://www.grips.ac.jp/teacher/oono/hp/docu03/Viet%20Nam%20Productivity%20Report%202021.pdf, accessed on 16 May 2022). Therefore, it is likely that the Vietnamese workforce may not be able to access the nonwage benefits of businesses if they do not improve their education and skills. Besides, firms' remuneration for employees is often associated with working time and employee contract type. As a result, workers who work part-time, without formal contracts, and irregular workers are generally not entitled to these benefits. Thus, an increase in irregular employment may lead to a decline in the working benefits supply. However, no effect of firm age on welfare policies was found ($p > 0.1$). This result is precisely as predicted by Rand [21].

Moreover, union representation at the factory level significantly negatively affects the provision of nonwage benefits, as the *union* coefficient equals -0.542, $p < 0.01$. This result is contrary to the results found in the US plants in the Freeman [63]'s study. However, Long [92] demonstrated that the existence of unions in factories was not statistically significant. His results suggested that unions are only meaningful when their activities are efficient. In other words, trade unions must represent workers' voices and support workers in employment and benefits negotiations. Within the scope of this study, I did not consider the effectiveness of unions. Therefore, I do not have enough evidence to conclude that unions in Vietnamese enterprises are ineffective and worsen working conditions.

Finally, the manager's characteristics, such as gender and basic education, are insignificant in explaining the variation in benefits supply. The correlation coefficient is not significant ($p > 0.1$). However, I found that the relationship between nonwage benefits and high professional qualifications of the employer is significant at 1%. Nevertheless, interestingly, there is a negative effect (the coefficient of *eduprof* = -0.0194). This finding is contrary to the study of Variyam [13]. He argued that the professional level of the manager profoundly influences the existence and development of a firm. A highly qualified, experienced manager might run the firm better, earn higher profits, grow sustainably, and exist longer. As a result, these firms can pay higher employee welfare costs than others. In other words, the stability and development of the firm positively influence the employee benefits.

In the next step, instead of observing export at time (t), the change in export status is recorded compared to the previous time. Model 2 simulates the effect of *Starter*, *Exiter*, *ConEX*, and *NonEX* on working condition, respectively, (Column 3–6). The instrumental variable "*proximity to airport*" and the set of control variables are similar to Model 1. All findings are presented in the remaining columns of Table 1 (Column 3–6). In general, a firm that starts to export (*stater*), gets out of the export market (*exiter*), and consecutive export (*conEX*) groups positively affect benefits provision (Column 3–5). By contrast, the non-export group reveals a significant but negative result (Column 6). Working conditions at firms with two consecutive years of non-exporting (*nonEX*) are likely to deteriorate. The correlation coefficient of *nonEX* is −2.822, with a significance level of 1%. These findings imply that workers in non-exporting firms are likely to enjoy less compensation than others. Almost control variables affect the same trend as Model 1. However, the ownership and the share of casual labor forces do not involve working conditions in starting exporters. Besides, the number of unskilled workers in enterprises exiting foreign markets does not affect employment conditions. No evidence was found on the relationship between the Union and working conditions in the other exit-exporting and non-exporting groups.

In short, employees in exporting firms are likely to receive more benefits than non-exporting firms. If the firm is in the first year of the export suspension, the suspension of exports has not yet caused negative changes to employee benefits. However, if the firm continuously does not export (two consecutive years), it is likely that the provision of employee benefits will decrease. Tanaka [20], Robertson [37], Elliott [38], Kremer [39] explained this action mechanism. Scientists suggested that firms pay more attention to the working environment when participating in international markets due to requests from foreign partners. Scientists proposed that foreign partners' requirements drive firms to pay more attention to the working environment when participating in the international market. To test the relevance of this assumption in the case of Vietnam, I further observed the difference between firms engaged in exporting and non-exporting in several indicators. These indicators indicate whether firms are required to improve the quality of goods, processes, and labor by foreign partners or suppliers of raw materials or not. Specifically, I utilized research questions including *"Is your enterprise required by customers to meet certain standards of production or abide by certain codes of conduct?"*, *"Have your relations with any of your customers ever required any special/additional investments in production and/or information technology and human capital upgrading?"*, *"Have your relations with raw material and other input suppliers ever required any special/additional investments in production and/or information technology and human capital upgrading?"*. 35.29% of exporters are required to comply with production standards and standards of conduct from partners, while only 4.69% of domestic enterprises encounter these requirements. The percentage of exporting firms that their customers request to invest more in products and improve human resources is three times higher than non-exporting enterprises (18.05% and 5.66%, respectively). The percentage of exporters receiving this request from input suppliers is higher (7.91% exporter and 5.66% non-exporter). These figures imply that the foreign partners seem more "strict". They require partners to ensure the implementation of labor and production standards. Therefore, Vietnamese firms might have to improve the quality of the working environment and comply with labor regulations. Besides, the Vietnamese government has stepped up its participation in international trade agreements in recent years. Thereby creating many development opportunities for the economy, society, and domestic enterprises. Up to 2022, Vietnam has joined 15 free trade agreements (*FTA*). The common point of the agreements is that they all emphasize labor rights and the protection of environmental sustainability (such as freedom of association, collective bargaining, the abolition of all forms of forced labor, child labor, and discrimination in employment and occupation). Whereby the parties must respect and abide by these fundamental principles and rights. Vietnamese exporters must comply with these rules if a partner does not allow child labor or prohibits the production of goods under unsafe working conditions. Therefore, firms must upgrade working conditions for workers to align with international standards and

comply with agreements. Additionally, Vietnamese enterprises mainly export goods to the *US* and *EU* markets. These are markets with strict requirements for goods and labor standards. Thus, firms must improve working conditions when transacting with partners in these two markets.

4.2. The Effect of Export on Working Conditions under Firm Constraints

Table 2 highlights the influence of export decisions on working conditions under firm constraints. Columns 1 and 2 focus on the general constraint, such as lack of qualified human resources, lack of marketing services or transport facilities, fierce market competition, and lack of technical know-how. Columns 3 and 4 show the results of the group of financially unconstrained and financially constrained firms. First, column 1 reports a negative result between export and working conditions. Working conditions in a unconstrainted firm are worse when it enters export markets. However, it is not possible to unequivocally explain this result. Most control variables are not statistically significant (except for the unskilled variable). In other words, idiosyncrasies and demographics cannot account for the provision of nonwage benefits. This result is almost contradicted by previous studies that suggested that workplace attributes (such as regular work, intensive work, and the development of trade unions) are essential factors affecting the firm's labor strategies [23]. Additionally, the number of observations of this group is significantly less than that of other groups. Only 634 enterprises reported that they did not experience any significant obstacles. I rechecked the data set and found that, out of these 634 firms, only more than ten export firms. Therefore, there is not enough information to conclude this result's certainty. To ensure the authenticity of this finding, it is necessary to conduct some further studies that I might do in future works.

In the remaining columns of the table, the correlation coefficient of exports is positive and significant at the 1% level. The interaction of constraints with exports is significant in explaining the provision of nonwage benefits. Regardless of whether the firm encounters obstacles or not, exporting has the potential to make workers receive more benefits beyond wages. However, when a firm faces constraints, the effect of exports is reduced. Specifically, (column 3) when the firm's internal finances are sufficient, and the firm does not face any difficulty accessing external sources of finance, the correlation coefficient of exports is 4.556. However, once accessing credit becomes one of the firm's difficulties (column 4), or once a firm's development process encounters any major difficulties (column 2), this coefficient drops to 3.855 and 4.015, respectively.

Thus, employees receive fewer benefits when the firm encounters difficulties in its operation. A financially disadvantaged exporting company offers fewer employee compensation benefits than an unrestricted exporting firm. According to Variyam [13], the provision of benefits is related to the profit distribution policy between firms and employees. Compensations are seen as costs to the firm. Therefore, in case of capital shortage, and difficulty accessing finance, a firm reallocates its monetary funds appropriately. Strategies to ensure products and innovation might be prioritized [93]. Subsequently, other purposes such as employee benefits are considered. Similar to Models 1 and 2, in Model 3, firm age, owner's gender, and basic training level do not affect working conditions. Other control variables, including legal, unskilled, casual, eduprof, and Union are negative and statistically significant. The trend toward adverse effects of these variables is similar to the results in Model 1.

In sum, the estimates provided evidence for the interaction of firm constraints in the relationship between export and working conditions. If firms face major constraints, export decisions affect employee benefits. However, financial constraint is likely to reduce the impact of exports on working conditions.

Table 2. The influence of export on working conditions under firm's growth obstacles.

	A Major Constraint		Finance Constraint	
	No	**Yes**	**No**	**Yes**
	(1)	**(2)**	**(3)**	**(4)**
ExD	−6.564 ***	4.015 ***	4.556 ***	3.855 ***
	(0.196)	(0.039)	(0.061)	(0.050)
fage	−0.001	−0.001	0.001	−0.002
	(0.004)	(0.002)	(0.002)	(0.002)
legal	−0.043	−0.045 ***	−0.032 **	−0.044 ***
	(0.044)	(0.009)	(0.014)	(0.012)
unskilled	0.026 *	−0.009 ***	−0.011 ***	−0.009 ***
	(0.013)	(0.001)	(0.001)	(0.001)
casual	−0.115	−0.177 *	−0.074 *	−0.242 *
	(0.322)	(0.098)	(0.134)	(0.130)
gender	0.035	−0.046	−0.036	−0.057
	(0.098)	(0.029)	(0.041)	(0.038)
edubasic	−0.055	−0.022	−0.025	−0.007
	(0.063)	(0.025)	(0.033)	(0.034)
eduprof	0.032	−0.022 ***	−0.012 *	−0.024 **
	(0.029)	(0.008)	(0.012)	(0.011)
union	0.032	−0.545 ***	−0.731 ***	−0.445 ***
	(0.336)	(0.065)	(0.096)	(0.085)
Constant	0.009	0.545 ***	−1.516 ***	0.392
	(0.523)	(0.187)	(0.013)	(0.252)
Observation	634	5.405	2.853	3.215

Note: This table presents all results of the IV-Probit regressions with "the proximity to airport" instrumental variable at district level. Standard errors in parentheses. ***, **, * denote significance at one percent, five percent, and ten percent levels, respectively. All regressions include the year-fixed effects and sector-fixed effects. "NO" means a firm does not face to firm's growth constraint. "YES" means a firm faces to firm's growth constraint.

Over the past two decades, pursuing policies to promote international trade has been considered a top goal of Vietnam. Besides joining trade agreements, the government has made efforts to develop export incentive programs for export-oriented manufacturing enterprises, such as increasing budgets, simplifying administrative procedures, and granting land use permits. Specifically, under the 2010 Law on Credit Institutions (Law on Credit Institutions 2010, revised in 2017: https://www.economica.vn/Portals/0/Documents/f6c24d103517f2a8c3ea307d119a2e0e.pdf, accessed on 16 May 2022), international financial leasing companies are allowed to operate in Vietnam. These firms provide capital to customers through leasing modern machinery and equipment. Thus, firms that have insufficient capital still have the opportunity to rent machinery to improve product quality. As a result, the competitiveness of Vietnamese exports in the international market is likely to be improved. To further promote exports in *SMEs*, Government should strengthen coordination with ministries in providing market information and export advice to enterprises. Moreover, as shown results, geography significantly influences a firm's exports. Therefore, the transport system for cross-border exports needs to be invested more carefully to strengthen the connection between provinces and other partner countries. Specifically, Government and local authorities should have an appropriate and synchronous investment and implementation mechanism to consolidate, complete, and build new road traffic and high-speed railway systems. Besides, upgrading the warehouse, logistics, and logistics system is necessary.

Additionally, the research results suggest that a policy to support firms in accessing capital is necessary. The government has issued many mechanisms to support *SMEs* in developing production, especially credit capital access. For example, the Law on Supporting and Developing Enterprises was promulgated in 2017 (On 16 May 2016, the government issued Resolution No. 35/NQ-CP) to create favorable conditions for newly established businesses. Accordingly, the enterprise establishment and loan procedures are simplified; Credit Guarantee Fund for *SMEs* (On 8 March 2018, Government issued Decree No. 34/2018/ND-CP) was established in 2018 to provide credit guarantees for *SMEs* to borrow capital at credit institutions. According to these regulations, credit institutions increased unsecured lending. Several other supportive policies have been implemented, such as providing preferential interest rates for some priority industries (1–2% lower than unprioritized industries), (According to Decision No. 1425/QD- SBV dated 7 July 2017 and Circular No. 39/2016/TT-NHNN dated December 2016, of the *SBV*), implementation of specific credit programs for some industries (Decision No. 813//QD-NHNN dated April 2017 of the State Bank and Resolution No. 30/NQ-CP dated 7 March 2017 of the government). In general, credit mechanisms and policies in Vietnam have been gradually improved, thereby creating favorable conditions for *SMEs* to develop. However, *SMEs* still face many difficulties accessing credit capital. There are several reasons, for instance: the insufficient size of credit funds to meet the needs of *SMEs*; credit products are not diversified and suitable for *SMEs* ; firms' asset value is still low; *SMEs* are lack capacity and experience; the link between ministries and departments in coordinating support and training to improve the capacity of the *SME* sector is still limited. As a result, support policies have not been promoted effectively. To overcome these difficulties, improving the information system on firms and credit ratings needs to be completed and implemented transparently. The application of big data technology to banking operations management is urgent. In addition, credit institutions need to focus more on the design of loan products to meet each industry's specific characteristics. At the same time, Government should coordinate with ministries and sectors more closely and scientifically so that policies are correctly understood and effectively implemented.

Besides, the study's findings showed that skilled workers might receive more benefits than unskilled and irregular workers. Meanwhile, workers in Vietnam, especially workers in *SMEs*, have low professional qualifications [88]. Therefore, employees in *SMEs* might experience many disadvantages in negotiating benefits with employers. These findings heavily burden policymakers and the Vietnamese government in implementing appropriate vocational education programs. Education is essential in improving workers' lives, rights, and bargaining power with employers. This idea suggests that in addition to wages and mandatory insurance schemes for workers, firms can also offer educational benefits, such as quarterly or monthly intensive training. This strategy might be one of the attractive benefits that can help firms attract potential workers and create job satisfaction for current employees.

Moreover, to encourage firms to provide better working conditions, Government should have specific regulations on the mandatory deduction of welfare funds. They should guide more detail the implementation of regulations on occupational safety to ensure workers' rights. Although the Vietnamese government has issued regulations on occupational safety, the performance has not been monitored and guided specifically. Therefore, the regulations have not yet brought into full play its effectiveness. However, the government should determine a reasonable threshold for welfare funds as well as strict supervision sanctions to prevent the use of employee benefits funding to evade corporate income tax (Clause 2, Article 2 of Circular 111/2013/TT-BTC Ministry of Finance: https://dichvutuvandoanhnghiep.vn/en/circular-111-2013-tt-btc.html, accessed on 16 May 2022).

Furthermore, this paper's findings show that level of owner's education influences employee benefits. The idea behind this result is that employers' perceptions and attitudes

matter [22]. Therefore, Government should make propaganda about the role of working conditions in firms' culture and sustainable development more frequently and effectively.

Last but not least, the findings raised awareness of the role of unions in improving the quality of working conditions. Therefore, trade unions should improve efficiency by strengthening coordination with employers in building production plans and implementing collective labor agreements [25]. Besides, trade unions need to strengthen inspection and supervision of the implementation of regulations. This work aims to ensure that the regulations on the payment of salaries, bonuses, and insurance policies for employees are effectively implemented. In addition, creating conditions for workers to improve their education and professional qualifications should be considered one of the union's top goals.

4.3. Further Sensitive Analysis

Tables 3 and 4 show the effect of export on each fringe benefit in both two groups, including financially constrained firms and financially unconstrained firms.

Table 3 presents the results of firms without facing financial difficulties. Overall, exports have a significant positive effect on all benefits. The exporting firm without financial constraints was more likely to provide all ten benefits than the non-exporting firm without the problem. In which export has the most substantial impact on social insurance (column 1) (the coefficient of export is 4.840, $\rho < 0.01$). In comparison, the effect of exports on unpaid maternity leave is the lowest (the coefficient of export is 4.546, $\rho < 0.01$). However, in the control variables, only the number of unqualified employees and local unions are significant in explaining the provision of these benefits. The negative correlation coefficients of unskilled imply that the more unskilled workers are employed by the firm, the less likely it is to provide additional nonwage benefits to workers. Similar to Model 1, the regression coefficients of the union variable at all estimates are negatively significant.

Table 4 indicates all findings in financially constrained firms. The effect of exports is significant at the 1% level at all fringe benefits. However, the impact of export is weaker than Table 3. When firms face financial constraints, the effect of export is strongest on unemployment insurance compared with other fringe benefits (the export coefficient for the supply of unemployment insurance is 3.992). In contrast, the impact of export is lowest in the provision of unpaid maternity leave. Moreover, out of the ten types of benefits, unpaid maternity leave is most affected by financial constraints. For financially unconstrained firms, exporting is likely to increase the probability of paying unpaid maternity leave by 4546 percentage points. In comparison, this figure is 3.516 in financially constrained firms. The difference is the largest compared to the remaining benefits. In addition, the effect of irregular workers and the owner's gender are significant. The negative coefficients of a manager's gender indicate that female managers tend to pay more attention to employees' welfare in exporting firms facing capital difficulties.

In brief, the results for each benefit still support the overall findings. Financial constraints have a moderating role in the relationship between exports and workers' ability to receive benefits. Under this obstacle, the export decision affects employers' offers, but to a lower extent.

These findings suggest several issues to be aware of in the Vietnamese labor market. The percentage of female labor in Vietnam is around 73% (out of the total number of women); over 31% of females are a firm's owners. Especially in some industries such as textiles, garments, and seafood processing, female workers accounted for more than 80% (in 2017). Nearly 35% of female employees are of childbearing age (from 25 to 35 years old). Therefore, female workers should be given more attention and receive more specific benefits. However, the results found in this study show that, regardless of financial constraints status, unpaid maternity leave is the least sensitive to exports. Therefore, Government should have more priority policies for recruiting female workers in enterprises. Additionally, Government should continue to have preferential policies for these labor-intensive enterprises to encourage them to improve working conditions for female workers. For example, a tax reduction policy may be applied to a firm employing many female workers. Furthermore,

the findings reveal those female owners are more likely to provide more welfare than male owners. Meanwhile, the proportion of women who are owners accounts for only approximately 21% (https://www.gso.gov.vn/en/data-and-statistics/2019/10/statistical-yearbook-of-vietnam-2015-2/, accessed on 16 May 2022), of which 42% are female owners of *SMEs*. Therefore, improving the education level of women and their position should receive more vital attention from the government and society. Government should develop programs to support female entrepreneurs and create favorable conditions—for example, the preferential loan policy for firms with female managers. Business development funds should set a certain percentage for women-owned firms to encourage and facilitate their access to capital. In addition, enhancing the effectiveness of trade unions at enterprises can ensure workers' rights in general and female workers in particular.

Table 3. The effect of export decision on each type of benefit—Part A.

	Panel A: Firms Do Not Face Financial Constraint (FIN = 0)									
	fsocial	fhealth	facc	fsick	fpmat	fumat	fleave	fretire	fsurvive	funemp
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ExD	4.840 ***	4.811 ***	4.775 ***	4.618 ***	4.573 ***	4.546 ***	4.619 ***	4.598 ***	4.596 ***	4.830 ***
	(0.063)	(0.068)	(0.076)	(0.06)	(0.065)	(0.068)	(0.063)	(0.074)	(0.070)	(0.061)
fage	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001
	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)
legal	0.008	0.012	−0.008	−0.005	−0.003	−0.035 ***	−0.010	0.006	−0.011	0.000
	(0.033)	(0.035)	(0.024)	(0.025)	(0.026)	(0.013)	(0.023)	(0.032)	(0.022)	(0.028)
unskilled	−0.008 ***	−0.009 ***	−0.011 ***	−0.010 ***	−0.008 ***	−0.011 ***	−0.011 ***	−0.011 ***	−0.011 ***	−0.011 ***
	(0.003)	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
casual	−0.166	−0.174	−0.167	−0.116	−0.124	−0.106	−0.098	−0.090	−0.127	−0.175
	(0.134)	(0.136)	(0.132)	(0.138)	(0.140)	(0.136)	(0.135)	(0.140)	(0.146)	(0.136)
gender	−0.067	−0.069	−0.027	−0.043	−0.053	−0.039	−0.044	−0.063	−0.041	−0.042
	(0.046)	(0.046)	(0.038)	(0.041)	(0.043)	(0.041)	(0.041)	(0.045)	(0.041)	(0.039)
edubasic	−0.002	−0.003	−0.023	−0.021	−0.013	−0.020	−0.019	−0.013	−0.022	−0.008
	(0.034)	(0.034)	(0.031)	(0.033)	(0.034)	(0.033)	(0.033)	(0.035)	(0.033)	(0.033)
eduprof	−0.003	−0.003	−0.005	−0.008	−0.006	−0.016	−0.010	−0.006	−0.010	0.000
	(0.012)	(0.012)	(0.012)	(0.011)	(0.012)	(0.012)	(0.011)	(0.012)	(0.011)	(0.013)
union	−0.661 ***	−0.676 ***	−0.742 ***	−0.708 ***	−0.681 ***	−0.840 ***	−0.715 ***	−0.688 ***	−0.688 ***	−0.727 ***
	(0.157)	(0.150)	(0.115)	(0.119)	(0.128)	(0.075)	(0.114)	(0.123)	(0.120)	(0.122)
Constant	0.093	0.077	0.135	0.311	0.233	0.438 *	0.326	0.088	0.291	0.106
	(0.355)	(0.364)	(0.335)	(0.282)	(0.316)	(0.251)	(0.284)	(0.393)	(0.294)	(0.351)
Obs	3.272	3.271	3.255	2.963	2.896	2.888	2.952	2.933	2.934	3270

Note: This table provides the results of model 8. Standard errors in parentheses. ***, * denote significance at one percent and ten percent levels, respectively. All regressions include the year-fixed effects and sector-fixed effects.

Table 4. The effect of export decision on each type of benefit—Part B.

	Panel B: Firms Face Financial Constraint (FIN = 1)									
	fsocial	fhealth	facc	fsick	fpmat	fumat	fleave	fretire	fsurvive	funemp
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ExD	3.945 ***	3.910 ***	3.947 ***	3.816 ***	3.826 ***	3.516 ***	3.838 ***	3.742 ***	3.829 ***	3.992 ***
	(0.107)	(0.119)	(0.071)	(0.081)	(0.065)	(0.198)	(0.061)	(0.122)	(0.062)	(0.074)
fage	−0.005 *	−0.005 *	−0.002	−0.002	−0.002	−0.001	−0.002	−0.003	−0.002	−0.003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
legal	0.050	0.047	−0.013	0.002	0.003	−0.022	−0.009	0.031	−0.02	0.024
	(0.038)	(0.037)	(0.019)	(0.023)	(0.023)	(0.018)	(0.020)	(0.031)	(0.0171)	(0.029)
unskilled	0.001	0.003	−0.011 ***	−0.005 **	−0.006 **	−0.011 ***	−0.009 ***	−0.009 ***	−0.008 ***	−0.009 ***
	(0.004)	(0.005)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
casual	−0.251 *	−0.208	−0.247 **	−0.293 **	−0.260 *	−0.320 **	−0.223 *	−0.225	−0.280 **	−0.204
	(0.139)	(0.137)	(0.126)	(0.138)	(0.136)	(0.139)	(0.131)	(0.142)	(0.134)	(0.133)
gender	−0.120 **	−0.107 **	−0.080 **	−0.077 *	−0.074 *	−0.079 *	−0.072 *	−0.103 **	−0.074 *	−0.083 *
	(0.049)	(0.047)	(0.041)	(0.041)	(0.042)	(0.041)	(0.041)	(0.047)	(0.041)	(0.042)
edubasic	0.087 *	0.100 *	0.022	0.031	0.026	0.042	0.014	0.070	0.010	0.054
	(0.051)	(0.053)	(0.034)	(0.038)	(0.038)	(0.038)	(0.035)	(0.048)	(0.035)	(0.044)
eduprof	0.001	0.003	−0.009	−0.011	−0.010	−0.041 ***	−0.020 *	−0.002	−0.019 *	−0.003
	(0.014)	(0.015)	(0.012)	(0.012)	(0.012)	(0.011)	(0.011)	(0.014)	(0.011)	(0.013)
union	−0.091	−0.070	−0.351 ***	−0.252 **	−0.267 **	−0.534 ***	−0.365 ***	−0.212	−0.329 ***	−0.219
	(0.181)	(0.188)	(0.102)	(0.124)	(0.118)	(0.070)	(0.093)	(0.138)	(0.102)	(0.139)
Constant	−0.618	−0.765 *	−0.105	−0.287	−0.163	−0.167	−0.135	−0.777 *	0.0604	−0.555
	(0.425)	(0.458)	(0.295)	(0.332)	(0.312)	(0.314)	(0.301)	(0.449)	(0.275)	(0.395)
Obs	3.528	3.527	3.519	3.303	3.255	3.251	3.299	3.279	3.284	3.524

Note: This table provides the results of model 8. Standard errors in parentheses. ***, **, * denote significance at one percent, five percent, and ten percent levels, respectively. All regressions include the year-fixed effects and sector-fixed effect.

5. Conclusions

Employee benefits are an essential contribution to improving working conditions. Better working conditions contribute to attracting skilled workers. Besides, ensuring a safe working environment and employee benefits demonstrates corporate responsibility towards society. These core factors make up the firm's value and brand in the modern market economy. Thus, investment in employee benefits is an important issue. This expense is worthwhile so that a firm can develop stably and sustainably in the long term [94]. The visionary owner/manager should be well aware of this fact so that the firm can develop in the long run. Consequently, improving working conditions, particularly labor benefits, is one of the four fundamental goals of decent work, according to the ILO. At the same time, this is also one of the 17 sustainable growth goals highlighted by the SDGs.

Using *SMEs* dataset in Vietnam that was surveyed from 2011 to 2015, this study provides evidence about the relationship between export and working conditions. Besides, this study considers the impact of some unsustainable factors in enterprises such as lack of qualified human resources, lack of marketing service or transport facilities, too fierce competition in the market, lack of technical know-how, and financial constraints. Thereby, the effect of export on working conditions under firm constraints is clarified.

The analysis results show that exporting firms offer better working conditions for workers in Vietnam. However, the impact of exports on providing employee benefits in exit-exporting firms was more robust than in other groups (start exporting and consecutive exporting firms). Constrained firms (such as lack of qualified human resources, lack of marketing service or transport facilities, too fierce competition in the market, lack of technical know-how, and finance) offer worse working conditions than their counterparts.

These results suggest that promoting exports and creating a favorable business environment are valuable strategies for working conditions improvement. In addition, the findings indicate that working conditions in private firms and cooperatives are likely to be better than in other types (such as joint-stock companies, foreign joint ventures, and state-owned enterprises). Similar to Rand [21], the study does not find an effect of firm age on offering fringe benefits. An employee's qualifications significantly affect the possibility of getting benefits. Specifically, highly skilled workers may receive more benefits than unskilled and irregular workers. Besides, working conditions are likely to improve if the owner is highly qualified. In contrast to Freeman [63], this study finds a negative relationship between union and working conditions. However, this study only observed the presence of unions. According to Long [92], considering operational efficiency is more accurate for determining the impact of unions on working conditions. Moreover, exporting firms are more likely to provide social insurance than other types of fringe benefits. At the same time, when firms face financial difficulties, the impact of exports on unemployment insurance is more substantial than others.

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Data Availability Statement: All data generated or analyzed to support the findings of the present study are included this article. The raw data can be obtained from the authors, upon reasonable request.

Conflicts of Interest: The author declares no conflict of interest.

Appendix A. Instrumental Variable

In this paper, the proximity to the airport is used as the instrumental variable to solve the model's endogenous problem (Similar to Tanaka). However, the data survey does not publish firm-specific addresses. Firms only provide information about the district and province. Therefore, this study uses district and province to determine the distance to the international airport.

Noi Bai airport and Tan Son Nhat airport are the two biggest international airports with logistics centers specializing in handling air cargo in Vietnam. Before 2014, Tan Son Nhat airport in *HCMC* was the largest airport in Vietnam in terms of the area and capacity of the station (Table A1). Tan Son Nhat international airport provided over 20% international flights in Vietnam (The author synthesizes data from reports in Vietnamese published by Civil Aviation Authority of Vietnam, General Ministry of Transport, and General Department of Customs). This airport did 370 flights per day, much more than Noi Bai international airport, with around 140 flights. Besides, the global cargo volume of Tan Son Nhat airport is the largest, accounting for about 32%, reaching nearly 275,008 tons in 2015. These numbers implied that Tan Son Nhat airport has more international transactions than Noi Bai airport.

Table A1. Specification of airports with a cargo terminal.

Rank	Name Airport	Square (m^2)	The Capacity of the Passenger Terminal (Million/year)	The Capacity of Cargo Terminal (ton/year)
1	Tan Son Nhat	136,000	23	495,000
2	NoiBai	115,000	19	403,000
3	DaNang	36,100	6	18,000
4	Camranh	13,995	1.5	2500

Source: The author synthesizes data from reports in Vietnamese published by Civil Aviation Authority of Vietnam, General Ministry of Transport, and General Department of Customs.

In addition, manufacturing enterprises are mainly concentrated in the southern provinces [18]. The number of *HCMC* enterprises (accounting for 21.8%) is three times as many as those in Hanoi. Therefore, in this study's scope, Tan Son Nhat airport (the airport is located in *HCMC*) is chosen to measure an instrumental variable. The concept of "*proximity to airport*" will be defined as the firm in districts in *HCMC*, except Can Gio and Cu Chi districts. I removed Cu Chi and Can Gio out of the concept "*near the airport*" because Can Gio and Cu Chi districts are the two largest areas in *HCMC*. These two districts have a total area that accounts for nearly half of *HCMC*'s total area. Therefore, the distance from these two districts to the airport is quite far.

The instrumental variable "*proximity to airport*" (denoted by $airport_d$) is defined as follows:

$$\text{Instrumental Variable}(airport_d) = \begin{cases} 1 \text{ if a firm located in } HCMC, \text{ expect Can Gio \& Cu Chi} \\ 0 \text{ if otherwise} \end{cases}$$

I shed light on the suitability of instrumental variable by conducting some endogenous tests [95,96]. All results are presented in Table A2. Hausman test results show that $\chi^2 = 552.038$ and is significant with $p = 0.000$. This result confirms the existence of the endogenous phenomenon and, simultaneously, shows that the selected instrumental variable meets the requirements that there is no correlation with the residuals of the original regression model. Therefore, it has successfully overcome the endogenous phenomenon caused by the credit constraint variable. The *LM* and Cragg-Donald Wald*F* statistics with significant results for $\rho = 0.000$ also support this argument. These findings confirm that the instrumental variable is valid and has adequate power in mitigating the endogeneity problem.

Table A2. Test for the endogenous variable.

	Coefficient	ρ-Value
Hausman test of endogeneity (χ^2)	552.038	0.0000
Anderson canon. corr. LM statistic (Under identification test)	55.753	0.0000
Cragg-Donald Wald F-statistic	56.245	0.0000

Note: Endogeneity Test is constructed by using 2SLS regression.

Appendix B. Description and Measurement of Variables

Table A3. Description and measurement of variables.

Symbol	Description	Mean	Std.	Min	Max
Fringe Benefits					
score	The average of 10 criteria fringe benefits below	0.310	0.369	0	1
fsocial	=1 if firm pay contribution to social insurance for employees, otherwise = 0	0.259	0.438	0	1
fhealth	=1 if firm pay contribution to health insurance for employees, otherwise = 0	0.260	0.439	0	1
facc	=1 if the firm normally compensate the workforce directly for accidents or professional illness; Otherwise = 0	0.306	0.461	0	1
fsick	=1 if employees enjoy sick leave with pay benefits; Otherwise = 0	0.335	0.472	0	1
fpmat	=1 if employees enjoy the right to paid maternity leave benefits; Otherwise = 0	0.299	0.458	0	1
fumat	=1 if employees enjoy the right to unpaid maternity leave benefits; Otherwise = 0	0.417	0.493	0	1

Table A3. *Cont.*

Symbol	Description	Mean	Std.	Min	Max
fleave	=1 if employees enjoy annual leave with pay benefits; Otherwise = 0	0.305	0.461	0	1
fretire	=1 if employees enjoy any payment when they retire; Otherwise = 0	0.223	0.416	0	1
fsurvive	=1 if employees enjoy survival benefits (family); Otherwise = 0	0.327	0.469	0	1
funemp	=1 if a firm contribute to unemployment insurance for its employees, Otherwise = 0	0.215	0.411	0	1
Export decision					
ExD	=1 if a firm export directly and/or indirectly; Otherwise = 0	0.064	0.246	0	1
starter	=1 if a firm engages in the export market at time (t) and do not export at time ($t-1$)	0.011	0.104	0	1
exiter	=1 if a firm stops exporting at time (t), although they exported at time ($t-1$)	0.005	0.071	0	1
conEX	=1 if a firm exports at the time (t) and time ($t-1$)	0.028	0.164	0	1
nonEX	=1 if a firm does not export at the time (t) and time ($t-1$)	0.496	0.500	0	1
Control variables					
fage	The difference between the surveyed year and the establishments year.	15.196	9.956	2	76
legal	Form of ownership/legal status	2.310	1.94	1	10
unskilled	The number of production workers/laborer unskilled	5.387	17.244	0	362
casual	Share casual labor force of total	0.050	0.146	0	1
gender	Gender of manager/owner. =1 if male, otherwise = 0	0.606	0.489	0	1
edubasis	The highest general educational level completed of manager/owner	4.600	0.653	1	5
eduprof	The highest professional education completed of manager/owner	3.901	2.034	1	8
union	=1 if a firm has a local level trade union, otherwise = 0	0.107	0.309	0	1
Constraint					
constr.	=1 if the firm face any major constraints to growth; Otherwise = 0	0.859	0.348	0	1
FIN	=1 is a firm that had a demand but cannot apply for a loan, or applied for a loan but weas denied, or applied for a loan, was not denied but still has a demand; 0 otherwise	0.498	0.500	0	1
Instrumental Variables					
airport$_d$	The proximity to airport at district level. =1 if a firm located in a district that belong to HCMC (except Cu Chi and Can Gio), otherwise = 0	0.243	0.428	0	1

Note: Summary statistics from data. Std: Standard deviation. Symbol: constr. = constraints.

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