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Florence Münch

Sourcing Practices in the Garment Industry: The Root Cause for Poor Working Conditions



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Florence Münch

Sourcing Practices in the Garment Industry: The Root Cause for Poor Working Conditions

International Labour Office

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ABSTRACT**Sourcing Practices in the Garment Industry:
The Root Cause for Poor Working Conditions**

Despite a surge in compliance reports and international agreements, poor working conditions and industry accidents are pervasive in the garment industry. The present study builds on previous theoretical research that attributes poor working conditions to sourcing practices of buyers in an industry that is characterised by strong power asymmetries. Drawing on data in the form of a worker and manager survey conducted by Better Work in Cambodian garment factories, the question of whether sourcing practices have an impact on working conditions is addressed descriptively and statistically using OLS. While research studying labour standards is mostly based on external factory audits, a new angle is taken by measuring working conditions from a worker's perspective. A measure for several aspects of working conditions is built from the worker survey and regressed on sourcing practices that are perceived as problematic by factory managers. Acknowledging for limitations in the data, the results nevertheless suggest that several sourcing practices deteriorate working conditions. Uncertain orders, changes in order size, rush orders and, especially, changes to technical requirements after production has started, appear to have a negative impact on a range of working conditions. Changes in order size are also found to significantly decrease the monthly payment of workers. In contrast, penalties issued on late deliveries or defective products do not appear to have a significant effect. Overall, the paper provides an empirical basis for further research and highlights the impact and, consequently, the responsibility buyers have within the global garment supply chain.

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1. Introduction

In the past ten years the garment industry has witnessed some of the worst accidents in its history. The collapse of the Rana Plaza building with almost 1'200 garment workers killed and the fire in the Tazreen factory in Dhaka with over 120 deaths are just two examples (Banerjee Saxena et al., 2020, p. 22 & p. 36). Alongside these accidents, accounts of union busting, detrimental working conditions and non-compliance with labour standards prevail. The livelihood of workers in the garment sector has been drawing attention for a long time, reaching a high in the 90s with the anti-sweatshop movement. In 2020 the vulnerability of workers became clear once more when thousands of workers were laid off without payment as a result of the demand side shock during the COVID-19 pandemic (World Bank Group, 2020, p. 6). In the aftermath of the Rana Plaza disaster, emphasis was put on increasing factory safety through international agreements and private compliance programs. During the pandemic, Non-Governmental Organizations (NGOs) and the public pressured brands to pay laid-off workers – especially for already produced garments. And even though some progress has been made in fields like forced and child labour, as well as factory safety, reports of worker rights violations remain frequent. It appears that private compliance programs, labour laws and international accords are not able to guarantee decent working conditions.

In consequence, research has pointed at the need to find the root cause of the problem instead of fighting the symptoms. Could it be that one reason for detrimental working conditions lies within the dynamics of the supply chain? The industry has massively evolved in recent decades and not necessarily to workers' advantage. Especially the fast fashion business model with fast-changing product ranges, low prices, rushed and uncertain orders for fast-selling items requires enormous flexibility. Garment production mostly happens in low-wage countries with huge work forces as it is still an extremely labour-intensive industry. It can be characterised as a buyer-driven supply chain with strong power asymmetries (Banerjee Saxena et al., 2020, p. 209; Gereffi, 1999, p. 2). Multinational brands can afford to shift their production to wherever

labour costs are lowest, or production is most flexible. Downward pressure on suppliers through prices and lead time requires factories to cut costs wherever possible and at the same time remain flexible to meet deadlines and changes in order volume. Production planning is highly complex and even more so in a business model with short lead times and fluctuating demand for ever-changing items. Strong competition and the pressure faced in the supply chain may lead factory managers to compromise on working conditions to try and reach higher performance. NGO's, such as the Clean Clothes Campaign and Oxfam (2010) have long concluded from their observations in the agriculture and garment industry that the sourcing practices of buyers were strongly undermining efforts to improve working conditions.

While research indicates that the sourcing strategies of buyers are one of the root causes of labour right violations, there is a lack of empirical evidence as well as insight into which practices are most detrimental (Anner, 2020; Banerjee Saxena et al., 2020; Brown, Dehejia, Rappaport, et al., 2016; Locke, 2013). Thus, the main question this paper aims to answer is whether and which sourcing practices impact working conditions in the garment sector. To address this question, data from garment factories in Cambodia between 2015 and 2018 is analysed (Better Work, 2021e). The data set is comprised of answers from survey questions of managers and workers in factories that participate in the Better Factories Cambodia (BFC) program. This program is part of Better Work (BW), a partnership between the International Labour Organization (ILO) and the International Finance Corporation (IFC) to improve

working conditions in the garment industry. When looking for a measure of compliance, instead of using factory assessment data, labour standards are evaluated based on the answers of individual workers. Thus, a new perspective is taken, insofar as working conditions are measured in how they are perceived by workers – putting workers at the centre of the analysis.

When regressing the measure for working conditions on sourcing practices, it is found that several sourcing practices have a negative impact on the former. Especially, late changes to technical specification of garments and changes in order size are found to negatively impact labour standards. Somewhat surprisingly, replenish orders and a lack of knowledge of Cambodia's labour law are found to have a positive impact on working conditions.



2. Existing Research – Working Conditions and Sourcing Practices

2.1 COUNTRY SETTING

The garment sector has been a key element of Cambodia's economic development strategy since the 1990s.¹ Until 1995 the Multi-Fibre Agreement (MFA) imposed quantitative restrictions on textile and garment exports from developing countries to the Global North. In 1995 the Agreement on Textiles and Clothing by the World Trade Organization required the MFA quota system to phase out over a period of ten years (Bargawi, 2005, p. 1). As a result, in 1999 Cambodia and the United States (US) agreed on a Bilateral Textile Trade Agreement which reduced Cambodia's tariffs and quotas for exports to the US (Bargawi, 2005, p. 5). What was unique about this agreement, was the link of lower tariffs to compliance with labour standards (Homlong & Springler, 2015, p. 37). As monitoring of working conditions had proven to be very difficult, the ILO was assigned the task of controlling and reporting on working conditions. In 2001 the BFC program was established by the ILO, the Royal Government of Cambodia, the Garment Manufacturers of Cambodia and Trade Unions (Better Work, 2016a).

The assessment by BFC was – and still is – mandatory for factories exporting garments (Antolin, Babbitt, Brown, & Wen, 2020, p. 3). The bilateral trade agreement and establishment of BFC led to an impressive growth of the Cambodian garment sector and many buyers were interested in the promise of safer sourcing (Homlong & Springler, 2015, p. 37). Due to the program's success, it was renewed after

the phasing out of the MFA and Better Work has since been implementing similar programs in other countries. Today 557 factories employing over 600'000 workers participate in the program in Cambodia (Better Work, 2021a).²

Due to its long history with the ILO, Cambodia has often titled a labour right success with progressive labour laws that are assessed on a regular basis. At the same time, the political environment can be described as relatively stable, which together with low wages is attractive for global buyers. However, it has been pointed out that although regulations are strong on paper, their implementation is not and reports of labour right violations prevail (Banerjee Saxena et al., 2020, pp. 85-88; Human Rights Watch, 2015; Schenk & Regenass, 2021). While improvements were made in the areas of child labour and discrimination, others such as overtime, compensation, union rights, safety and health remain problematic (Human Rights Watch, 2015; Schenk & Regenass, 2021). Among the most reported problems are fainting, excessive overtime and the misuse of short-term contracts (Robertson, 2020). In addition, the global pandemic has increased pressure on workers who were laid-off or whose wages are not being paid (Banerjee Saxena et al., 2020, p. 87; Oka, 2016, p. 4). At the same time, growing concerns regarding working conditions and the treatment of unionised workers have led the EU to withdraw preferential trade agreements on imports from Cambodia (International Labour Organization, Better Work, & ILR School, 2020; United Nations, 2020).

1 The garment industry or sector refers to the manufacturing of items of clothing and includes cutting of fabric, assembly of clothes and finishing works.

2 Total workers in the garment and footwear sector amount to over 660'000 in Cambodia (World Bank, 2019).

With regards to working conditions, the COVID-19 pandemic has exposed the vulnerability of garment workers worldwide and in Cambodia. The demand shock has intensified the price competition amongst suppliers and to retain the remaining orders, many factories sell below production costs – a problem that existed before the pandemic but has intensified (Schenk & Regenass, 2021, p. 9). At the same time buyers are delaying payments (from 30 up to 90 days), all while increasing pressure on prices (International Labour Organization et al., 2020, p. 9). And, as a consequence of order cancellations, many workers are being laid off (World Bank Group, 2020, pp. 4). By October 2020, the ILO reported that about 15% of Cambodian garment workers (more than 150'000 workers) had lost their job (International Labour Organization et al., 2020, p. 10). Many did not receive payments from March 2020 on – even for work already done. One problem is that many workers are employed under probation and short-term contracts – despite a law issued in 2018 that workers have the right to an unlimited contract after two years. Short-term or probation contracts enable factory owners to circumvent the payment of benefits for laid-off workers. In summer 2020, almost 50% of workers reported lower wages as a result of the pandemic (International Labour Organization et al., 2020, p. 12). Thus, the load of the pandemic is to a large part carried by suppliers and their workers who are essentially financing their buyers (Arnold, 2021, p. 3).

Importantly, less than ten percent of garment factories are owned by Cambodians and about 65 percent are owned by investors from mainland China, Taiwan or Hong Kong (AQF (Asia Quality Focus), 2019; Human Rights Watch, 2015; Yin & Robertson, 2014). General Managers are often not located in Cambodia and do therefore not observe the daily business within their factories first-hand. And even when working in Cambodia, many do not speak the language and remain distant to their employees. (Carteret, 2014; Fashion Revolution, 2016)

2.2 WORKING CONDITION IN THE GARMENT INDUSTRY

Research into working conditions highlights that while the garment industry provides many jobs – especially for the rural population and women – these are often linked to exploitation and hazardous working conditions. The question that arises is why, despite the increase of audits, international agreements, and national labour laws, working conditions remain poor. What is the underlying cause that keeps working conditions from improving significantly? This section will present an overview of the existing research on working conditions and sourcing practices as the root causes for labour right violations.

From a market perspective, fashion brands point at the difficulty of controlling and implementing labour standards (Locke, 2013, pp. 33–45). Thereby, arguing that they are doing everything within their capability to improve working conditions, but bad factory management makes it virtually impossible. However, blaming it only on managers who do not want to comply with labour standards seems implausible. And indeed, research found that how supervisors and managers in factories are treating workers is often driven by stress and cognitive overload (Brown, Dehejia, Rappaport, et al., 2016; Rourke, 2014). However, it seems, the driver of this stress is not only bad management skills but lies within the business model of the garment supply chain. Factory managers stand as intermediaries between powerful buyers and garment workers with limited power (Perry et al., 2015, p. 738) the fashion industry has become a focal point for debates on the social responsibility of business. Utilising an interview methodology with influential actors from seven export garment manufacturers in Sri Lanka, we explore the situated knowledge at one nodal point of the production network. We conceptualise factory management perspectives on the implementation of corporate social responsibility (CSR). Buyers – retailers and brands located in the Global North – can often dictate

the rules regarding production and price to suppliers in the Global South (Fernandez-Stark, Bamber, & Gereffi, 2011, p. 208; Lee, 2016, p. 17). As production is labour intensive, brands capitalize upon low-wage labour from developing countries (Banerjee Saxena et al., 2020, p. 209). And since labour is abundant, buyers can switch suppliers without costs (Hoang, 2019, p. 3).

The result is enormous competition for orders among factories. Factory managers struggle to keep orders and need to maximize capacity while minimizing costs. They will even sell below production costs to keep a buyer (Anner, 2019, p. 715; ILO, 2016b, pp. 3-10). Consequently, compromises are being made on safety, overtime regulations and proper human resources practices. This suggests that it is the pressure exerted through the supply chain that drives down working conditions. Essentially, buyers prioritize low prices over compliance with labour standards, which leads factory managers to do the same (Perry et al., 2015, p. 740) the fashion industry has become a focal point for debates on the social responsibility of business. Utilising an interview methodology with influential actors from seven export garment manufacturers in Sri Lanka, we explore the situated knowledge at one nodal point of the production network. We conceptualise factory management perspectives on the implementation of corporate social responsibility (CSR).

Consequently, research has highlighted the negative impact of the fast fashion business model and its sourcing practices on working conditions (Anner, 2020; Barrientos, 2013; Locke, 2013; Rourke, 2014).³ Some researchers go as far as identifying buyer's sourcing and business practices as the underlying root cause (Locke, 2013) or concluding that purchasing practices directly undermine the labour standards buyers commit to (Barrientos & Smith, 2007, p. 723). Anner

(2020) identifies two channels of pressure that he describes as a price and a sourcing squeeze. Using mixed methods comparing the evolution of garment prices, lead times and working conditions, he explores the relationship between supply chain characteristics and working conditions. The price squeeze is identified from a time trend where prices decline, while labour right violations increase. The conducted surveys reveal that lead times dropped significantly from 2011 to 2016 – a sourcing squeeze – which is attributed to result in excessive overtime (Anner, 2020). These squeezes are pressuring suppliers and can manifest themselves in the form of prices, lead times, uncertain orders or payment terms. Barrientos and Smith (2007, p. 725) use observational findings from an impact and find that certain fast fashion practices are deemed to cause insecurity and fluctuation in orders. One common practice is to place small orders – to minimize costs of inventory – and when products sell out, new orders are placed on short notice (Barrientos & Smith, 2007, p. 725). The suppliers follow suit applying overtime or short contracts, in order not to lose the customer.

In broader terms research highlights, how buyers exert pressure through sourcing practices and purchasing terms which leads suppliers to compromise on working conditions. While the channel of pressure on wages through a price squeeze is relatively straightforward, other channels are more complicated. What most sourcing practices have in common is putting pressure on factories to produce fast and at low cost. It is primarily the fast fashion business model that is blamed for putting extreme pressure on factories and working conditions. To understand how the fast fashion model is potentially impacting working conditions, the next section highlights its characteristics and sourcing practices.

3 Fast fashion refers to the selling of ever more collections in less time and is opposed to the traditional four seasons per year. Examples are Shein, H&M, Inditex (Zara, Bershka, Pull&Bear...), Primark, Forever 21, Uniqlo, Urban Outfitters, Nike, Gap, American Eagle and many more.

2.3 SOURCING PRACTICES IN FAST FASHION

Fashion traditionally ran on four seasons per year, where designers worked in advance and predicted styles. The industry changed towards the end of the 20th century when production of clothing became cheaper and faster. Today, fast fashion brands present a new collection every week and clothing is cheaper than ever. The business model of fast fashion is built on replicating high-fashion designs and producing them in mass at low cost (Mihm, 2010, p. 57). Styles are produced as they emerge – in almost real-time. Because items must be produced fast and cheap, cuts are made at other corners: low quality material, lack of quality control and low wages. This is, however, not a problem for brands as the cheap quality fuels the consumer's need for new clothing (Mihm, 2010, p. 56). Consequently, fast fashion has been accused of planned obsolescence. Often collections are produced in small batches, further increasing the need to “buy now”. Together with the low cost of clothing, consumers do not view clothing as an investment (Mihm, 2010, p. 56). Despite the low prices, brands earn millions because of the volume they sell (Mihm, 2010, p. 58).

The sourcing practices characteristic to the fast fashion business model are short lead times and rushed orders, fluctuations in order size (uncertain orders and changes to the volume) and late changes to the specification of products. These practices make production planning difficult and result in excessive overtime, supervisors no longer encouraging (or actively prohibiting) the use of safety equipment or resorting to yelling at workers in order to make them work faster. With uncertain production volume, it is preferable for factories to hire few workers and make them work harder, sub-contracting other factories

or hire additional workers on short-term contracts, when volume rises.⁴ The brand Nike confirmed that they found that every time a factory had to produce a new style, efficiency was reduced, and working hours increased (Locke, 2013, p. 128). The report also acknowledges last-minute changes in styles, bad market forecasting and miscalculation of production capacity of factories as drivers of excessive overtime (Locke, 2013, p. 128). Timberland – another major fashion company – acknowledges that number of styles simultaneously developed or launched and bad planning regarding production capacity are making it harder for factories to limit excessive overtime (Locke, 2013, p. 128).

Another common practice is to issue penalties for late deliveries and defective products. These penalties increase supervisor and manager stress and cognitive load. As garments are already produced at the lowest possible cost, there is no margin to absorb additional penalties and factory management may be incentivised to compromise on working conditions (Brown, Rajeev, et al., 2016, p. 236).

While existing research on the impact of sourcing practices on working conditions is mostly built on observational and descriptive studies, some empirical work has found negative links between sourcing practices and labour right violations. Research by Tufts University (Brown, Dehejia, Rappaport, et al., 2016) has drawn on data by Better Work Vietnam and investigated the impact of sourcing practices on compliance with working conditions. They find that changes in technical requirements or order size, rush orders, as well as fines for defect product and late deliveries negatively impact working conditions (Brown, Dehejia, Rappaport, et al., 2016, p. 239).

4 Sub-contracting firms are often not inspected by the buyer (Anner, 2020, p. 325).

Besides providing additional empirical evidence using regression models and descriptive analysis, what sets this paper apart, is the measurement of compliance with labour standards from a worker's perspective. Aside from the aforementioned research in Vietnam, only few papers look at the impact of sourcing practices on working conditions empirically and even fewer look at this link on a factory level and from a worker perspective. However, as pointed out by the Organisation for Economic Co-operation and Development (OECD) (2017, p. 170) in their guidelines on the assessment of working environment quality, whenever possible, additional value can be

gained from measuring working conditions at an individual level. Apart from the fact that every worker experiences working conditions in a different way, the main advantages pointed out, are the larger sample size and the possibility to focus on the implementation of labour standards, rather than their claimed existence (OECD, 2017, p. 170). For example, whether safety equipment is available is easily assessed during an audit, but whether it is always used – not only during external visits – is harder to measure. In short, who better to judge in assessing their working conditions, than workers themselves?



3. Data

This section presents the data used for the empirical analysis. More detailed attention is given to the preparation of the data used to measure labour standards and sourcing practices. In addition, compliance with working conditions from external factory assessments is compared to working conditions according to worker's survey. A list of all the variables used in the empirical analysis and their description can be found in Table A.1 in appendix A.1.

3.1 DATA OVERVIEW

BFC comprises 59 brands and retailers, 557 factories and over 614'000 workers and it is the longest-running BW program (Better Work, 2021a). The program is mandatory for all exporting garment factories in Cambodia. After an initial assessment, audits are conducted annually on a two-day unannounced visit.⁵ The guiding pillars of compliance against which the factories are assessed, are based on core labour standards and national labour laws (see chapter 3.2). When assessing compliance, BW has a sub-set of questions or aspects within each compliance category, where it distinguishes between evidence of non-compliance, and no evidence of non-compliance with labour standards.

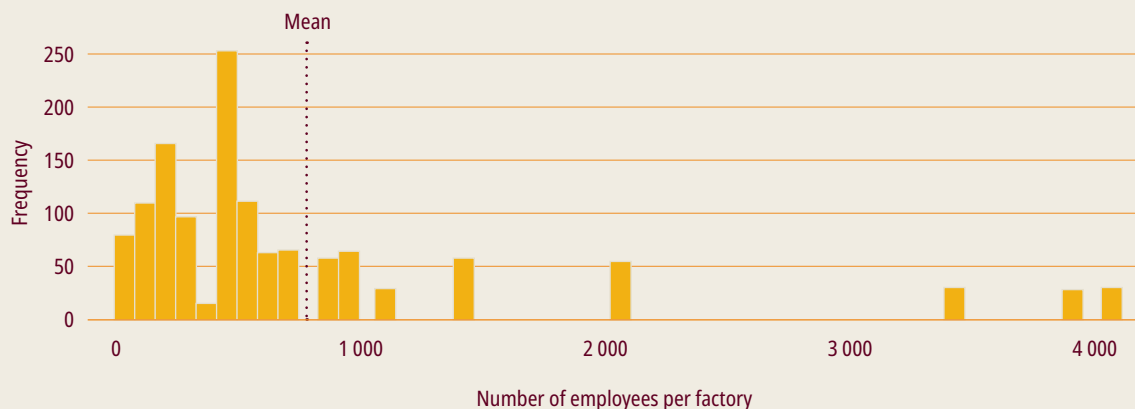
However, instead of using factory assessment data, this paper uses BW worker and manager survey

data from garment factories in Cambodia (Better Work, 2021e). The survey questioning workers and managers was conducted by Better Work, but organized by Tufts University, which does the impact evaluation for BW. The survey data from workers and managers was collected in 73 different factories between 2015 and 2018. The factories were randomly chosen as a stratified sample.⁶ As illustrated in Figure 1 the factories vary greatly in size, with most employing below 1'000 workers, but some having around 4'000 employees. In every factory, up to 30 workers (but no more than 5% of the workforce) and up to 4 managers were randomly selected. Managers were informed about the selected workers at the arrival of the data collection team. The surveys were conducted in a self-guided and audio-assisted tablet format. Workers were questioned about different aspects of working conditions they face in their job, as well as standards of living and demographics.

⁵ Due to logistic constraints the assessments are between 11 and 15 months apart (Antolin et al., 2020, p. 8).

⁶ Among five categories of factories: factories receiving assessment and training; factories receiving only assessments; factories receiving assessment and advisory; factories registered with BFC, but without completed assessment as of study; footwear factories.

FIGURE 1. DISTRIBUTION OF EMPLOYEES PER FACTORY



NOTE: Histogram depicting the distribution of factories according to their number of employees. Only observations used in the empirical analysis.

In addition, Financial Managers, Industrial Engineers, General Managers and/or Human Resource Managers were interviewed around aspects of business relationship with buyers, sourcing practices and the employees in the factory. Out of all of these, this research will only use the General Manager survey and one question from the Human Resource survey. The General Managers' survey gives insight into sourcing practices of buyers and the problem these present for the business success of the factories (see chapter 3.3). Whenever a factory was visited twice, and whenever possible, the same workers were questioned again. However, not all factories were visited twice and when the same workers were not available, others were chosen at random. This results in cross-sectional rather than panel data, as factories, workers and managers were not necessarily the same across years.

In this study, the sourcing practices that are perceived as most critical by managers and the ones that have been linked to working conditions in previous research are selected and their impact on working conditions is investigated. Since data on sourcing practices is only available for 75 factories, if linked to the compliance from external factory assessment, this would result in a small sample. Instead, this paper builds on the data available from worker's survey and thereby introduces an additional angle, by measuring working conditions from a worker's perspective. For this purpose, a working condition index by labour

standard categories is established in the next section. Building a measure for working conditions for every worker increases the sample size and allows for an analysis that puts workers at the centre.

3.2 WORKING CONDITIONS

In order to obtain a measure for working conditions from a worker's perspective, an index is built out of the worker's survey. The index is built based on the Compliance Assessment Tool (CAT) used by BW to assess compliance among participating factories (Better Work, 2020). The CAT is a set of questions that are grouped into different categories. Thereby, BW extends the ILO's core labour standards – Child Labour, Discrimination, Forced Labour, and Freedom of Association and Collective Bargaining (FACB) – to include Compensation, Contracts and Human Resources (CHR), Occupational Safety and Health (OSH), as well as Working Time (Better Work, 2021b). Table 1 puts these vis-à-vis the working condition categories constructed from the worker's survey. Since no information on child labour or forced labour can be extracted from the surveys, these two categories are not considered. The six categories are: Compensation, Contracts and Human Resources, Occupational Safety and Health, Working Time, Discrimination, and Freedom of Association and Collective Bargaining.

TABLE 1. COMPLIANCE CATEGORIES BETTER WORK AND WORKER'S SURVEY

COMPLIANCE CATEGORIES FROM BW'S CAT	WORKING CONDITIONS FROM WORKER'S SURVEY
Child labour	No information
Discrimination	Discrimination
Forced labour	No information
Freedom of association and collective bargaining	Freedom of association and collective bargaining
Compensation	Compensation
Contracts and Human Resources (Contract and Workplace Relations)	Contracts and Human Resources (Contract and Workplace Relations)
Occupational safety and health	Occupational safety and health
Working time	Working time

NOTE: Compliance categories used by BW in their CAT and the index of working conditions built from the worker's survey and used in the empirical analysis. Source: (Better Work, 2021b).

The relevant questions from the worker's survey were selected and attributed to the six different categories.⁷ This results in each of the six categories comprising between five and 28 questions. Many questions can be answered on a scale. However, this scale is not the same for all questions and in order to get a consistent measure, answers had to be recoded. For example, the question "Do any of the supervisors or managers ever talk to you or touch you in a way that makes you uncomfortable?" can be answered with "Yes, often", "Yes, sometimes", "Only rarely" or "No, never". In this case, to know whether supervisors or managers ever act inappropriately, the variable was recoded with "Yes, often", "Yes, sometimes" and "Only rarely" coded as 1 (yes) and "No, never" as 0 (no). A higher score in the measure of working condition is therefore implying poorer working conditions. This is the equivalent of 0 as no evidence of non-compliance, which is how it would be measured in an external factory assessment.⁸

Additionally, recoding the answers as dummy variables simplifies the analysis and interpretation.

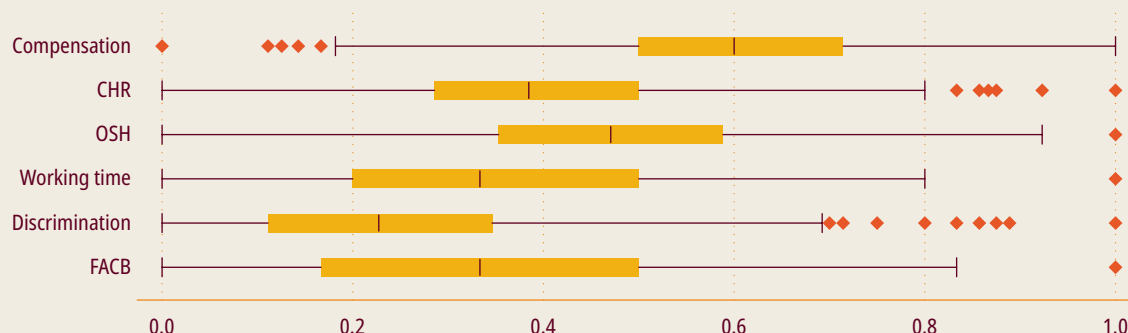
After recoding all the relevant questions, a measure by working condition category is built. Therefore, the mean over all non-missing observations per category and worker is calculated. This results in six measures with a value between 0 and 1 per worker. This measure by workers allows for within factory variation of working conditions. This variation could also be the willingness of workers to answer a question. This is addressed by controlling for demographics and comparing the resulting measure for working conditions to the external factory assessment by BW. A detailed list of all questions corresponding to the respective categories can be found in Table A.2 in appendix A.2. The resulting measures for each working condition category are depicted as box plots in Figure 2.⁹

⁷ The questions/sub-points from the CAT were used as a guidance to categorize the questions from the worker's survey.

⁸ BW differentiates between a score 0 for "no evidence of non-compliance" and 1 for "evidence of non-compliance."

⁹ Detailed descriptive statistics and frequency distributions can be found in Table A.7 and Figure A.1 in appendix A.5.

FIGURE 2. DISTRIBUTION OF WORKING CONDITIONS



NOTE: Box plot of working conditions by category. The white line is the median. The bottom of the box is the first quartile and the top the third quartile. The end of the left (right) whisker is the 1st percentile (99th percentile). The dots outside of the box represent outliers. Only the observations used in the empirical analysis are presented.

Overall, working conditions appears to be worst for Compensation, OSH, as well as CHR. Discrimination has the lowest mean. This is in line with the findings from the factory assessment (see chapter 3.5). It is noteworthy that while for each category only few observations are missing (see chapter 3.4 and appendix A.5) the category Discrimination has many missing values (up to 76%) for certain sub-questions. Namely, those asking directly about discrimination due to certain demographics. The two questions with highest percentage of missing values are “Have any of the supervisors or managers offered you any benefits

in exchange for sexual favours or a sexual relationship?” and “You reported that you were treated unfairly in the last six months. Which of the following were reasons for that treatment?”.¹⁰ It remains unclear whether a missing value stems from workers not wanting to or not knowing what to answer. To rule out potential bias, the measures of the category Discrimination for workers who answered to these questions and of those who didn’t are compared in Table 2. The mean values are similar, but standard deviation is slightly higher when the questions were not answered. However, the number of observations is higher too.

TABLE 2. DISCRIMINATION - MISSING OBSERVATIONS

		OBSERVATIONS	MEAN	STD. DEV.	MIN	MAX
Questions benefit for sexual favour	Answered	787	.261	.112	.077	.8
	Not answered	2'120	.256	.251	0	1
Questions unfair treatment	Answered	729	.229	.088	.05	.615
	Not answered	2'178	.267	.251	0	1

NOTE: Descriptive statistics of the working condition Discrimination. Comparing values for who answered and those who did not answer sub-questions of the category Discrimination. Calculated using all non-missing answers within the category.

10 Possible answers:

- | | |
|--------------------------------|--|
| 1 Your job performance | 6 Your family obligations or pregnancy |
| 2 Your skin color or ethnicity | 7 Your union activities or political views |
| 3 Your religion | 8 Your response to sexual advances from your supervisor |
| 4 Your gender | 9 How often you complain or talk back to your supervisor |
| 5 Your age | 10 Other |

As the two measures of Discrimination are similar in size, it will be assumed that there is no evidence of systematic underreporting in the sample. The missing values are not recoded and will not be used in the regression analysis.

From the workers’ survey, there is information on the type of contract. As is displayed in Table 3, about 11% do not have any contract, 7% a probationary contract, 40% a contract that is shorter than 3 months and only about 7% have an unlimited duration contract.

TABLE 3. DESCRIPTIVE STATISTICS – TYPE OF CONTRACT OF WORKERS

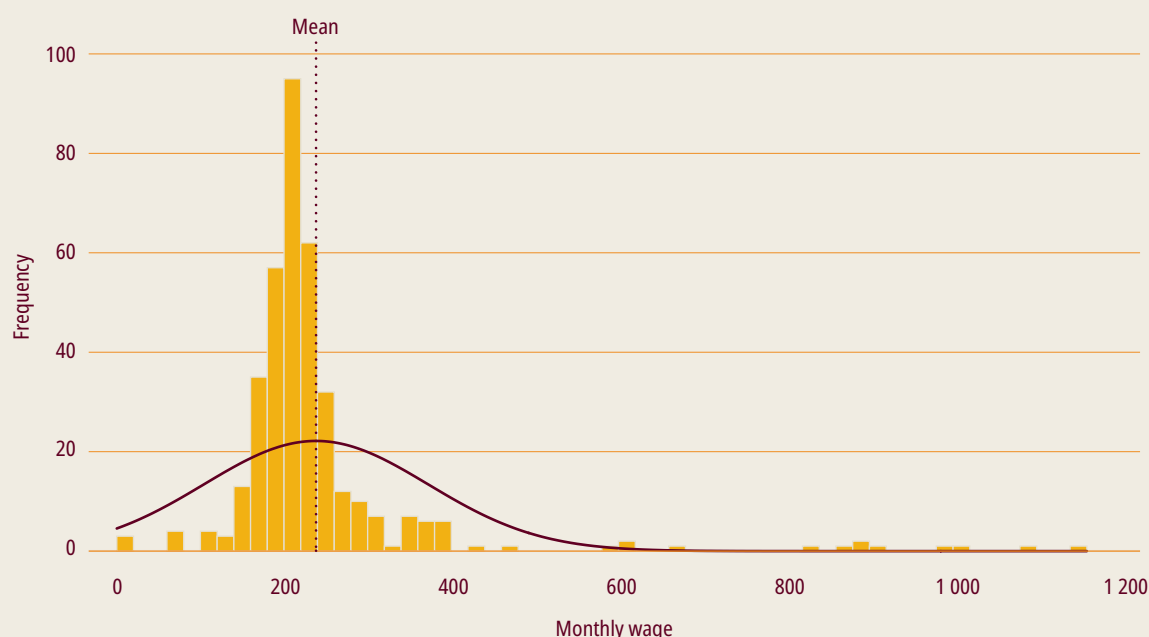
	FREQUENCY	PERCENT	CUMULATIVE
No contract	106	9.35	9.35
Probation contract	100	8.82	18.17
3 month contract or shorter	476	41.98	60.14
4 to 6 month contract	239	21.08	81.22
7 to 12 month contract	57	5.03	86.24
Fixed duration contract (longer than 12 months)	66	5.82	92.06
Unlimited duration contract	90	7.94	100.00
Total	1'134	100.00	

NOTE: Descriptive statistics of the type of contract workers have. Only the observations used in the empirical analysis (that can be matched to sourcing practices) are presented.

For some workers self-reported data on wages is available. Figure 3 shows the distribution of monthly wages for workers. Mean wage per month is around

240 dollars and the standard deviation is considerable (134 dollars).

FIGURE 3. MONTHLY WAGE OF WORKERS



NOTE: Histogram showing the distribution of monthly payments to workers. Only observations that can be linked to a sourcing practice in the empirical analysis are depicted (372 workers – payment data available for 898).

3.3 SOURCING PRACTICES

Managers were asked about different purchasing practices and whether these present a challenge to their business. Building on the findings from Vietnam, the sourcing practices chosen in the empirical model are: *rush orders*, *changes in order size*, *customer penalties for late deliveries*, *customer penalties for production defects* and *changes in technical requirements*. In addition, *uncertain orders*, *replenish orders* and *customer lack of knowledge of Cambodia's labour law* were included. The first two are expected to have an impact comparable to rush orders or changes in order size (see chapter 2.3). Customer lack of knowledge of Cambodia's labour law is introduced to see whether customers are familiar with the local laws. Managers could answer that these sourcing

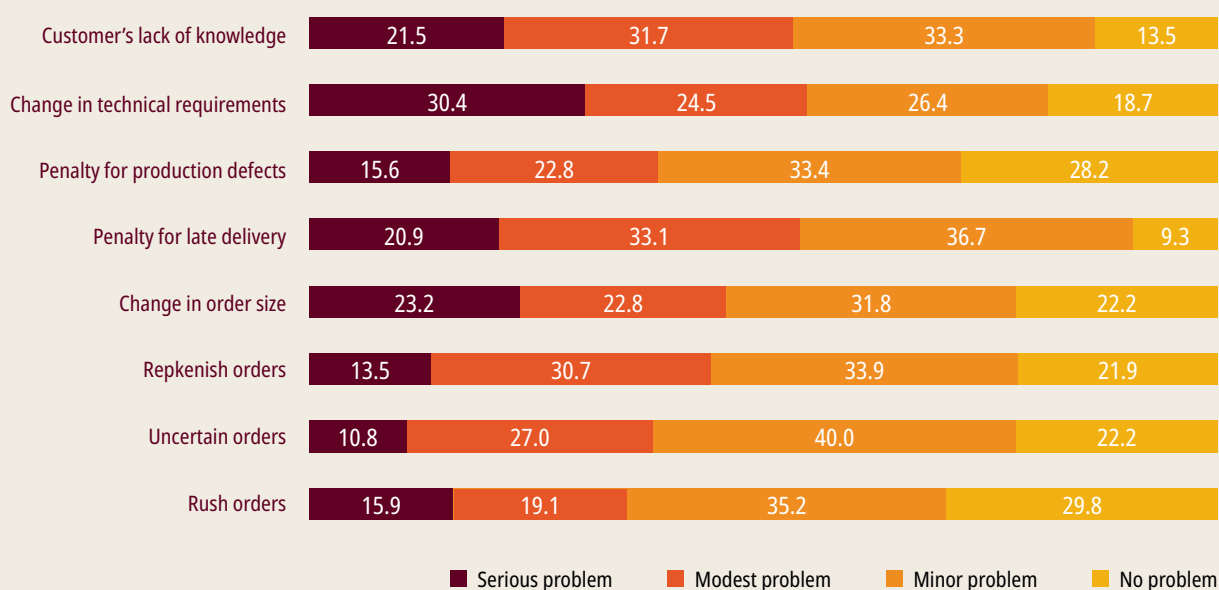
practices were “Not a problem”, a “Minor problem”, a “Modest problem” or a “Serious problem” for business success. Answers are recoded to 0 for “Not a problem” or a “Minor problem” and 1 for a “Modest problem” or a “Serious problem”.¹¹

With regards to sourcing practices, *rush orders*, *uncertain order size* and *changes in order size* are perceived to be a serious or moderate problem by more than 50% of managers as can be seen in Figure 4.¹² *Customer penalties for late delivery* and *customer penalties for production defects* are viewed as a serious or moderate challenge by over 40%. *Replenish orders*, *changes in technical requirements* and *customers' lack of knowledge of Cambodia's labour law* were identified as problematic by over 30% of managers.

¹¹ A robustness check is conducted where sourcing practices are not recoded to binary variables (see chapter 5.3).

¹² Table with detailed descriptive statistics on sourcing practices can be found in Table A.4 in appendix A.4.

FIGURE 4. SOURING PRACTICES AS PERCEIVED BY GENERAL MANAGERS



NOTE: Sourcing practices as perceived by general managers. Bar chart in percentage of non-missing. Possible answers: Serious Problem, Modest Problem, Minor Problem or No Problem.

Detailed descriptive statistics on a set of supply chain characteristics can be found in Table A.5 in appendix A.4. It appears that length of business relationship varies greatly but is on average around five years for the most important customer. Among the most important customers, over 60% do not pay their orders within 30 days of delivery. This could potentially result in added financial pressure on factories.

3.4 DATA LIMITATIONS

There are several advantages to using data from Better Work over data from private commercial monitoring, which could translate to the data used in this study. The assessment by BFC is mandatory for exporting garment factories in Cambodia, which allows for an industry-wide coverage. The factories cannot choose who monitors them and they do not pay them directly. BFC has several years of experience with factory assessments in Cambodia and monitors

speak the language of workers and know local customs. Nonetheless, there are also drawbacks to the data. Literature using compliance data suggests that it should be handled with care, as factories can learn how to cleverly hide violations of labour standards. This is, for example, done by letting inspectors wait in front of closed gates or by keeping a second book (Banerjee Saxena et al., 2020, p. 91; Oka, 2016, p. 10). There are records of workers being threatened about their factory losing orders if the compliance rating is low or workers simply not disclosing non-compliance for fear of losing their job (Banerjee Saxena et al., 2020, p. 91). Although, the data from the worker and manager survey is not a usual compliance monitoring, it can be assumed that managers are cautious to hide violations since BW is also conducting the factory assessments in their factories. In addition, underreporting is widespread, especially when it comes to reports of abuse or sexual harassment (Truskinovsky, Rubin, & Brown, 2014; Weziak-Białowolska, Białowolski, & Mcneely, 2020, p. 5).

The central problem of the data, however, is the number of missing observations that result when regressing working conditions on sourcing practices. Sourcing practices, derived from answers by General Managers, are not available for every factory. This leads to many missing observations. Overall, 75 General Managers and 3'097 workers were interviewed between 2015 and 2018. In Table A.6 in appendix A.5, the main variables used in the regressions and their respective missing observations are listed. While there are few missing observations from working conditions or demographics, the low number of general manager surveys translates to about 1'315 observations (65%) that can be used in the empirical analysis. Consequently, working conditions (from workers'

survey) could be biased. Non-availability of managers to answer the question could imply lower management skills linked to poorer working conditions. In order to address this, the following section will compare the *Sample* – referring to the observations used in the empirical analysis – to the total data set, the *Population*.

The size of the factories and the number of workers interviewed per factory are similar for the *Population* and the *Sample*. As can be seen in Table 4, the average number of workers in a factory is 780 for the *Sample* (800 for the *Population*) and the standard deviation amounts to over 900. The average number of workers interviewed per factory is 27 and ranges between 3 and 31.

TABLE 4. NUMBER OF EMPLOYEES AND WORKER SURVEYS PER FACTORY

	SAMPLE				POPULATION			
	Mean	SD	Min	Max	Mean	SD	Min	Max
# of Employees	787.80	928.54	22	4'093	806.10	832.02	18	4'093
# of Worker Surveys	27.05	6.06	3	30	27.21	5.96	3	31

NOTE: Descriptive statistics of the number of employees and the number of workers interviewed per factory. On the left side the *Sample* (used in the empirical analysis) and on the right side the *Population*.

The descriptive statistics for worker demographics and working conditions are compared in Table A.8 and Table A.7 in appendix A.5. The structure of the *Sample* and the *Population* are similar so that with regard to demographics the missing observations do not appear to be systematic. Similarly, for the measures of working condition the mean values and the standard deviations are comparable in size too. In addition, Little's test for Covariate-Dependent Missingness

(CDM) –a special case of Missing At Random – is run for the sourcing practices and covariates (worker demographic) to assess the randomness of missing observations (Li, 2013, p. 796).¹³ The null-hypothesis (missing observations are independent of missing, as well as observed data) for CDM cannot be rejected. This implies that in order to ensure missing at random, the analysis needs to include the covariates.

13 The CDM test drops all observations with missing covariates.

Despite these possible drawbacks, the unique compositions of the data, including working conditions from a worker's perspective and sourcing practices as perceived by managers, allows for an in-depth analysis of their relationship. The measurement of working conditions from a worker's perspective makes it possible to capture aspects of working conditions that can be hard to pick up on in a two-day factory assessment. Furthermore, the analysis of the missing observations showed no indication of a bias that would distort the results.

3.5 COMPLIANCE DATA FROM FACTORY ASSESSMENT

This section compares the measures for working condition from the worker survey to compliance from BFC factory assessment (Better Work, 2021f). Although the two measures differ in the underlying questions, as well as the method of assessment, interesting insights can be gained.

The CAT used by BW to assess factories on their compliance, covers over 200 questions regarding labour standard issues (Better Work, 2020). This tool is used during unannounced visits to the factories. Non-compliance is coded as 1 and no evidence of non-compliance is coded as 0 (Better Work, 2020). The main difference between the compliance measure by BW and the measure for working conditions used in the present paper is that the former is always

assessed on a factory level while the latter allows for within factory variation of working conditions. The two are compared in Table 5. For comparison purpose only the data used in the regressions (with answers on sourcing practices from General Managers) are compared. The assessment categories are grouped into the main categories (according to the CAT). The two cannot be directly compared in terms of magnitude of non-compliance, but some interesting findings present themselves. In the factory assessment (right side of the table), there is hardly any evidence for non-compliance in Discrimination or FACB. Non-compliance in CHR, and Working Time is relatively low too. Though the same categories experience less evidence of poor working conditions, the magnitude is not in line with what is found in the workers' survey (left side of the table).

Especially the category Discrimination shows that the way in which workers perceive to be treated is not in accordance with what is found in the external assessments. The measure Gender from the factory assessment includes sexual harassment and is very low. However, according to the worker survey many workers have experienced sexual harassment. The low value in the external factory assessments could stem from workers not reporting sexual harassment in external audits out of fear of losing their job. This phenomenon is known to be common in reports of verbal abuse and sexual harassment (Rourke, 2014; Truskinovsky et al., 2014).

TABLE 5. DESCRIPTIVE STATISTICS – WORKER SURVEY AND FACTORY ASSESSMENT

	WORKER SURVEY				FACTORY ASSESSMENT		
	Count	Mean	Std. Dev.		Count	Mean	Std. Dev.
Compensation	1'304	0.597	0.200	Minimum Wage	1'246	0.073	0.114
				Overtime Wages	1'246	0.124	0.177
				Premium Pay	1'246	0.024	0.153
				Paid Leave	1'246	0.106	0.140
				Social Security and Other	1'246	0.058	0.121
CHR	1'313	0.382	0.148	Dialogue Discipline and Disputes	1'246	0.154	0.086
				Employment Contracts	1'246	0.149	0.176
				Termination	1'246	0.177	0.188
				Contracting Procedures	1'246	0.137	0.165
OSH	1'306	0.463	0.191	OSH Management Systems	1'246	0.373	0.303
				Chemicals	1'246	0.332	0.315
				Worker Protection	1'246	0.246	0.176
				Working Environment	1'246	0.565	0.235
				Worker Accommodation	1'246	0.022	0.101
				Emergency Preparedness	1'246	0.090	0.113
				Health Service and First Aid	1'246	0.428	0.199
				Welfare Facilities	1'246	0.430	0.267
Working Time	1'270	0.364	0.274	Regular Hours	1'246	0.051	0.120
				Overtime	1'246	0.266	0.200
				Leave	1'246	0.076	0.167
Discrimination	1'315	0.258	0.230	Race and Origin	1'246	0	0
				Religion and Political Opinion	1'246	0	0
				Gender	1'246	0.007	0.030
				Other Grounds	1'246	0.035	0.036
FACB	1'269	0.330	0.234	Freedom to Associate	1'246	0.068	0.169
				Union Operations	1'246	0.039	0.128
				Interference and Discrimination	1'246	0.020	0.055
				Collective Bargaining	1'246	0.009	0.041
				Strikes	1'246	0	0

NOTE: Working conditions as measured from worker's survey (left side) and compliance as measured during the external factory assessments by BW (right side). Only observations used in the empirical analysis are presented.

A more detailed comparison would be needed to draw further conclusions. Nonetheless, it appears that external assessments and working conditions as perceived by workers are not identical. This further underlines the additional value that can be gained

from introducing a measure of working conditions from a worker's perspective. The following empirical analysis will only be using compliance data from worker surveys (referred to as working conditions) and not from factory assessments.

4. Empirical Specification

Working conditions are impacted by managers choices and behaviour. For example, they can tell workers to do overtime or decide on trainings and benefits. In addition, when putting pressure on supervisors to increase capacity, these can in turn resort to yelling at workers to make them work faster. There are different factors that can influence a manager's behaviour. Among others, the costs of compliance, the current production technologies and personal characteristics (Brown, Dehejia, Rappaport, et al., 2016, p. 235). What has been found in previous research (see chapter 2.3) and is argued in this paper is that working conditions are also driven by sourcing practices. These sourcing practices set by buyers create incentives and pressure that impact a manager's behaviour and choices regarding compliance with labour standards that manifests in better or worse working conditions. Thus, a relationship between sourcing practices and working conditions as depicted in Figure 5 is assumed.

FIGURE 5. IMPACT OF SOURCING PRACTICES ON WORKING CONDITIONS



NOTE: Representation of how sourcing practices are expected to influence working conditions.

The impact of sourcing practices on working conditions is analysed using an ordinary least squares (OLS) regression. In order to explain the relationship between the dependent variable working conditions and the independent variables sourcing practices, OLS estimates the parameters of a linear function that minimizes the sum of squared residuals (Wooldridge, 2013, p. 30).¹⁴ In order to get the causal impact of sourcing practices on working conditions, the

sourcing practices a factory manager experiences would need to be random and working conditions should be the same for all workers when experiencing the same sourcing practices. It can be argued that factory managers have only limited control over the sourcing practices they experience. These are dictated to them by global buyers with asymmetrically more power, who can switch supplier if they want to. As argued before, factory managers have limited power

¹⁴ Residuals are the difference between the observed dependent variable (working condition) and its fitted value (Wooldridge, 2013, p. 30)

in negotiating terms of contracts with buyers and sourcing practices as they are in fierce competition with other suppliers. Since all factories are producing in the same industry and country, it can reasonably be assumed that production technologies and the cost of compliance with working conditions are similar across factories. However, larger factories might have more professional management, lower costs due to economies of scale and more advanced technologies (Liu, Mishra, Goldstein, & Sinha, 2017, p. 7; Oka, 2010, p. 170). The empirical strategy will thus account for the size of the factory by controlling for number of employees.¹⁵ The year in which the data was collected could also impact working conditions, for example, if there were changes in labour law. As described, the data is not in panel format, but rather cross-sectional.

As most observations took place in 2016 and 2017, the regressions do not control for year fixed effects. However, a robustness check controlling for the respective year is conducted (see chapter 5.3).

In theory all workers should be affected by sourcing practices in the same way. Equally, their perception of working conditions should be the same. However, it is likely that the differences among workers make them more or less susceptible to poor working conditions. For example, women are more likely to suffer sexual harassment or discrimination regarding childbearing. Worker demographics might not only change the way in which workers are treated or behave, but also in how workers perceive treatment and their working conditions.



A worker that has been working in the factory for many years will have another view on working conditions in the factory, than someone who has just picked up work a month ago. To control for these potential biases, worker demographics for gender, education, how many years a worker has been working in the factory and whether a worker is married are included in the regression.¹⁶ Higher education or more work experience are likely to impact wages and overtime. Gender and marital status could impact discrimination, but also working time (e.g., women with children but without a partner might need to work more to sustain their family) or treatment by supervisors (e.g., married women often get treated with more respect). In addition, the type of job of a worker will be added to the regression on Compensation.¹⁷ Since worker demographics should be unrelated to the sourcing practices (regressors) but could have an impact on working conditions (outcome), they are expected not to change the coefficients, but rather to reduce standard errors and therefore increase precision.

In the model, the measure of working conditions for each category is a linear function of the independent variables sourcing practices, factory size and worker demographics. In addition, wage of workers and whether workers have short-term contracts will be regressed on sourcing practices too.¹⁸ This is done to get a better insight into the direct effect sourcing practices can have on a worker's livelihood. The form of contract is not used as a control variable, as it is likely to be an outcome of sourcing practices.

For example, changes in order size could increase the number of short contract workers. The additional sourcing practice *customer requirement for safety equipment* will be added to the regression of OSH. And a control on whether *wages are sufficient without overtime* – indicating if overtime is necessary for economic survival – is added to the regression on Working Time. The baseline regression takes the following form:

$$\begin{aligned} \text{working condition}_i &= \beta_1 + \beta_2 \text{rush_orders}_j + \beta_3 \text{uncertain_order}_j + \beta_4 \text{replenish_order}_j \\ &+ \beta_5 \text{change_ordersize}_j + \beta_6 \text{penalty_late_delivery}_j \\ &+ \beta_7 \text{penalty_production_defect}_j + \beta_8 \text{change_technical_requirement}_j \\ &+ \beta_9 \text{customer_lack_knowledge}_j + \beta_{10} \text{worker_demographics}_i \\ &+ \beta_{11} \text{number_of_employees}_j + \epsilon_i \end{aligned}$$

The subscripts *i* and *j* denote worker- and factory-level respectively. includes the variables *education*, *gender*, *married* and *years of work in factory*.

The results should give insight into the impact of sourcing practices. They are binary variables coded 0 or 1, and the working condition measure takes a value between 0 and 1.¹⁹ Therefore, the coefficients cannot be interpreted as slope coefficients, since only two discrete values of the independent variables are observed. For example, when regressing working conditions on sourcing practices, a significant

16 Descriptive statistics can be found in Table A.3 in the appendix.

17 The variable is not included in the other regressions, as there are many missing observations.

18 Form of contract is also a part of CHR. In recent years, the number of workers on short-term contracts has increased. Not only do short-term contracts lack to provide security for the workers, but temporary employment is often linked to lower wages, more hazardous jobs and a general lack of employee benefits or paid leave (Banerjee Saxena et al., 2020, p. 210; Lee, 2016, p. 10). Short-term contract is a binary variable, therefore a probit model is used and marginal effects are calculated.

19 Notice that sourcing practices are the same for workers in the same factory and year. Measures for working conditions are different for every worker.

coefficient of 0.05 for the regressor *uncertain order* implies that when a factory experiences uncertain orders (=1), the measure for working conditions is 0.05 higher than without uncertain orders. Therefore, uncertain orders would be linked to poorer working conditions. To get expected working conditions, this value would need to be added to the coefficient of the constant.

With cross-sectional data and OLS, heteroscedasticity can be prevalent. If heteroscedasticity is a problem, the coefficients are still unbiased, but their variance may be inflated and they would, in consequence, no longer be the *best* estimates (Hayash, 2000, p. 55).²⁰ As a result, the t- and F-test statistics may no longer be reliable (Hayash, 2000, p. 55). To account for this, the residuals are tested for constant variance – that is homoscedasticity – using the White's test (White, 1980). It is found that the null hypothesis of homoscedasticity cannot be rejected (see Table A.9 in appendix A.6).

A problem arising with the use of OLS is linked to the nested nature of the data. Workers within the same factory are exposed to the same sourcing practices and same non-measurable factory-specific variables. Consequently, they are most likely not independent of each other. This could be addressed using fixed effects, however due to the incomplete data set and differences in number of employees per factory – some with only three employees –, most of the identifying variation is lost. The present study will therefore refrain from applying fixed effects.

Arguably, certain characteristics of the supply chain and the business relationship with customers could influence working conditions. The general manager survey holds information about the business

relationship with the most important customers. For example, the time that elapses between delivery and payment, their type of relationship, as well as the length of their business relationship. As there are many missing observations for these variables and because supply chain characteristics could well influence sourcing practices (i.e., uncertain orders might be less common in longer business relationships), they will not be included in the baseline regression. Instead, to briefly evaluate the impact of these factors on working conditions, an additional regression will include supply chain characteristics of the most important customer.

$$\begin{aligned} \text{working condition}_i &= \beta_1 + \beta_2 \text{relationship_length}_i + \beta_3 \text{time_until_payment}_i \\ &+ \beta_4 \text{type_of_business_relationship}_i + \beta_5 \text{worker_demographics}_i \\ &+ \beta_6 \text{number_of_employees}_i + \varepsilon_i \end{aligned}$$

Regression (2) includes *length of business relationship* and *time until payment* after delivery as independent variables and further controls for the *type of business relationship* with a customer – preferred supplier, contractor or sub-contractor. In line with the baseline regression, worker demographics and number of employees are also controlled for. The time until payment of a delivery is controlled by buyers and assumed to negatively impact working conditions since late payments put additional pressure on factory managers. Length of business relationship is to some point also controllable by buyers and may impact the level of communication and stability needed for production planning, which could result in increased labour standards.

20 The coefficients are no longer BLUE (Best Linear Unbiased Estimate) but only LUE (Linear Unbiased Estimates).

5. Results

5.1 RESULTS BY WORKING CONDITION CATEGORY

This section presents the regression results for each of the six working condition categories. In Table 6 regression results are presented for each working condition category. In addition, monthly payments to

workers and short-term contracts are regressed on sourcing practices. Marginal effects from the probit model for Short-Term Contracts can be found in Table 7. Details on results and changes to the regressions are presented thereafter (chapters 5.1.1 – 5.1.6).



TABLE 6. ESTIMATES OF THE EFFECT OF SOURCING PRACTICES ON WORKING CONDITIONS

	(1) COMPENSATION	(2) MONTHLY WAGE	(3) CHR	(4) SHORT-TERM CONTRACT	(5) OSH	(6) WORKING TIME	(7) DISCRIMINATION	(8) FACB
Rush Orders	-.015 (.015)	18.584 (17.702)	-.02* (.011)	.562*** (.114)	-.006 (.015)	.008 (.022)	-.014 (.016)	-.011 (.017)
Uncertain Orders	.028* (.015)	-26.514 (19.017)	0 (.011)	-.088 (.115)	.014 (.014)	-.033 (.023)	.008 (.016)	.052*** (.017)
Replenish Orders	-.01 (.014)	3.026 (18.642)	-.024** (.01)	-.274** (.108)	-.021 (.014)	-.019 (.02)	-.036** (.015)	-.027* (.016)
Changes in Order Size	-.018 (.016)	-49.859** (19.927)	.019* (.012)	.330*** (.118)	-.009 (.015)	.054** (.023)	.007 (.017)	-.015 (.018)
Penalties for Late Delivery	-.011 (.018)	19.2 (25.967)	.02 (.013)	-.016 (.135)	-.006 (.017)	.03 (.026)	-.021 (.019)	0 (.02)
Penalties for Production Defects	.015 (.02)	-21.734 (30.223)	-.002 (.014)	-.115 (.143)	.013 (.018)	-.042 (.028)	.043** (.02)	.017 (.021)
Changes in Technical Requirements	.032* (.018)	22.074 (21.42)	.039*** (.013)	.362*** (.136)	.064*** (.017)	.074*** (.026)	0 (.018)	.044** (.02)
Customer Lack of Knowledge	-.028* (.017)	-31.659 (21.494)	-.02* (.012)	-.511*** (.125)	-.022 (.016)	-.065*** (.023)	-.022 (.017)	-.054*** (.018)
Customer Safety Equipment Requirements					-.033** (.016)			
Wage Sufficient without Overtime						.014 (.02)		
Constant	.548*** (.043)	251.588*** (49.794)	.414*** (.029)	.082 (.286)	.544*** (.036)	.372*** (.057)	.276*** (.012)	.313*** (.043)
Observations	910	322	1083	968	1070	888	1315	1058
R-squared	.025	.173	.035		.044	.045	.011	.041

NOTE: Standard errors are in parentheses. For Short-Term Contract estimates from a probit model are presented. For all other OLS estimates are displayed. Each regression (apart from Discrimination) further includes worker demographics and the number of employees (scaled by 1000). Column (2) has few observations, because of missing observations for Monthly Payment.

Significance level: *** $p < .01$, ** $p < .05$, * $p < .1$

TABLE 7. REGRESSION OUTPUT – SHORT-TERM CONTRACTS: MARGINAL EFFECT

	MARGINAL EFFECT	
Rush Orders	0.179***	(0.035)
Uncertain Orders	-0.028	(0.037)
Replenish Orders	-0.088**	(0.034)
Change in Order Size	0.105***	(0.037)
Penalties for Late Delivery	-0.005	(0.043)
Penalties for Production Defect	-0.037	(0.046)
Changes in Technical Requirements	0.115***	(0.043)
Customer Lack of Knowledge	-0.163***	(0.039)

NOTE: Marginal effects from a probit model. Regression further includes worker demographics and the number of employees (scaled by 1000).

Standard errors are in parentheses.

Significance level: *** $p < .01$, ** $p < .05$, * $p < .1$

5.1.1 COMPENSATION

The category Compensation includes, among others, information on whether the factory pays workers on a regular basis, whether workers think that their wages are too low, if wages are sufficient without overtime and whether there were strikes because of wages or payment terms. Since it can be expected that payment terms vary according to the job a worker executes, the worker demographics are extended to include *the type of job* of a worker.²¹ The results show that *changes in technical requirements* and *uncertain orders* have a significant – at the 0.1 level – impact and tend to increase the evidence of poor working conditions by 0.032 and 0.028 respectively. *Customer lack of*

knowledge of Cambodia's labour law does also have a significant impact at the 0.1 level and decreases the measure for Compensation by 0.028. With a constant of 0.548, these coefficients each individually imply a change in working conditions of about 5% that is brought about by these sourcing practices.

In addition, the actual payments of workers are regressed on sourcing practices. Monthly payment is not included in the Compensation measure, as payment data is available only for 898 of the interviewed workers (from the *Population*). It was found that *changes in order size* significantly decrease payment per month by about 50 dollars. This is equal to a 20% decrease in monthly wage payments.

21 This is not included with other regressions as there are many missing observations.

5.1.2 CONTRACTS AND HUMAN RESOURCES

Contracts and Human Resources involves questions on whether workers feel comfortable asking for help, how they are treated by their supervisors (including verbal and physical abuse), the type of contract they have and if they receive training. Besides the regression of CHR on sourcing practices, a second regression using short-term contracts as a dependent variable was introduced. In the garment industry, short-term contracts are widespread.²² It is noteworthy that short-term contracts are also included within the measure for CHR. Since the variable short-term contracts is binary (1 when a worker has a short-term contract), the regression model needs to be adapted.²³ Instead of an OLS a probit model is applied. To interpret the results, marginal effects are calculated (see Table 7).

The results for CHR show that *changes in technical requirements* have a significant impact (at the 0.01 level of significance) and increase bad working conditions in the category CHR by 0.039 (9%) while *replenish orders* decrease the measure for CHR (-0.024 or 6%).

Rush orders, *changes in order size* and *changes in technical requirements* tend to increase the probability of short-term contracts, by 17.9, 10.5 and 11.5 percentage points respectively. *Replenish orders* and *customer knowledge of Cambodia's labour law* decrease the probability of short-term contracts by 8.8 and 16.3 percentage points, holding all else constant.

5.1.3 OCCUPATIONAL SAFETY AND HEALTH

Information about the use of safety equipment, problems with safety and health as well as training regarding safety are included in the category Occupational Safety and Health. The baseline regression is extended to include the variable *customer requirement for safety equipment*. If managers perceive these requirements to be a problem, it is probably because of the increase in costs or time due to the use of additional or specific safety equipment. However, customer requirements for safety equipment may decrease the measure for working conditions in the category OSH – i.e., improve working conditions.

Changes in technical requirements after production has started significantly increases OSH by 0.064 – an increase of about 12% compared to the coefficient of the constant. As expected, *customer requirements for safety equipment* decrease the measure for OSH (-0.033).

5.1.4 WORKING TIME

Working Time includes questions about workers' concern with excessive working hours, strikes due to overtime and consequences for refusal of overtime. For the regression on sourcing practices, an additional control variable is introduced. Whether *wages are sufficient without overtime* should help control for whether overtime is truly voluntary for workers or not.

22 Factories are required by law to permanently hire workers after two years on probation or short-term contracts.

23 Otherwise, the estimated probabilities can take values above one and below zero, which cannot be interpreted.

Changes in order size and *changes in technical requirements* tend to have a negative impact on working conditions and increase Working Time by 0.054 and 0.074 respectively. *Customer knowledge of Cambodia's labour law* (-0.065) decreases Working Time. These effects are relatively big in size. Especially when *changes in technical requirements* are problematic, this increases the measure for Working Time by about 20%.

5.1.5 DISCRIMINATION

The category Discrimination includes unfair treatment because of certain ethnic or demographic traits and sexual harassment. A potential problem with the category Discrimination could be the presence of endogeneity. If the discrimination presents itself by impacting what kind of workers are employed in a factory or are chosen for the survey, discrimination will impact worker demographics – the control variables. In that case, including the demographics would mean including bad controls and inducing bias. Therefore, a regression without demographics is run as well. The regression output including worker demographics can be found in Table A.10 in appendix A.7.

Interestingly, hardly any evidence of Discrimination was found in the external factory assessments (see Table 5 in chapter 3.5). Furthermore, as described in chapter 3.4, there are many missing observations for certain questions that are part of the category Discrimination which is measured by using worker surveys.

No sourcing practice was found to have a significant impact on Discrimination when controlling for worker demographics. In the regression excluding worker demographics, it was found that *customer penalties for production defects* significantly increase Discrimination. If penalties for production defects are

viewed by managers as being problematic, probability of Discrimination tends to increase by 0.043 (about 16% increase compared to constant). *Replenish orders* appear to decrease Discrimination (-0.036).

5.2 FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING

FACB involves questions regarding strikes, unions and treatment of union members. In the baseline regression, *uncertain orders* and *changes in technical requirements* have a significant negative impact as they increase the measure for FACB by 0.052 and 0.044 – 17% and 14% respectively. Meanwhile, *customer lack of knowledge of Cambodia's labour law* decreases FACB (-0.054) and has, therefore, a positive impact on working conditions.

5.3 SUPPLY CHAIN CHARACTERISTICS

The regression output from the model including supply chain characteristics can be found in Table A.11 and Table A.12 in appendix A.7. A longer business relationship with the most important customer has a significant positive impact on Compensation, CHR and OSH in that it tends to decrease their measure. Compensation and CHR decrease by 0.005 and OSH by 0.007 for every additional year, which is a change of about 1% for each. The effect appears small, however, for a business relationship that is 10 years longer, it can have a considerable impact.

A longer time until payment of a delivery by the most important customer tends to decrease the Monthly Wage of workers by 51 dollars (about 17%). Surprisingly, it appears to also decrease the probability of a short-term contract by 11.0 percentage points and to decrease the measure for Working Time (-0.091 or 20%).

5.4 ROBUSTNESS

In order to validate causal inference, robustness checks are conducted. They demonstrate how the coefficient estimates change when regression specifications are altered. Ideally, regression outputs should not be too sensitive to the adding or dropping of variables. To test for robustness, two additional variables are introduced: year variables and whether a factory is directly selling its products to customers outside of Cambodia. The empirical analysis in chapter 5.1 assumes that the year in which the survey was conducted does not influence regression results. However, if the year does have an impact, the results might be biased because of underlying changes over time (i.e., new labour laws, international agreements). Thus, alternate analyses are run for the baseline regressions including year variables. These regression results can be found in Table A.13 in appendix A.9. Most regressions are robust to the addition of year variables. However, Compensation is slightly sensitive to the inclusion of year controls. *Changes in technical requirements* and *customers' lack of knowledge of Cambodia's labour law* are now both significant at the 0.05 level. A possible explanation for the sensitivity of Compensation to year controls could be that worker compensation is impacted by changes to minimum wage laws and economic circumstances. The same goes for Monthly Wage, where *customer lack of knowledge* is now significantly decreasing wages. For FACB the same regressors remain significant, however, the size of the coefficients increases slightly (within a range of 0.02). However, the results are still relatively robust, but if panel data was available over several years, additional insights on the impact of sourcing practices could be gained.

As explained in chapter 2.1 participation in the BFC assessment is mandatory for all garment factories who export their products. Certain managers state that their factory does not directly sell its products to customers abroad. In that case it can be assumed that they would theoretically not need to participate in the compliance assessment or the survey. In addition, exporting firms may face different conditions and requirements from their customers than factories only selling to customers in Cambodia. Export status is also controlled for by Tufts University when regressing compliance on sourcing practices (Brown, Dehejia, Rappaport, et al., 2016, p. 239). As a second robustness check, a variable for whether factories are directly exporting or not is added to the baseline regression (see Table A. 14 in appendix A.9). The baseline regressions are robust for the addition of this export variable.

Sourcing practices are recoded to binary variables for ease of interpretation. However, the conversion from a scale to a binary variable may result in loss of information. Thus, a robustness check without the recoding of the variable is conducted (see Table A. 15 in appendix A.9). The coefficients are about half the size of the baseline regression, since the independent variable is now a 4-scale variable and no longer binary. Notably, the impact of penalties for late delivery or production defects are somewhat confusing. When they are considered by managers to be less problematic some working conditions decrease. However, overall, the baseline regression appears to be relatively robust to the use of the sourcing practice variable as a scale variable.

6. Discussion of Results

In Table 8, the sourcing practices and their impact on each working condition category are presented.

TABLE 8. OVERVIEW OF REGRESSION RESULTS

SOURCING PRACTICE	INCREASES THE MEASURE FOR WORKING CONDITIONS:	DECREASES THE MEASURE FOR WORKING CONDITIONS:
Rush orders	Short-term contracts increase	
Uncertain orders	FACB, Compensation*	
Replenish orders		CHR, short-term contracts decrease, Discrimination
Changes in order size	Working Time, monthly wage decreases, short-term contracts increase	
Penalties for late deliveries		
Penalties for defect products	Discrimination	
Changes in technical requirements after production has started	Compensation*, CHR, OSH, Working Time, FACB, short-term contracts increase	
Customer lack of knowledge of Cambodia's labour law		Compensation*, Working Time, FACB, short-term contracts decrease
Customer requirement for safety equipment		OSH

NOTE: Summary of the results from the empirical analysis showing the negative and positive impact of sourcing practices.

* only significant for Compensation at the 0.1 level.

The results reveal that several sourcing practices have a significant impact on working conditions. However, not all sourcing practices have the same impact and not all categories are affected. The coefficients are higher for Monthly Wage and Short-Term Contracts but the two have a different measurement scale. The other coefficients range between 0.024 and 0.074.

Though the impact seems rather small, its size is comparable to what is found by Tufts University using data from Vietnam (Brown, Dehejia, Rappaport, et al., 2016, p. 250).²⁴ Furthermore, when expressed in percentage of the coefficient of the constant the effect is between 5 to 20%, which is considerable.

²⁴ It is noteworthy that the research on the impact of sourcing practices on working conditions by Tufts University did not include compliance with CHR, Discrimination and Compensation (Brown, Dehejia, Rappaport, et al., 2016, p. 250). Weekly wage was regressed on certain sourcing practices.

Too many rush orders increase the probability of short-term contracts. If a factory has to produce on short notice, it is likely to hire additional workers or increase payment to incentivise workers to work faster or longer hours.

Uncertain orders from customers increase concerns related to FACB and Compensation. Uncertain orders make planning extremely difficult for factories and may induce delayed wage payments or less work opportunities. As with changes in technical requirements, uncertain orders put additional pressure on factory management that could push them to act more strictly against unions and strikes.

Changes in the size of the order have a negative impact on working conditions. They are found to increase Working Time (controlling for whether wages are sufficient without overtime) and decrease Monthly Wage, as well as increase probability of Short-Term Contracts. If order size changes, production plans need to be altered and if there is no possibility to hire additional workers and the factory agrees on the production, the existing workforce bears the burden of the extra order and increase working hours. They may especially be inclined to do so, if wages are too low without overtime. Alternatively, the factory management might hire additional workers on short-term contracts. A decrease in payment of workers could result from orders that are smaller than expected and lead to an unexpected wage loss. These findings are in line with previous research and findings by brands (see chapter 2.3).

Customer penalties for production defects increase Discrimination. These penalties may prompt supervisors to monitor workers with more rigour or hardness. This could manifest itself in the form of discrimination. It is noteworthy that this variable is only significant without controlling for worker

demographics.

Changes in technical requirements by the customer after production has begun increase concerns around working conditions for Compensation, CHR, OSH, Working Time, FACB and increase Short-Term Contracts. The finding that untimely alterations increases pressure on OSH and FACB is in line with the findings from Tufts University in Vietnam (Brown, Dehejia, Rappaport, et al., 2016, p. 239). The negative impact on Working Time is relatively straightforward and in line with theoretical arguments in previous literature. The changes put additional pressure on the factory workers and managers since they might require changes to the machine settings, production planning or training and instruction of workers. These changes require additional time and may lead to compromises with safety measurements (OSH) or prompt supervisors and managers to treat workers badly (CHR). Similarly, these changes cause costs for the factories that may lead managers not to pay the workers' wages on time (Compensation). The additional hiring of workers might be necessary or, if production planning is more difficult, added flexibility could be needed (increase in short-term contracts). If factory management is under time and price pressure, it might be less tolerant towards unions and strikes as both could be an obstacle to production plans (FACB).

Customer requirement for safety equipment decreases issues around OSH. If customers make additional or specific requirements it is likely that they place more value on safety than others. Either the additional equipment or the closer attention to safety equipment leads to a safer working environment for workers.

Customer lack of knowledge of Cambodia's labour law decreases problems around the working conditions for the categories Compensation, FACB, as well as Working Time and decreases Short-Term Contracts. This sourcing practice, thus, seems to have a positive impact on working conditions. If a manager perceives the lack of knowledge of a customer about Cambodia's labour law to be a challenge to business success and this leads to a decrease in negative reports of working conditions, this could imply different things. Firstly, it could mean that customers demand higher standards than would be required by law. Higher wages, additional benefits or shorter working hours could be a danger for business success in that they raise costs – hence why they could be perceived as a problem. It could also imply that customers demand lower standards or do not want to respect labour laws. However, if this is perceived as a challenge for business success by managers, they are themselves aware of the labour laws and want or need to respect them, which could explain why working conditions are better.

Replenishment orders decrease measures for CHR and Discrimination and, further, decrease Short-Term Contracts. This implies that replenishment orders have a positive impact on working conditions. This result is surprising since if managers perceive it to be a problem, it would be expected that the added pressure increases poor working conditions. One explanation could be that replenishment orders are less of a challenge than uncertain orders or changes in technical requirements, since the products have been produced before.

No significant impact was found for the variable *customer penalties for late delivery*. For *penalties for production defects* the only significant impact

was found for Discrimination (but only when not controlling for worker demographics). In comparison, results from Vietnam found that both have a significant impact (Brown, Dehejia, Rappaport, et al., 2016, p. 239). In the present empirical analysis, this could not be confirmed.

The selected supply chain characteristics were found to have a significant impact on several working conditions. A longer business relationship with the most important customer decreases issues around Compensation, CHR and OSH. More stable business relationships can facilitate production planning and lower pressure on factory management which appears to result in increased labour standards. Longer time until payment by the most important customer decreases the Monthly Wage of a worker, but surprisingly also decreases the probability of a Short-Term Contract, as well as Working Time. However, answer rates for this question were low which results in the sample being decreased by about one third.

Overall, the null hypothesis that sourcing practices do not impact working conditions can be rejected. Especially changes in technical requirements after production has begun, as well as changes in order size are found to have a detrimental impact. Due to missing observations in the manager surveys, only a sub-sample of the workers could be included in the research. However, as presented in chapter 3.4, the sub-sample appeared representative of total observations in terms of worker demographics and perception of working conditions. Together with findings from previous literature, this research further underlines the necessity to look at the pressure exerted through the supply chain when trying to improve working conditions.

7. Conclusion

This study explores the impact of sourcing practices on working conditions in the garment industry. Despite improvements in certain areas of labour rights, working conditions remain precarious. For some years, literature has pointed at the pressure sourcing practices put on factory management and the detrimental impact this has on workers. Using factory- and worker-level data from Cambodia by Better Work, a measure of working conditions is constructed and regressed on a set of sourcing practices. Several interesting insights can be gained from the descriptive and quantitative analysis. Using OLS while controlling for worker demographics and factory size, it is found that uncertain orders, changes in order size and changes in technical requirements after production has started lead to an increase in poor working conditions. Changes in order size is found to have a significant negative impact on monthly wages of a worker. As would be expected, customer requirement for safety equipment is found to improve working conditions in the category occupational safety and health. The probability of

short-term contracts is increased with rush orders and changes in technical requirements. Somewhat surprisingly, replenish orders and customer lack of knowledge of Cambodia's labour law imply better working conditions. Regarding supply chain characteristics, a longer business relationship to the most important customer has a positive impact on working conditions in the categories Compensation, CHR and OSH, while delayed payments appear to decrease worker wages. All in all, the findings on the negative impact of sourcing practices on working conditions are in line with previous research. Especially the case for changes in order size, fluctuating orders and changes in technical requirements could be undermined. Previous findings around the impact of penalties on late deliveries and production defects could, however, not be confirmed. Notably, not all categories were affected in the same manner or by the same sourcing practices. However, since the direction of effect is generally the same and supported by previous research, this is not a source of concern.



Apart from providing empirical evidence of a relationship long suspected in literature and observed by those in close contact with workers and factories, a unique angle of this study is the measuring of working conditions from a worker's perspective. As could be shown, working conditions as perceived by workers can in some respects differ strongly from findings of an external factory assessment.

What remains open is whether the impact of problematic sourcing practices could be alleviated through better management and planning practices of the managers in the supplying factories. Further research into the exact mechanism between the sourcing practices and their impact on working conditions is needed. However, what becomes clear is that working towards decent working conditions requires action to change the supply chain dynamics of the fast fashion industry. This will require addressing the power asymmetries and reform sourcing and purchasing practices. Buyers should be sensitised to the impact their sourcing practices have on working conditions further down the supply chain. And the way in which their sourcing can stand in stark contrast with their own code of conduct. Better production planning, forecasting, smoothing of production peaks, and clear definition of technical specifications, all in close exchange with suppliers, are one step towards lowering the pressure on supplying firms. Training of managers in production planning, forecasting and management of resources can also

be beneficial for guaranteeing a smooth business relationship and on-time deliveries. Stable orders and clear production planning allow for increased efficiency and a stable workforce. Knowledge and respect of a countries' labour laws and support of factories which work accordingly should be self-evident. Most importantly, these steps should be taken without putting additional pressure on factories. Additional costs for training, assessments or unforeseen changes should not have to be carried by suppliers alone. One possibility is a cost-sharing mechanisms like the Bangladesh Accord that requires buyers to make sure factories can comply with additional requirements (Anner, 2020, p. 342). The goal is to ensure that the burden of, for example, safety requirements are not carried by factories alone (Anner, 2020, p. 342). A collaborative effort by firms, governments or in the form of industry-wide agreements is necessary to tackle the root causes of harmful working conditions. Emphasis should also be put on raising awareness of buyers about the impact their sourcing practices have on the working conditions of garment workers. And further research should look at the impact of measures taken to alleviate the sourcing squeeze, for example, the impact of management training and steadier production planning. Furthermore, data from buyers could be included to get a better understanding of sourcing practices and how these could be adapted to lower the pressure on supplying factories.

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A. Appendix. Data and Empirical Results

A.1 INDEX OF VARIABLES

TABLE A.1 INDEX OF ALL VARIABLES USED IN THE EMPIRICAL ANALYSIS

VARIABLE	RESPONDENT	SURVEY QUESTION	POSSIBLE ANSWERS	ADDITIONAL NOTES
Sourcing practices:		What are the biggest production management problems that are obstacles to your business success?		
<i>Rush orders</i>	General Manager	Too many rush orders	1. Serious problem 2. Modest problem 3. Minor problem 4. Not a problem	Variable coded as a dummy. 0 corresponds to answers 3 and 4. 1 corresponds to answers 1 and 2.
<i>Uncertain orders</i>	General Manager	Uncertain orders from customers	1. Serious problem 2. Modest problem 3. Minor problem 4. Not a problem	Variable coded as a dummy. 0 corresponds to answers 3 and 4. 1 corresponds to answers 1 and 2.
<i>Replenish orders</i>	General Manager	Replenishment orders	1. Serious problem 2. Modest problem 3. Minor problem 4. Not a problem	Variable coded as a dummy. 0 corresponds to answers 3 and 4. 1 corresponds to answers 1 and 2.
<i>Changes in order size</i>	General Manager	Change in the size of the order	1. Serious problem 2. Modest problem 3. Minor problem 4. Not a problem	Variable coded as a dummy. 0 corresponds to answers 3 and 4. 1 corresponds to answers 1 and 2.

VARIABLE	RESPONDENT	SURVEY QUESTION	POSSIBLE ANSWERS	ADDITIONAL NOTES
<i>Penalty for production defects</i>	General Manager	Customer penalties for production defects	1. Serious problem 2. Modest problem 3. Minor problem 4. Not a problem	Variable coded as a dummy. 0 corresponds to answers 3 and 4. 1 corresponds to answers 1 and 2.
<i>Penalty for late delivery</i>	General Manager	Customer penalties for late delivery	1. Serious problem 2. Modest problem 3. Minor problem 4. Not a problem	Variable coded as a dummy. 0 corresponds to answers 3 and 4. 1 corresponds to answers 1 and 2.
<i>Changes in technical requirements</i>	General Manager	Change in technical requirements by the customer after production has begun	1. Serious problem 2. Modest problem 3. Minor problem 4. Not a problem	Variable coded as a dummy. 0 corresponds to answers 3 and 4. 1 corresponds to answers 1 and 2.
<i>Customer's lack of knowledge of Cambodia's labour law</i>	General Manager	Customers' lack of knowledge of Cambodia's labour law	1. Serious problem 2. Modest problem 3. Minor problem 4. Not a problem	Variable coded as a dummy. 0 corresponds to answers 3 and 4. 1 corresponds to answers 1 and 2.
<i>Gender</i>	Worker	Are you female or male?	1. Female 2. Male	Variable coded as a dummy. 0 corresponds to "Male" and 1 to "Female".
<i>Married</i>	Worker	What is your marital status?	1. Single 2. Divorced, widowed, or separated 3. Married or in a domestic partnership	Variable coded as a dummy. 0 corresponds to answers 1 and 2. 1 corresponds to answer 3.
<i>Education</i>	Worker	What is your highest level of education?	1. No formal education 2. Kindergarten 3. Primary (6 years) 4. Lower secondary (3 years) 5. Upper secondary (3 years) 6. University	

VARIABLE	RESPONDENT	SURVEY QUESTION	POSSIBLE ANSWERS	ADDITIONAL NOTES
<i>Type of job</i>	Worker	What is your job in the factory?	1. Stitching 2. Cutting 3. Screen Printing or Washing 4. Cementing or Gluing 5. Lasting 6. Cleaning 7. Packing 8. Quality Control 9. Supervisor 10. Team Leader, Line Leader, or Line Chief 11. Other	
<i>Years of work in factory</i>	Worker	How long have you been working in this factory?	1. 0-3 months 2. 4-6 months 3. 7-9 months 4. 10-12 months 5. 13-18 months 6. 19-23 months 7. 2 years 8. 3 years 9. 4 years 10. 5-8 years 11. 9 or more years	
<i>Number of employees</i>	Survey information		Numerical answer	
<i>Short-term contract</i>	Worker	What type of contract do you have?	1. No contract 2. Probationary contract 3. 3 month contract or shorter 4. 4 to 6 month contract 5. 7 to 12 month contract 6. Fixed duration contract (longer than 12 months) 7. Unlimited duration contract	Variable coded as a dummy. 0 corresponds to answers 1, 2, 6 and 7. 1 corresponds to answers 3, 4 and 5.

VARIABLE	RESPONDENT	SURVEY QUESTION	POSSIBLE ANSWERS	ADDITIONAL NOTES
Monthly payment <i>Calculated from:</i>				Not calculated if no regular payment.
	Worker	How much money did you receive the last time you were paid?	Numerical answer	Corrections according to Better Work and Tufts University.
	Worker	How often are you paid	1. Every week 2. Every other week 3. Twice a month 4. Every month 5. Every other month 6. I do not get paid regularly	Corrections according to Better Work and Tufts University.
<i>Wage sufficient without overtime</i>	Worker	To have sufficient income for basic necessities, workers like me have to work overtime on a regular basis.	1. Strongly Disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly Agree	
<i>Customer requirements for safety equipment</i>	General Manager	Customer requirements for safety equipment	1. Serious problem 2. Modest problem 3. Minor problem 4. Not a problem	Variable coded as a dummy. 0 corresponds to answers 3 and 4. 1 corresponds to answers 1 and 2.
<i>Year</i>	Survey information		2015 2016 2017 2018	
<i>Customer 1 – length of business relationship</i>	General Manager	How many years have you had a business relationship with this customer? If less than one year, enter 1 year.	Numerical answer	There are entries above 250'000 which were dropped. Highest value is then 20 years.

VARIABLE	RESPONDENT	SURVEY QUESTION	POSSIBLE ANSWERS	ADDITIONAL NOTES
<i>Customer 1 – payment > 30 days</i>	General Manager	How much time elapses between your delivery of an order to this customer and the receipt of payment?	1. In advance 2. Day of delivery 3. 7-14 days 4. 15-29 days 5. 30 -59 days 6. 60 - 89 days 7. 90 or more days	Variable coded as a dummy. 0 corresponds to answers 1 to 4. 1 corresponds to answers 5 to 7.
<i>Customer 1 – type of business relationship</i>	General Manager	How would you characterize the business relationship with this customer? Is your factory a...	1. Preferred supplier 2. Contractor 3. Sub-contractor	
<i>Export direct</i>	General Manager	Does your factory currently sell its products or services directly to customers or vendors outside Cambodia?	1. Yes 2. No	Variable coded as a dummy. 0 is “No” and 1 is “Yes”.

NOTE: Index of all variables that are used in the empirical analysis. Variables used to build the working condition index are not included (see appendix A.2 for details). Compliance measures from external factory assessment not included.

A.2 WORKING CONDITION CATEGORIES AND RESPECTIVE QUESTIONS

TABLE A.2 ATTRIBUTION OF SURVEY QUESTIONS TO WORKING CONDITION CATEGORIES

DISCRIMINATION	FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING	COMPENSATION	CONTRACTS AND HUMAN RESOURCES	OCCUPATIONAL SAFETY AND HEALTH	WORKING TIME
C8: You reported that you were treated unfairly in the last six months. Which of the following were reasons for that treatment?	D34: What complaints have led to strikes in this factory?	D10: How often are you paid?	C1: If you had a question about how your pay was calculated, how comfortable would you be asking for help from the human resources department?	C55: My factory does not have an OSH committee.	D32: Are you concerned about too much overtime work?
C81: Job performance	D341: No strikes since I've started.	D104/105/106: Not paid every two weeks (mandatory according to Cambodian law to pay twice per month?)	C2: If you were having trouble with a work task, how comfortable would you be asking for help from your supervisors?	C9: Which types of training have you received in the last six months?	D33: If you refuse to work overtime, how likely is it that you will be terminated, or that your contract will not be renewed?
C82: Skin colour or ethnicity	D343: Removal of a union leader or activists	D11: How concerned are you about wages being too low?	C3: If you were having trouble getting a problem solved at work, how comfortable would you be asking for help from the trade union?	C97: Chemical handling (including how to safety work with glue)	D34: What complaints have led to strikes in this factory?
C83: Religion	D35: If you join or support a union, how likely is it that you will be terminated, or that your contract will not be renewed?	D12: Do you trust the factory to pay the productivity bonus that you have earned?	C4: If you were having trouble getting a problem solved at work, how comfortable would you be talking to the PICC?	C99: Other health and safety	D344: Too much work on Sundays
C84: Gender	C9: Which types of training have you received in the last six months?	D123: I don't have the opportunity to earn a productivity bonus.	C5: If you were having trouble getting a problem solved at work, how comfortable would you be talking to the OSH committee?	C910: Safe machine operation	D349: Too much overtime

DISCRIMINATION	FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING	COMPENSATION	CONTRACTS AND HUMAN RESOURCES	OCCUPATIONAL SAFETY AND HEALTH	WORKING TIME
C85: Age	C96: Collective bargaining agreement	D34: What complaints have led to strikes in this factory?	C9: Which types of training have you received i the last six months? C91: None	C10: Which types of training did you receive when you first started working in this factory?	C10: Which types of training did you receive when you first started working in this factory?
C86: Family obligations or pregnancy	WAGE10: If workers like me want higher wages, the union can negotiate with the management of our factory and has a good chance to succeed.	D3410: Deductions from pay	C6: In the last six months, which of the following have happened? C61: You have been unhappy with the way a complaint to a supervisor or manager was handled.	C104: Health and safety	C1010: Overtime regulations
C87: Union activities or political views	C3: If you were having trouble getting a problem solved at work, how comfortable would you be asking for help from the trade union? C35: My factory does not have a trade union.	D3411: Low wages	C10: Which types of training did you receive when you first started working in this factory? C101: None	C105: Safe machine operation	
C88: Response to sexual advances from your supervisor		WAGE11: A worker like me can directly approach a factory manager and ask to get paid more. This doesn't always work, but sometimes that;s the way to get a pay increase.	C12: Have you seen or experienced any of the following behaviour from a supervisor or manager in this factory? Receiving a warning letter	D34: What complaints have led to strikes in this factory?	
C89: How often you complain or talk back to your supervisor		WAGE12: To get higher wages, workers like me have to wait for a minimum wage increase.	C14: How often do you have trouble understanding instructions from your supervisor?	D345: Chemical smells	

DISCRIMINATION	FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING	COMPENSATION	CONTRACTS AND HUMAN RESOURCES	OCCUPATIONAL SAFETY AND HEALTH	WORKING TIME
C6: In the last six months, which of the following have happened?		WAGE14: To have sufficient income for basic necessities, workers like me have to work overtime on a regular basis.	C15: Does your supervisor speak the same language as you?	D346: Dangerous equipment	
C62: A supervisor or manager treated you differently because of your gender.		C10: Which types of training did you receive when you first started working in this factory?	C25: There is clear and fair system for reporting sexual harassment in this factory.	D347: Polluted air	
C63: A supervisor or manager said hostile or derogatory things about women in general or the female workers in this factory.		C106: Pay procedures	E1: What type of contract do you have?	D348: Excessive heat in the factory	
C7: In the last six months, which of the following have happened?		C107: Benefits	E11: No contract	F16: How concerned are you with excessive heat in the factory?	
C71: You faced unfair obstacles to receiving training.		C108: Fines	E12: Probationary contract	F18: Do you come to work when you are sick?	
C72: You faced unfair obstacles to promotion.			E13: Short term contract (<12 months)	F19: In the last six months, how often have you been injured because of your work?	
C73: You were unfairly assigned to a particular job.			E2: How well do you understand the language your contract is written in?	F20: Do you have all the training you need to do your job safely?	

DISCRIMINATION	FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING	COMPENSATION	CONTRACTS AND HUMAN RESOURCES	OCCUPATIONAL SAFETY AND HEALTH	WORKING TIME
C20: Is there flirting or joking in this factory that makes you uncomfortable?			E4: When does this work agreement or contract expire? It has already expired.	F21: Do you have all the equipment (e.g. earplugs, gloves that fit) that you need to do your job safely?	
C21: Do any of the supervisors or managers ever talk to you or touch you in a way that makes you uncomfortable?			N10: "Imagine that a supervisor in this factory has said that he can make things very difficult for a female worker by treating her badly unless she has sex with him."		
C22: Do any of the supervisors or managers ever talk to you or touch you in a sexual way?			G1: It would be extremely risky for her to make a formal complaint against him.	F231-235: Not using equipment for some reasons	
C23: Do any of the supervisors or managers ever try to have a sexual relationship with you?			G2: There is a very good chance she would be taken seriously if she made a formal complaint.		
C24: Have any of the supervisors or managers offered you any of the following benefits in exchange for sexual favours or a sexual relationship? Please select all that apply			G3: There would be very serious consequences for him if she made a formal complaint.		
C241: Better treatment or pay			I1: It is all right for workers to be critical of their supervisors.		

DISCRIMINATION	FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING	COMPENSATION	CONTRACTS AND HUMAN RESOURCES	OCCUPATIONAL SAFETY AND HEALTH	WORKING TIME
C242: Promotion			I3: In this factory, workers are expected to obey their supervisor without question, even when they disagree.		
C243: Ending your probationary period			C12: Have you seen or experienced any of the following behaviour from a supervisor or manager in this factory?		
C244: Hiring you			C121: Insulting language		
C245: Reporting that you met your production quota			C122: Material or shoes thrown at or used to hit workers		
H1: In this factory, it's common for supervisors to make sexual comments or try to sexually touch workers.			C125: Other inappropriate behaviour, like cutting a worker's hair or locking a worker in a closet		
H2: In this factory, it's seen as acceptable for supervisors to make sexual comments or to try to sexually touch workers.			C13: How often does your supervisor yell at workers to make them work faster or for making mistakes?		
H3: In this factory, when supervisors make sexual advances toward workers, it's seen as the worker's fault.			C16: How often does your supervisor follow the rules of the factory?		
			C17: How often does your supervisor correct workers who have made mistakes with fairness and respect?		

NOTE: Each working condition category is built out of questions from the worker's survey. These are allocated according to the guidelines from the CAT by Better Work.

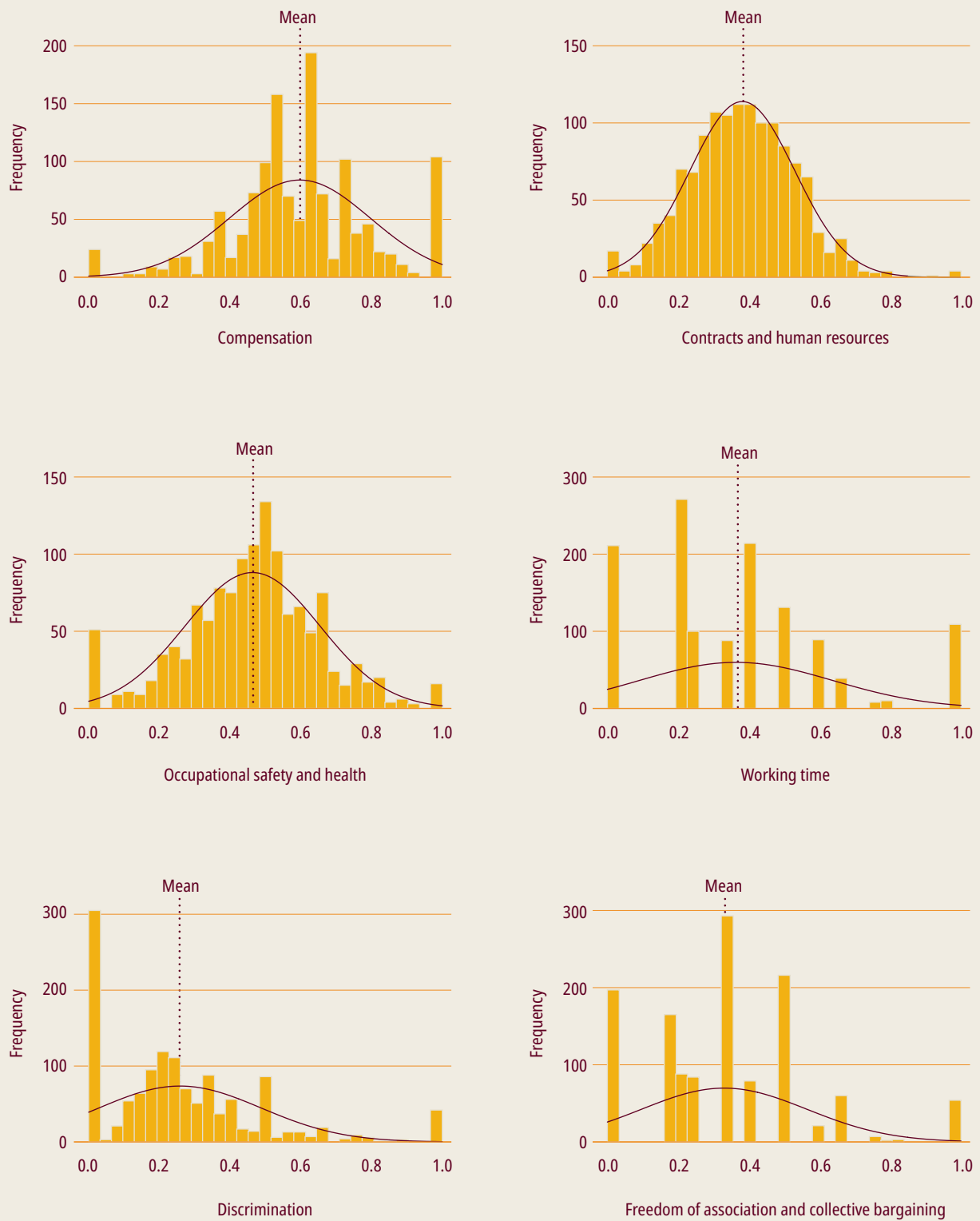
A.3 WORKER DEMOGRAPHICS

TABLE A.3 DESCRIPTIVE STATISTICS – WORKER DEMOGRAPHICS

	FREQUENCY	PERCENT
Gender		
Female	1'085	83.91
Male	208	16.09
<i>Total</i>	<i>1'293</i>	<i>100.00</i>
Education		
No formal education	75	6.22
Kindergarten	28	2.32
Primary (6 years)	541	44.90
Lower secondary (3 years)	358	29.71
Upper secondary (3 years)	164	13.61
University	39	3.24
<i>Total</i>	<i>1'205</i>	<i>100.00</i>
Marital Status		
Married	568	47.89
Not married	618	52.11
<i>Total</i>	<i>1'186</i>	<i>100.00</i>
Years of Work in Factory		
1-3 months	125	10.18
4-6 months	101	8.22
7-9 months	97	7.90
10-12 months	107	8.71
13-18 months	55	4.48
19-23 months	36	2.93
2 years	211	17.18
3 years	171	13.93
4 years	125	10.18
5-8 years	145	11.81
9 or more years	55	4.48
<i>Total</i>	<i>1'228</i>	<i>100.00</i>

NOTE: Descriptive statistics of the worker demographics controlled for in the empirical analysis. Only the observations used in the empirical analysis (that can be matched to sourcing practices) are presented.

FIGURE A.1 FREQUENCY DISTRIBUTION OF WORKING CONDITION CATEGORIES



NOTE: Frequency distribution of each working condition category. Displaying the mean value and normal distribution.

A.4 SOURCING PRACTICES AND SUPPLY CHAIN CHARACTERISTICS

TABLE A.4 SOURCING PRACTICES

	PERCENTAGE				SUMMARY STATISTICS		
	Serious	Moderate	Minor	Not a problem	Obs.	Mean	Std. Dev.
Rush Orders	21.52	31.75	33.27	13.46	1'575	0.53	0.50
Uncertain Orders	30.41	24.49	26.42	18.69	1'605	0.55	0.50
Replenish Orders	15.59	22.80	33.38	28.23	1'456	0.38	0.49
Change in Order Size	20.90	33.14	36.65	9.31	1'536	0.54	0.50
Penalties for Late Delivery	23.21	22.77	31.82	22.20	1'581	0.46	0.50
Penalties for Production Defect	13.48	30.73	33.85	21.94	1'536	0.44	0.50
Change in Technical Requirements	10.79	27.05	40.00	22.16	1'575	0.38	0.49
Customers' Lack of Knowledge of Cambodia's Labour Law	15.89	19.11	35.18	29.82	1'586	0.35	0.48
Customer Requirements for Safety Equipment	10.50	24.24	37.52	27.74	1'543	0.35	0.48

NOTE: Descriptive statistics of sourcing practices. Summary statistics on the right side are based on recoded variables as dummies. 1 for Serious or Moderate Problem and 0 for Minor and Not a Problem. All non-missing observations.



TABLE A.5 SUPPLY CHAIN CHARACTERISTICS

	FREQUENCY	PERCENTAGE
Relation Length		
1 year	179	18.21
2 years	161	16.38
3 years	77	7.83
4 years	111	11.29
5 years	74	7.53
6 years	91	9.26
7 years	68	6.92
8 years	6	0.61
9 years	29	2.95
10 years	63	6.41
15 years	94	9.56
20 years	30	3.05
<i>Total</i>	983	100
Time Between Delivery and Payment		
In advance	61	6.86
Day of delivery	100	11.25
7-14 days	143	16.09
15-29 days	35	3.94
30 -59 days	362	40.72
60 - 89 days	94	10.57
90 or more days	94	10.57
<i>Total</i>	889	100
Direct Export		
Yes	897	68.21
No	418	31.79
<i>Total</i>	1'315	100

NOTE: Descriptive statistics of supply chain characteristics from business relationship to most important customer. Only observations used in the empirical analysis.

A.5 ANALYSIS OF MISSING OBSERVATIONS

TABLE A.6 MISSING OBSERVATIONS

	MISSING	TOTAL	PERCENT MISSING
General Manager Survey	1'344	3'097	43.40
Problem Rush Order	1'522	3'097	49.14
Problem Uncertain Order	1'492	3'097	48.18
Problem Replenish Order	1'641	3'097	52.99
Problem Change Order Size	1'561	3'097	50.40
Problem Penalty Late Delivery	1'516	3'097	48.95
Problem Penalty Production Defect	1'561	3'097	50.40
Problem Change Technical Requirements	1'522	3'097	49.14
Problem Customer Lack of Knowledge of Cambodia's Labour Law	1'511	3'097	48.79
Gender	73	3'097	2.36
Marital Status	407	3'097	13.14
Education	327	3'097	10.56
Years Worked in Factory	254	3'097	8.20
Compensation	121	3'097	3.91
CHR	60	3'097	1.94
OSH	101	3'097	3.26
Working Time	220	3'097	7.10
Discrimination	190	3'097	6.13
FACB	190	3'097	6.13
<i>Total Observations Not-Used in Regressions</i>	<i>1'738</i>		<i>56.93</i>

NOTE: Count and percentage of missing observations across the most important variables. Number of employees has no missing observations. Monthly Payment and Short-term Contract, as well as supply chain characteristics are not included, as these are used for in additional analyses.

TABLE A.7 WORKING CONDITION CATEGORIES - SAMPLE AND POPULATION

	SAMPLE			POPULATION		
	Count	Mean	Std. Dev.	Count	Mean	Std. Dev.
Compensation	1'304	0.597	0.200	2'976	0.598	0.203
CHR	1'313	0.382	0.148	3'037	0.385	0.155
OSH	1'306	0.463	0.191	2'996	0.465	0.199
Working Time	1'270	0.364	0.274	2'877	0.369	0.275
Discrimination	1'315	0.258	0.230	2'907	0.257	0.222
FACB	1'269	0.330	0.234	2'907	0.333	0.240

NOTE: Measure of working condition categories for the Sample and the Population.

TABLE A.8 WORKER DEMOGRAPHICS - SAMPLE AND POPULATION

	SAMPLE		POPULATION	
	Frequency	Percent	Frequency	Percent
Gender				
Female	1'085	83.91	2'500	82.67
Male	208	16.09	524	17.33
Total	1'293	100	3'024	100
Education				
No formal education	75	6.22	182	6.57
Kindergarten	28	2.32	75	2.71
Primary (6 years)	541	44.90	1'311	47.33
Lower secondary (3 years)	358	29.71	772	27.87
Upper secondary (3 years)	164	13.61	355	12.82
University	39	3.24	75	2.71
Total	1'205	100	2'770	100
Marital Status				
Married	568	47.89	1'268	47.14
Not married	618	52.11	1'422	52.86
Total	1'186	100	2'690	100
Years of Work in Factory				
1-3 months	125	10.18	231	8.13
4-6 months	101	8.22	222	7.81
7-9 months	97	7.90	190	6.68
10-12 months	107	8.71	277	9.74
13-18 months	55	4.48	155	5.45
19-23 months	36	2.93	71	2.50
2 years	211	17.18	596	20.96
3 years	171	13.93	383	13.47
4 years	125	10.18	274	9.64
5-8 years	145	11.81	316	11.12
9 or more years	55	4.48	128	4.50
Total	1'228	100	2'843	100

NOTE: Worker demographics for the Sample and the Population.

A.6 WHITE'S TEST FOR HOMOSCEDASTICITY**TABLE A.9 WHITE'S TEST FOR HOMOSCEDASTICITY****COMPENSATION**

White's test for Ho: homoscedasticity
 against Ha: unrestricted heteroscedasticity
 $\chi^2(429) = 455.59$
 Prob > $\chi^2 = 0.1808$

WORKING TIME

White's test for Ho: homoscedasticity
 against Ha: unrestricted heteroscedasticity
 $\chi^2(429) = 337.60$
 Prob > $\chi^2 = 0.1824$

MONTHLY PAYMENT

White's test for Ho: homoscedasticity
 against Ha: unrestricted heteroscedasticity
 $\chi^2(429) = 275.02$
 Prob > $\chi^2 = 0.6690$

**DISCRIMINATION EXCL. WORKER
DEMOGRAPHICS**

White's test for Ho: homoscedasticity
 against Ha: unrestricted heteroscedasticity
 $\chi^2(429) = 57.46$
 Prob > $\chi^2 = 0.0839$

CHR

White's test for Ho: homoscedasticity
 against Ha: unrestricted heteroscedasticity
 $\chi^2(429) = 340.93$
 Prob > $\chi^2 = 0.0212$

**DISCRIMINATION INCL. WORKER
DEMOGRAPHICS**

White's test for Ho: homoscedasticity
 against Ha: unrestricted heteroscedasticity
 $\chi^2(429) = 271.62$
 Prob > $\chi^2 = 0.7343$

OSH

White's test for Ho: homoscedasticity
 against Ha: unrestricted heteroscedasticity
 $\chi^2(429) = 332.88$
 Prob > $\chi^2 = 0.1485$

FACB

White's test for Ho: homoscedasticity
 against Ha: unrestricted heteroscedasticity
 $\chi^2(429) = 311.79$
 Prob > $\chi^2 = 0.1706$

NOTE: White's test for homoscedasticity.

A.7 REGRESSION OUTPUT – INCLUDING WORKER DEMOGRAPHICS DISCRIMINATION

TABLE A.10 ESTIMATES OF THE EFFECT OF SOURCING PRACTICES ON WORKING CONDITIONS - INCLUDING WORKER DEMOGRAPHICS DISCRIMINATION

	(1) COMPENSATION	(2) MONTHLY WAGE	(3) CHR	(4) SHORT-TERM CONTRACT	(5) OSH	(6) WORKING TIME	(7) DISCRIMINATION	(8) FACB
Rush Orders	-.015 (.015)	18.584 (17.702)	-.02* (.011)	.562*** (.114)	-.006 (.015)	.008 (.022)	-.014 (.016)	-.011 (.017)
Uncertain Orders	.028* (.015)	-26.514 (19.017)	0 (.011)	-.088 (.115)	.014 (.014)	-.033 (.023)	.008 (.016)	.052*** (.017)
Replenish Orders	-.01 (.014)	3.026 (18.642)	-.024** (.01)	-.274** (.108)	-.021 (.014)	-.019 (.02)	-.036** (.015)	-.027* (.016)
Changes in Order Size	-.018 (.016)	-49.859** (19.927)	.019* (.012)	.330*** (.118)	-.009 (.015)	.054** (.023)	.007 (.017)	-.015 (.018)
Penalties for Late Delivery	-.011 (.018)	19.2 (25.967)	.02 (.013)	-.016 (.135)	-.006 (.017)	.03 (.026)	-.021 (.019)	0 (.02)
Penalties for Production Defects	.015 (.02)	-21.734 (30.223)	-.002 (.014)	-.115 (.143)	.013 (.018)	-.042 (.028)	.043** (.02)	.017 (.021)
Changes in Technical Requirements	.032* (.018)	22.074 (21.42)	.039*** (.013)	.362*** (.136)	.064*** (.017)	.074*** (.026)	0 (.018)	.044** (.02)
Customer Lack of Knowledge	-.028* (.017)	-31.659 (21.494)	-.02* (.012)	-.511*** (.125)	-.022 (.016)	-.065*** (.023)	-.022 (.017)	-.054*** (.018)
Customer Safety Equipment Requirements					-.033** (.016)			
Wage Sufficient without Overtime						.014 (.02)		
Constant	.548*** (.043)	251.588*** (49.794)	.414*** (.029)	.082 (.286)	.544*** (.036)	.372*** (.057)	.276*** (.012)	.313*** (.043)
Observations	910	322	1083	968	1070	888	1315	1058
R-squared	.025	.173	.035		.044	.045	.011	.041

NOTE: Standard errors are in parentheses. For Short-Term Contract estimates from a probit model are presented. For all other OLS estimates are displayed. Each regression (apart from Discrimination) further includes worker demographics and the number of employees (scaled by 1000). Column (2) has few observations, because of missing observations for Monthly Payment.

Significance level: *** $p < .01$, ** $p < .05$, * $p < .1$

A.8 SUPPLY CHAIN CHARACTERISTICS REGRESSION RESULTS

TABLE A.11 ESTIMATES OF THE EFFECT OF SUPPLY CHAIN CHARACTERISTICS ON WORKING CONDITIONS

	(1) COMPENSATION	(2) MONTHLY WAGE	(3) CHR	(4) SHORT-TERM CONTRACT	(5) OSH	(6) WORKING TIME	(7) DISCRIMINATION	(8) FACB
Customer 1 – Relationship Length	-.005** (.002)	-2.882 (2.614)	-.005*** (.001)	-.015 (.016)	-.007*** (.002)	0.00 (.003)	.001 (.002)	-.004 (.002)
Customer 1 – Payment > 30 Days	-.011 (.021)	-50.775* (28.919)	-.021 (.016)	-.371** (.172)	-.016 (.019)	-.091*** (.028)	-.005 (.023)	-.010 (.024)
Preferred Supplier								
Contractor	.038* (.023)	-9.349 (31.293)	.043** (.017)	.512*** (.19)	.109*** (.02)	.113*** (.031)	.052** (.025)	.077*** (.026)
Sub-contractor	-.016 (.027)	-26.971 (39.224)	-.022 (.02)	-.073 (.21)	.03 (.025)	-.048 (.037)	-.009 (.03)	.07** (.031)
Constant	.567*** (.059)	305.404*** (72.278)	.434*** (.04)	.434 (.412)	.518*** (.048)	.427*** (.072)	.28*** (.027)	.344*** (.061)
Observations	550	226	647	585	647	634	754	638
R-squared	.037	.127	.051		.085	.089	.014	.060

NOTE: Impact of the business relationship with the most important customer on measure of working conditions. Standard errors are in parentheses. For Short-Term Contract estimates from a probit model. For all other OLS estimates are displayed. Each regression (apart from Discrimination) further includes worker demographic and the number of employees (scaled by 1000). Column (2) has few observations, because of missing observations for Monthly Payment.

Significance level: *** $p < .01$, ** $p < .05$, * $p < .1$

TABLE A.12 MARGINAL ESTIMATES OF THE EFFECT OF SUPPLY CHAIN CHARACTERISTICS ON SHORT-TERM CONTRACTS

	MARGINAL EFFECT	
Relationship Length	-0.004	(0.005)
Payment > 30 Days	-0.110**	(0.050)
Preferred Supplier		
Contractor	0.136**	(0.045)
Sub-contractor	-0.023	(0.068)

NOTE: Standard errors are in parentheses. Marginal effects from a probit model. Regression further includes worker demographics and the number of employees (scaled by 1000).

Significance level: *** $p < .01$, ** $p < .05$, * $p < .1$



A.9 ROBUSTNESS CHECK

TABLE A.13 REGRESSION OUTPUT - ROBUSTNESS YEAR

	(1) COMPENSATION	(2) MONTHLY WAGE	(3) CHR	(4) SHORT-TERM CONTRACT	(5) OSH	(6) WORKING TIME	(7) DISCRIMINATION	(8) FACB
Rush Orders	-.024 (.016)	11.254 (18.624)	-.022* (.012)	.56*** (.117)	-.01 (.015)	.012 (.022)	-.012 (.017)	-.022 (.018)
Uncertain Orders	.026* (.015)	-26.82 (18.921)	-.001 (.011)	-.119 (.117)	.013 (.015)	-.031 (.023)	.006 (.016)	.048*** (.017)
Replenish Orders	-.025 (.016)	-16.168 (21.496)	-.029** (.012)	-.351*** (.119)	-.025 (.016)	-.013 (.023)	-.04** (.017)	-.045** (.018)
Changes in Order Size	-.018 (.016)	-47.25** (20.104)	.02* (.012)	.358*** (.119)	-.01 (.015)	.056** (.023)	.012 (.017)	-.016 (.018)
Penalties for Late Delivery	-.006 (.019)	3.687 (26.817)	.02 (.014)	-.025 (.139)	-.001 (.017)	.025 (.027)	-.022 (.02)	.012 (.021)
Penalties for Production Defects	.017 (.02)	14.902 (32.909)	.004 (.014)	-.029 (.147)	.011 (.019)	-.04 (.029)	.046** (.02)	.014 (.022)
Changes in Technical Requirements	.046** (.019)	17.968 (22.306)	.036*** (.014)	.323** (.143)	.07*** (.018)	.069** (.027)	-.001 (.02)	.061*** (.021)
Customer Lack of Knowledge	-.037** (.018)	-53.789** (24.233)	-.026** (.012)	-.591*** (.131)	-.023 (.016)	-.065*** (.025)	-.026 (.017)	-.061*** (.019)
2015bn								
2016	-.014 (.041)	26.752 (38.937)	-.06** (.03)	-.156 (.311)	-.046 (.039)	.061 (.059)	.08* (.047)	-.091** (.046)
2017	-.049 (.044)	-21.241 (43.171)	-.062* (.033)	-.292 (.333)	-.049 (.042)	.062 (.063)	.059 (.051)	-.119** (.05)

	(1) COMPENSATION	(2) MONTHLY WAGE	(3) CHR	(4) SHORT-TERM CONTRACT	(5) OSH	(6) WORKING TIME	(7) DISCRIMINATION	(8) FACB
2018	-.055 (.047)	49.06 (47.07)	-.018 (.034)	.232 (.35)	-.056 (.044)	.063 (.065)	.076 (.053)	-.129** (.052)
Customer Safety Equipment Requirements					-.033** (.016)			
Wage Sufficient without Overtime						.015 (.02)		
Constant	.593*** (.061)	263.748*** (65.61)	.47*** (.043)	.264 (.431)	.594*** (.054)	.309*** (.083)	.205*** (.05)	.425*** (.065)
Observations	910	322	1083	968	1070	888	1315	1058
R-squared	.033	.196	.046	.z	.045	.047	.014	.048

NOTE: Robustness check: baseline regression including year of survey. Standard errors are in parentheses. For Short-Term Contract estimates from a probit model. For all other OLS estimates are displayed. Each regression (excluding Discrimination) further includes worker demographic and the number of employees (scaled by 1000). Column (2) has few observations, because of missing observations for Monthly Payment.

Significance level: *** $p < .01$, ** $p < .05$, * $p < .1$

TABLE A.14 REGRESSION OUTPUT - ROBUSTNESS EXPORT STATUS

	(1) COMPENSATION	(2) MONTHLY WAGE	(3) CHR	(4) SHORT-TERM CONTRACT	(5) OSH	(6) WORKING TIME	(7) DISCRIMINATION	(8) FACB
Rush Orders	-.015 (.016)	17.144 (17.896)	-.02* (.011)	.586*** (.114)	-.004 (.015)	.012 (.022)	-.011 (.016)	-.01 (.017)
Uncertain Orders	.028* (.015)	-26.354 (19.041)	0 (.011)	-.091 (.116)	.014 (.014)	-.034 (.023)	.007 (.016)	.052*** (.017)
Replenish Orders	-.011 (.014)	3.875 (18.72)	-.024** (.011)	-.302*** (.109)	-.024* (.014)	-.023 (.021)	-.039** (.015)	-.028* (.016)
Changes in Order Size	-.018 (.016)	-50.841** (20.021)	.02* (.012)	.361*** (.12)	-.006 (.015)	.059*** (.023)	.011 (.017)	-.014 (.018)
Penalties for Late Delivery	-.01 (.019)	17.724 (26.121)	.02 (.014)	.035 (.137)	-.001 (.017)	.039 (.027)	-.015 (.02)	.001 (.021)
Penalties for Production Defects	.013 (.021)	-17.154 (31.269)	-.003 (.015)	-.191 (.149)	.006 (.02)	-.056* (.03)	.034 (.021)	.015 (.023)
Changes in Technical Requirements	.033* (.018)	19.724 (21.823)	.039*** (.013)	.367*** (.136)	.065*** (.017)	.075*** (.026)	0 (.018)	.044** (.02)
Customer Lack of Knowledge	-.027 (.017)	-32.637 (21.585)	-.019 (.012)	-.475*** (.127)	-.018 (.016)	-.058** (.024)	-.016 (.017)	-.053*** (.019)
Export direct	.003 (.016)	-11.344 (19.531)	.002 (.011)	.193* (.113)	.016 (.014)	.031 (.021)	.021 (.016)	.005 (.017)
Customer Safety Equipment Requirements					-.032** (.016)			
Wage Sufficient without Overtime						.013 (.02)		
Constant	.546*** (.044)	256.097*** (50.452)	.412*** (.03)	-.061 (.299)	.532*** (.038)	.349*** (.059)	.256*** (.019)	.31*** (.045)
Observations	910	322	1083	968	1070	888	1315	1058
R-squared	.025	.174	.035		.045	.048	.012	.041

NOTE: Robustness check: baseline regression including whether a factory is selling its products directly to customers outside of Cambodia. Standard errors are in parentheses. For Short-Term Contract estimates from a probit model. For all other OLS estimates are displayed. Each regression (excluding Discrimination) further includes worker demographic and the number of employees (scaled by 1000). Column (2) has few observations, because of missing observations for Monthly Payment.

Significance level: *** $p < .01$, ** $p < .05$, * $p < .1$

TABLE A.15 REGRESSION OUTPUT – ROBUSTNESS CODING SOURCING PRACTICES

	(1) COMPENSATION	(2) MONTHLY WAGE	(3) CHR	(4) SHORT-TERM CONTRACT	(5) OSH	(6) WORKING TIME	(7) DISCRIMINATION	(8) FACB
Rush Orders	.009 (.011)	-17.723 (12.595)	.006 (.008)	-.247*** (.078)	.011 (.011)	.002 (.015)	-.006 (.011)	-.004 (.012)
Uncertain Orders	-.006 (.008)	22.79** (9.682)	-.001 (.006)	-.013 (.055)	-.003 (.007)	.013 (.011)	.002 (.008)	-.004 (.008)
Replenish Orders	.008 (.007)	4.304 (10.001)	.009 (.005)	.182*** (.054)	.014** (.007)	.012 (.01)	.017** (.008)	.022*** (.008)
Changes in Order Size	-.004 (.01)	21.828* (11.826)	-.015** (.007)	-.216*** (.071)	-.009 (.009)	-.032** (.014)	-.004 (.01)	-.02* (.011)
Penalties for Late Delivery	.024** (.012)	8.2 (16.838)	-.003 (.009)	-.178** (.087)	-.007 (.011)	-.011 (.017)	.024* (.012)	.021 (.013)
Penalties for Production Defects	-.002 (.012)	-16.558 (17.583)	-.003 (.009)	.191** (.089)	.004 (.011)	.037** (.017)	-.028** (.013)	-.006 (.013)
Changes in Technical Requirements	-.038*** (.011)	.341 (13.277)	-.023*** (.008)	.048 (.079)	-.03*** (.01)	-.038** (.016)	-.005 (.011)	-.053*** (.012)
Customer Lack of Knowledge	.008 (.008)	2.132 (10.699)	.016*** (.006)	.068 (.064)	.011 (.008)	.021* (.012)	.007 (.009)	.037*** (.009)
Customer Safety Equipment Requirements					.006 (.008)			
Wage Sufficient without Overtime						.013 (.02)		
Constant	.564*** (.048)	175.613*** (59.352)	.461*** (.033)	.412 (.335)	.554*** (.043)	.357*** (.066)	.249*** (.028)	.36*** (.05)
Observations	910	322	1083	968	1070	888	1315	1058
R-squared	.035	.168	.038		.04	.037	.01	.05

NOTE: Robustness check: baseline regression with sourcing practices as a scale variable. 1 serious problem, 2 modest problem 3 minor problem 4 not a problem. Standard errors are in parentheses. For Short-Term Contract estimates from a probit model. For all other OLS estimates are displayed. Each regression (excluding Discrimination) further includes worker demographic and the number of employees (scaled by 1000). Column (2) has few observations, because of missing observations for Monthly Payment.

Significance level: *** $p < .01$, ** $p < .05$, * $p < .1$

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