Exploring the Relationship Between How Companies Treat Their Domestic Workforce and the

Treatment of Their Supplier Factory Workers

An Undergraduate Thesis

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by

Kenneth D. Weitzman

There exist three bodies of literature examining worker treatment and productivity, multinational supply chains, and corporate social responsibility (CSR). These three bodies are connected to explore the relationship between how multinational firms in the apparel industry treat their domestic workers and the working conditions in their supplier factories. The author created a unique data set combining factory audits from the ILO's and the IFC's Better Work Program and buyer characteristic data collected by the author. Through regression analysis, this thesis finds that there is a relationship between the worker treatment methods used by firms for domestic workers and the compliance rates in their supplier factories. Additionally, there is evidence that the techniques firms use to signal to the public that they have good factories does not indicate better working conditions.

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<u>Acknowledgements</u>

Finally, thank you to my parents and brother. Your endless support since the day I was born shaped me into the person I am today. I cannot express in words the gratitude I feel for the opportunities you have given me. I love you.

<u>Acronyms Used</u>

California Transparency in Supply Chains Act of 2010 (CTSCA)

Corporate Social Responsibility (CSR)

Fair Labor Association (FLA)

Global Framework Agreement (GFA).

High Performance Workplace System (HPWS)

Human Resources (HR)

International Finance Corporation (IFC).

International Labour Organization (ILO)

Non-Governmental Organization (NGO)

Ordinary Least Squares (OLS)

Sustainable Apparel Coalition (SAC)

Chapter I: Introduction

Many firms claim that they treat their employees well. However, evidence suggests that that there is considerable cross-firm variation in working conditions. Additionally, while most multinational firms would like to say that the factory workers in developing countries who make their products are treated humanely, a history of building collapses, reported sexual and physical abuse, and human trafficking illustrate that this is not always the case.

This study examines the link between firm treatment of domestic workers and the treatment of developing country factory workers in the apparel industry. Data was collected regarding factory compliance rates and company characteristics and then analyzed using ordinary least squares (OLS) linear regressions. The regression outputs, combined with knowledge gained from an examination of the existing literature, provided the basis for five key findings. Firms are able to affect compliance levels in their supplier factories despite the existence of nontransparent complex multinational supply chains in the apparel industry. Furthermore, the managerial systems of worker treatment developed by companies extend to both their domestic and foreign workers. The data show that if a firm treats their domestic workers well, their foreign factories are more compliant with International Labor Organization (ILO) standards.

Firms use a variety of methods to signal to the public that they have good working conditions in their factories including disclosing the location of their supplier factories and publishing a corporate social responsibility policy. However, while the factories would like the public to believe that these signals are correlated with better working conditions, the data show that this is not the case. There is no evidence that these signals have a positive impact on working conditions, and in some cases they are correlated with lower levels of factory

compliance. The regression analysis uncovers other characteristics of companies that are correlated with higher social compliance. For example, large buyers[1] are correlated with more compliant factories.

Finally, this paper enters the debate surrounding the effectiveness of audits as a mechanism to improve working conditions in apparel factories. The results show that audits do improve factory compliance regarding working conditions.

Understanding the relationship between international buyers and vendors[2] is important for promoting human rights in the developing world. Despite major factory disasters resulting in mass casualties, factory owners and governments in developing countries have not been effective in enforcing legislation designed to protect workers (Westerman 2017). Therefore, the companies that contract these factories to make their products are partly responsible for providing humane working conditions. To hold companies accountable, consumers must have information regarding the factory working conditions. This thesis provides evidence to help consumers know what to look for and what to ignore when they are trying to assess the factory working conditions for any given firm.

Examining the relationship between the treatment of domestic and foreign workers creates a more transparent picture of international supply chains and adds to the general wealth of knowledge about the apparel industry. This thesis is a bridge between three existing bodies of literature which look at companies and workers. Currently, there is a significant body of research about the links between management techniques, employee welfare, and productivity. There is also a wide range of research about apparel factory working conditions in developing countries

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[1] The terms "company", "buyer", and "firm" are used interchangeably throughout this work. They all refer to the entity that is purchasing the apparel manufactured by the supplier factory.
[2] The terms "vendor", "supplier", and "factory" are used interchangeably throughout this work. They all refer to the entity that is manufacturing the apparel.

and the ways firms and NGOs can improve those conditions. Finally, there is considerable research regarding the structure of multinational supply chains in the apparel industry. However, there has yet to be a study linking these three bodies of work.

The factory data analyzed in this thesis was collected by the Better Work Program and the Tufts University Labor Lab. Better Work is an international program focused on evaluating and improving working conditions in developing countries. It is jointly organized by the United Nation's International Labour Organization (ILO) and the International Finance Corporation (IFC), a member of the World Bank Group. Founded in 2007, Better Work is currently active in 1,450 factories in eight countries (The Programme). The Tufts University Labor Lab works closely with Better Work. The Labor Lab creates many of the surveys used by Better Work to evaluate worker wellbeing. Moreover, the Labor Lab organizes and analyzes the data collected during Better Work audits. Finally, the Labor lab writes reports and research papers using the compliance and survey data.

This thesis is organized into seven chapters. Chapter II examines the relevant literature, specifically why some firms treat their workers better than others, the structure of multinational supply chains, and how entities improve factory worker welfare. I will outline the practices that "good" firms employ to create a positive work environment and the practices that "bad" firms employ which result in a negative work environment. Chapter II explores how the different practices lead to increased or decreased worker productivity. Moreover, Chapter II discusses the structure of the multinational supply chain in the apparel industry. Finally, Chapter II examines the different techniques companies and international organizations use to improve working conditions in developing country factories. Chapter III outlines how the data were collected and organized as well as the limitations of the data and the data collection techniques. Chapter IV

summarizes the methodology behind the regressions by describing the different types of regression analyses used and what data went into each regression. Chapter V reports the results of the regressions and includes regression tables and a short analysis of the significant results from each table. Chapter VI includes interpretations of the regression output. Finally, Chapter VII provides concluding thoughts regarding the results of the regression analysis and guidance for future research that should be conducted to further this area of study.

Chapter II: Literature Review

This thesis adds to the general wealth of knowledge by creating a bridge between three independent, but related bodies of literature. The first body examines company strategies regarding worker treatment and organization. This body of literature discusses which management strategies increase or decrease worker productivity. The second body of literature discusses the development of multinational supply chains. The final body discusses the concept of corporate social responsibility (CSR) and the different techniques for implementing change in developing country factories. This chapter concludes with an analysis of two papers discussing international rent sharing.

Worker Treatment and Productivity

Since the advent of industrialization, productivity has steadily increased. The most common theory for why productivity has risen states that technological innovation is the key driver of productivity improvements. However, in addition to technological innovation, a considerable portion of increased productivity can be attributed to improvements in organizational practices (Lasierra 2012).

The theoretical concepts behind managerial practices and worker efficiency were developed in Matthew Rabin's paper (1993) *Incorporating Fairness into Game Theory and Economics*. Rabin sets up a classic prisoners' dilemma game where both managers and workers can choose to cooperate or defect. Workers can choose to give high effort (cooperate) or low effort (defect), while managers can treat workers well (cooperate) or treat workers poorly (defect). Rabin shows that if the players are rational workers choose low effort and managers choose to treat workers poorly (Rabin 1993). The game does not lead to the Pareto efficient outcome. Rabin argues that the optimal outcome is when workers give high effort and managers treat workers well. Furthermore, he states that the only way to obtain this outcome is if trust is built between workers and managers. Rabin develops three "stylized facts" to explain why trust is needed to break the poor treatment, low effort Nash equilibrium:

> "(A) People are willing to sacrifice their own material well-being to help those who are being kind.
> (B) People are willing to sacrifice their own material well-being to punish those who are being unkind.
> (C) Both motivations (A) and (B) have a greater effect on behavior as the material cost of sacrificing becomes smaller" (Rabin 1993, 1282).

These stylized facts suggest that workers will work harder for a manager or firm that treats them kindly, while they will work less hard for a manager or firm that treats them poorly. Finally, we should expect this effect to be stronger in firms where employees do not receive a commission as that commission increases the material cost of working hard. Rabin's work provides theoretical insights into why different firms choose different management practices. Some firms choose to treat workers poorly because they believe that low-pay, low-effort employees are more cost effective than high-pay, high-effort employees, while other firms take the opposite approach.

The following papers go into greater detail about the specific management practices that can be utilized by firms who wish to maximize worker efficiency and break out of Rabin's Nash equilibrium. Sandra E. Black and Lisa M. Lynch (2005) created a system to measure the organizational capital of a firm. Black and Lynch argue that increased organizational capital leads to increased worker productivity. Their definition of organizational capital emphasizes workplace training, employee voice, and work design. To increase a firm's organizational capital, the firm must improve in one or more of these areas.

First, if a firm increases the amount of training that workers receive, it will increase worker productivity. Training flattens the learning curve and teaches proper techniques to the workers, making them more efficient.

Second, firms can increase employee voice by giving employees more input into decision making. Black and Lynch state that the use of suggestion boxes, individual consultations, and semi-autonomous groups can be used to improve worker voice. Additionally, the authors state that, if used effectively, unions can increase employee voice and therefore increase organizational capital.

Third, an improved work design can increase organizational capital. An improved work design includes the ability to reallocate labor quickly and successfully, using for example, "job rotation and job share arrangements," and creating more management levels (Black and Lynch 2005, 207).

Finally, Black and Lynch note that, while not included in their original definition of organizational capital, incentive-based compensation may be necessary to improve productivity. Black and Lynch's model highlights the importance of employees voicing suggestions to help improve their productivity. However, increased productivity means that the firm now needs

fewer employees to perform the same work. Therefore, workers are jeopardizing their job security by making suggestions to improve productivity. As a result, incentive-based compensation is necessary to induce workers to offer suggestions. Strategies include using a piece-rate payment scheme or providing, "stock options, profit sharing, and bonuses related to achieving specific production targets" (Black and Lynch 2005, 208). Black and Lynch demonstrate a clear relationship between organizational capital and worker productivity.

As Rabin discussed in his theoretical model, trust is needed to break the low-effort, poor-treatment Nash equilibrium. Black and Lynch's paper states that to develop trust and move to a more Pareto efficient relationship, a firm must maximize their organizational capital.

Lasierra (2012) builds upon Black and Lynch's theory of organizational capital by discussing how the most efficient firms employ a post-Ford organizational model which takes advantage of modern technology and management techniques. Lasierra argues that managers can increase worker satisfaction, which leads to workers identify with the company. Identifying with the company in turn leads to increased worker productivity (Lasierra 2012, 73). According to Lasierra's research using Spanish worker survey data, firms should strive to create high performance work systems (HPWS) to motivate workers. HPWS encourage employees to be more creative, to learn about their company, and to use teamwork (Lasierra 2012, 72). Additionally, HPWS provide benefits such as profit-sharing. HPWS allow workers to feel invested in their employer company, build trust in the company and thus break Rabin's low-effort, poor-treatment Nash equilibrium.

A second key conclusion to Lasierra's work is that job flexibility leads to increased identification with the workplace, and thus increased productivity. However, routine work, which is common in apparel factories, has the opposite effect.

Collective bargaining also plays a key role in worker organization and is generally

considered good for workers. Yet, most apparel workers do not have access to collective

bargaining (Brown et al. 2016, 13). Moreover, changing global dynamics have resulted in altered

union dynamics in firms (Piekkola, Hannu and Snellman 2005). Globalization has led to the

decentralization of unions, thereby weakening their overall effectiveness at protecting worker

interests. The relationship between unions and worker welfare is a highly debated subject that

extends beyond the scope of this thesis but the following analysis proceeds with the assumption

that the right to collective bargaining leads to greater employee welfare (Piekkola, Hannu and

Snellman 2005; Yao and Zhong 2013; Li, Rohlin, and Singleton 2017).

While organizational capital, identification with the firm, and access to collective

bargaining increase productivity and worker welfare, there are many factors threatening the well-

being of factory workers including wage theft and sexual abuse.

According to Kim BoBo, wage theft, as defined in her 2011 book Wage Theft in

America: Why Millions of Working Americans Are Not Getting Paid - And What We Can Do

About It, "occurs when workers are not paid all their wages, workers are denied overtime when

they should be paid it, or workers aren't paid at all for the work they've performed" (7). An

estimated $50 billion in wages are stolen every year in the United States (Meixell, Brady and

Eisenbrey 2014). That is more than the value of all reportedly stolen goods. According to BoBo,

most firms knowingly and purposely steal wages to increase profits. Firms either directly

implement wage-theft programs or fail to implement wage-theft prevention mechanisms while

also demanding increased productivity from their subsidiary companies. Employers steal wages

in a variety of ways,[3] but the most prevalent of these methods include misclassifying workers as

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[3] Outlined in Chapter 2 of BoBo's book.

independent contractors to avoid paying them higher wages and providing benefit packages (Bobo 2011).

An additional component that can detract from worker welfare is sexual harassment of workers by managers. According to Xirong Lin, Laura Babbitt, and Drusilla Brown, sexual harassment is the result of unequal power incentives (Lin et al. 2014). Additionally, sexual harassment has been proven to decrease profitability in the factories included in this study (Lin et al. 2014).

The literature regarding good and bad managerial practices provides a comprehensive picture of how some firms try to increase profits and productivity. The literature is clear that happier, more involved, and more dedicated workers are more productive. However, workers that are maltreated become less productive because they do not identify with their employer companies.

History of the Multinational Supply Chain

Understanding the complexity of the modern supply chain is necessary to comprehend the incentives and disincentives multinational buyers have to improve working conditions in their supplier factories. Moreover, understanding how supply chains work is necessary to understand how buyers can affect worker conditions in their supplier factories.

The modern, complex multinational supply chain is made possible by global trade, low trade barriers, and the principle of comparative advantage. Firms based in industrialized countries, where there is a comparative abundance of skilled labor, contract factories to produce their goods in developing countries where there is a comparative abundance of unskilled labor. Throughout the last half century, the concept of the multinational supply chain expanded, and

two types of supply chains developed, efficient supply chains and market responsive supply chains (Parmigiani, Klasen, and Russo 2011). According to Parmigiani, Klasen, and Russo, predictable markets with constant inputs and outputs lend themselves to efficient supply chains, which allows factories and firms to minimize inventories. (Parmigiani, Klasen, and Russo 2011) However, the apparel industry is a fast-changing market. Production targets and product types change numerous times per year, requiring a responsive supply chain with a highly flexible production model.

Supply chains have been, and are continuing to, lengthen and become more complex (LeBaron 2013). As supply chains increase in length and complexity, firms become more detached from the factories that produce their goods. Detachment, demand for low cost production, and a lack of local government laws or the enforcement of existing laws, leads to poor working conditions for factory workers. Workers endure long hours for low pay and can be subject to physical and sexual abuse (Brown et al. 2016). Because of their detachment, firms are not legally liable for disasters that occur in factories that produced their goods.

However, consumers and activist groups hold firms accountable for the tragedies that occur in their supplier factories which result in decreased profits (Lagerie 2016). Firms responded to these reputation threats by purposefully creating increasingly complex supply chains to establish more degrees of separation between themselves and the production of their goods (LeBaron 2013). According to LeBaron, some firms began to hire subcontractors to work as middle men to decrease costs. LeBaron demonstrates that the use of subcontractors is linked to higher levels of forced labor and slavery. Furthermore, the largest firms cut costs by hiring hundreds of different factories to produce their goods and hire additional subcontractors during high production periods. The increasing complexity of these supply chains makes monitoring

difficult and expensive for firms and watchdog groups (Parmigiani, Klasen, and Russo 2011, 220). While firms often claim that their supply chains are too complex for them to know what is going on in every factory, firms are accountable for any abusive conditions that exist within their supply chain (Parmigiani, Klasen, Russo 2011).

The conceptual framework of increasingly complex supply chains has been verified by numerous empirical studies. In 1988, Tyson et al. published *The Dynamics of Trade and Employment* in which they warned that the apparel industry, due to its "relatively low skill requirements, low barriers to entry, and low transportation costs," was being outsourced at a rapid rate and that these new multinational firms were able to get around quotas by diversifying production locations (Tyson et al. 1988, 23). The United States was unable to achieve the technological breakthroughs that the authors suggested were necessary to save domestic production. Today, only a small fraction of clothing worn in the United States is produced there (Manning 2009).

Finally, different buyers have different incentives to improve their supply chain. Some buyers are reputation sensitive, meaning that they are under greater scrutiny by watchdog groups, consumers, and journalists for their factory working conditions. Generally, these are larger, more well-known companies (Oka 2009). Despite these buyers having large, complex multinational supply chains, they have more compliant supplier factories than less reputation sensitive companies (Oka 2009). Thus, even though supply chains have become increasingly complex, companies can still affect the working conditions in the factories. However, these companies will only implement policies to improve working conditions if they have an incentive to do so, such as high reputation sensitivity or a structure that prioritizes good working conditions to get high productivity workers.

How Firms Affect Factory Conditions

Currently, unless they explicitly state a policy in their company literature, firms are not legally obligated to monitor or take responsibility for the conditions of the workers they do not directly employ (Lagerie 2016). However, anti-sweatshop protesters have used tactics such as boycotts or sending emails and postcards to firm headquarters which take time and money to craft a response to and organize (Lagerie 2016). Firms have responded to protests by implementing corporate social responsibility (CSR) programs. In these CSR programs several strategies were developed to combat poor factory practices, with varying degrees of success. These strategies include regular audits of factories, interventions in bad factories, the development of corporate codes of conduct, and membership in Global Framework Agreements (Locke, Kochan, Romis, Qin 2007; Anner, Bair, Blasi 2013). The effectiveness of these tactics depends on the type and implementation of the program.

An understanding of the different types of programs is essential for determining the relationship between foreign and domestic working conditions. These programs are the principal ways firms monitor and alter working conditions for factory workers. "Good" programs are used to create tangible change for factory workers, while "bad" programs are simply used as a liability tactic. "Bad" firms will blame the monitoring agents rather than accepting responsibility in the case of an accident (Lagerie 2016). The following section describes the advantages and disadvantages of each strategy used to improve working conditions in supplier factories.

The first, and most common type of monitoring is auditing. Auditors are hired by firms or through sub-contractors to periodically enter factories, conduct surveys of workers, examine equipment, and provide assessments of the conditions.

"Information collected through factory audits will be used both by labor rights NGOs to exert pressure on global brands to reform their sourcing practices and by the brands themselves, which relay this information to police and pressure their suppliers to improve standards within their factories" (Locke, Kochan, Romis, and Qin 2007, 22).

Locke (2015) argues that this system breaks down at multiple levels. First, the data is usually incomplete, inaccurate, or unhelpful. Second, the demands that firms issue to factories are often not implemented. According to Locke, the only time audits are helpful is when auditors repeatedly return to the same factory and serve as a consultant or advisor. Locke and his colleagues therefore recommend that if firms want to create real change in their factories they must provide technical and organizational assistance to factories (Locke, Qin, Brause 2007).

Yet, Brown et al.'s (2016) *The Impact of Better Work*, finds significant improvements in some areas using auditing. The International Labour Organization's (ILO) Better Work program conducted compliance assessments in Vietnam, Indonesia, Jordan, and Haiti. They found several significant declines in non-compliance rates as a result of the auditing program (Brown et al. 2016). There is some disagreement with Locke's concern regarding the quality of audit data and lack of effectiveness regarding audit programs. While auditing may not be the best way to create systemic change in factory working conditions, it does have a positive effect and the evidence suggests that it is a valuable mechanism of measurement.

The next type of program is interventions in noncompliant factories. Locke et al. (2007) argue that interventions are a better way to improve working conditions as they target the worst factories and work with them over time. Their analysis of Nike factories shows that interventions allowed factories to "better schedule their work and to improve quality and efficiency" in addition to improving working conditions (Locke, Qin, and Brause 2007, 3) While this type of

intervention is more costly to implement, it may be more effective than monitoring or auditing alone.

The third type of program is corporate codes of conduct. There is significant debate regarding the implementation of corporate codes of conduct. Opponents of corporate codes of conduct argue that these codes exist to protect firms, not workers (Locke, Kochan, Romis, and Qin 2007). Moreover, Locke et al. (2007) argue that these codes only serve as an insurance policy in case of a disaster or scandal to demonstrate a level of CSR to the public. However, the firms that use corporate codes would argue that these codes are in place to enforce labor laws and regulations (Locke, Kochan, Romis, and Qin 2007).

Locke et al.'s (2007) work regarding the scoring of Nike factories using corporate codes of conduct, raises significant concerns about corporate codes. Locke et al. (2007) found that two Nike factories could score the same on one measurement scale, and differently on a new measurement scale. This means that firms can pick and choose the way they draft, measure, and enforce these codes and therefore an existence of a corporate code of conduct alone will not necessarily improve worker conditions. Instead, it depends on the substance, the measurement, and the enforcement of these codes.

The final CSR program is joining a global framework agreement (GFA). GFAs are legally binding and are negotiated between international unions and multinational firms (Anner, Bair, and Blasi 2013). These programs outline labor practices, provide consequences for violations, and create a structure for disputes. An example of a GFA is the Accord on Fire and Building Safety in Bangladesh. The Accord is a legally binding contract between worker representatives and over 60 retailers (Anner, Bair, and Blasi 2013). GFAs have strengths that may increase compliance and improve working conditions. The legally binding framework

forces firms to follow through with their promises and holds them accountable for conditions in their factories.

A central problem in multinational firms and their relations to worker conditions is accountability. Increased accountability should lead to better working conditions because firms held to a greater degree of responsibility will do more to prevent accidents and scandals. Activists want to increase accountability while firms often want to decrease it. GFAs increase accountability by creating a legally binding contract.

Key Profit Sharing Studies

The final section of this literature review is dedicated to an analysis of two works examining rent sharing across international borders. Rent sharing is an economic theory which states that changes in a firm's profits affects worker wages. The rent sharing literature provides insights into the way firm policies could be related to foreign workers' welfare. The studies prove that a link exists between a corporation's headquarters and their foreign factory workers in the form of headquarter profits and worker wages.

In 2004, John Budd and Matthew Slaughter published *Are Profits Shared Across Borders? Evidence on International Rent Sharing*. The paper is built upon a study these authors conducted in 2002 using largely western European parent firms and eastern European subsidiary firms. In their 2002 study, Budd and Slaughter find that a doubling of profitability increased wages in foreign affiliates by one to five percent (Budd, Konings, Slaughter 2002). In their 2004 study, Budd and Slaughter examine over 1000 Canadian labor contracts in auto plants owned by U.S. companies. The data for this study were collected between 1980 and 1992. The authors'

goal was to examine the role of international ties and trade barriers as well as to re-confirm the existence of international rent sharing.

Budd and Slaughter had several interesting findings. First, they find strong evidence that international rent sharing exists. However, they "found that U.S. industry profits are negatively related to Canadian wages" (Budd and Slaughter 2004, 23). This means that as profits for U.S. firms increase, wages for Canadian workers decrease, the opposite result of their 2002 study. They attribute this wage decrease to "product-market competition" which puts "downward pressure on Canadian wages" (Budd and Slaughter 2004, 24). However, the authors found that this wage decrease was eliminated when the workers were represented by a U.S. based union. This means that when the workers have a U.S. backer or sponsor they will be treated more like domestic workers. Second, they found that the wage decrease could also be mitigated by increased tariffs. Finally, Budd and Slaughter found only a weak relationship between transportation costs and rent sharing. The results of this study suggest that a relationship exists between domestic firm profits and foreign worker wages.

Pedro Martins and Yong Yang's 2015 paper *Globalized Labour Markets? International Rent Sharing Across 47 Countries* builds on Budd and Slaughter's work with the goal of conducting a globalized and robust examination of rent sharing. Martins and Yang examine firms based in Europe and the United States and their subsidiaries in Southeast Asia. This study examined over 2000 parent companies and over 5000 foreign subsidiaries between 1996-2007.

Martins and Yang found an average elasticity of affiliate wages with respect to parent profits of one to eight percent (Martins and Yang 2015). A doubling of company profits leads to a pay raise of one to eight percent for foreign workers. Second and importantly, they find that rent sharing is stronger in lower economically developed nations and weaker between countries

that share a language. Martins and Yang believe this is because rent sharing is the result of bargaining mechanisms and "heterogeneity can be regarded as proxy for complementarities in production (as under vertical foreign investment), which create wage bargaining opportunities" (Martins and Yang 2015, 685). As profits increase, cheap foreign workers have greater negotiating power because they know that the firm can pay more.

Chapter III: Data

The data used in this thesis comes from two sources. The data regarding the factories came from the Better Work auditing program while the data regarding the companies was collected by the author. For the vendor compliance data, auditors entered Better Work participating factories and evaluated an array of compliance points. Each evaluation asked slightly different questions, or the same questions phrased slightly differently. In Vietnam alone, over 1600 different questions were asked. For each question, a 0 was coded if there was no evidence of noncompliance and a 1 was coded if the factory was non-compliant.

The thousands of compliance questions were organized into eight clusters and 33 sub-clusters. Each cluster is an average of all questions within the compliance category. Therefore, the closer to 0 the cluster average is, the more compliant the factory is in that compliance category. Four of these sub-cluster variables were isolated as being the most likely to be affected by a buyer's management structure: Dialogue and Discipline, Worker Protection, Welfare and Facilities, and Worker Environment. The following section includes a summary of the compliance questions that make up each aggregate sub-cluster variable used in the regression

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analysis. I have also included summary statistics, for all cycles[4], for each compliance variable. The questions outlined below were the questions asked during surveys in Vietnam. Similar lines of questioning were asked in the other Better Work countries with slightly different phrasing or content depending on country and cycle.

Table 1 Year and Country of Better Work Auditing

year	Haiti	Indonesia	Country Jordan	Nicaragua	Vietnam	Total
2009	0	0	14	0	3	17
2010	36	0	20	0	64	120
2011	39	13	26	1	114	193
2012	48	27	52	12	133	272
2013	46	56	52	22	136	312
2014	54	72	54	23	173	376
2015	19	102	33	7	198	359
2016	0	131	0	0	0	131
2017	0	69	0	0	0	69
Total	242	470	251	65	821	1,849

Table 1 shows that nearly half of the compliance data was collected in Vietnam while less than 4 percent of the compliance data was collected in Nicaragua. Furthermore, the dataset only includes data past 2015 for Indonesia.

The Four Compliance Clusters

First, the Dialogue and Discipline cluster variable is an average of the following binary compliance questions:

- Did the employer resolve grievances and disputes in compliance with legal requirements?
- Do disciplinary measures comply with legal requirements?
- Does dialogue at the workplace take place in compliance with legal requirement?
- Have any workers been bullied or harassed for any other reason?

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[4] Auditors entered factories up to 11 times depending on the factory. Each cycle of auditing is included as a separate entry even if it was the same factory being audited multiple times.

- Have any workers been bullied, harassed or subject to humiliating treatment?
- Is there a Labor Conciliation Council in the factory?

Summary statistics are provided in Table 2 and a histogram in Figure 1

Table 2: Dialogue and Discipline Cluster Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Dialogue and Discipline Cluster	1,849	.152605	.1880844	0	1

Table 2 shows that the mean factory value on a 0 to 1 scale, with 0 being the factory has no evidence of noncompliance on all questions and 1 being the factory is noncompliant on all questions, is 0.152605.

Figure 1: Dialogue and Discipline Cluster Histogram
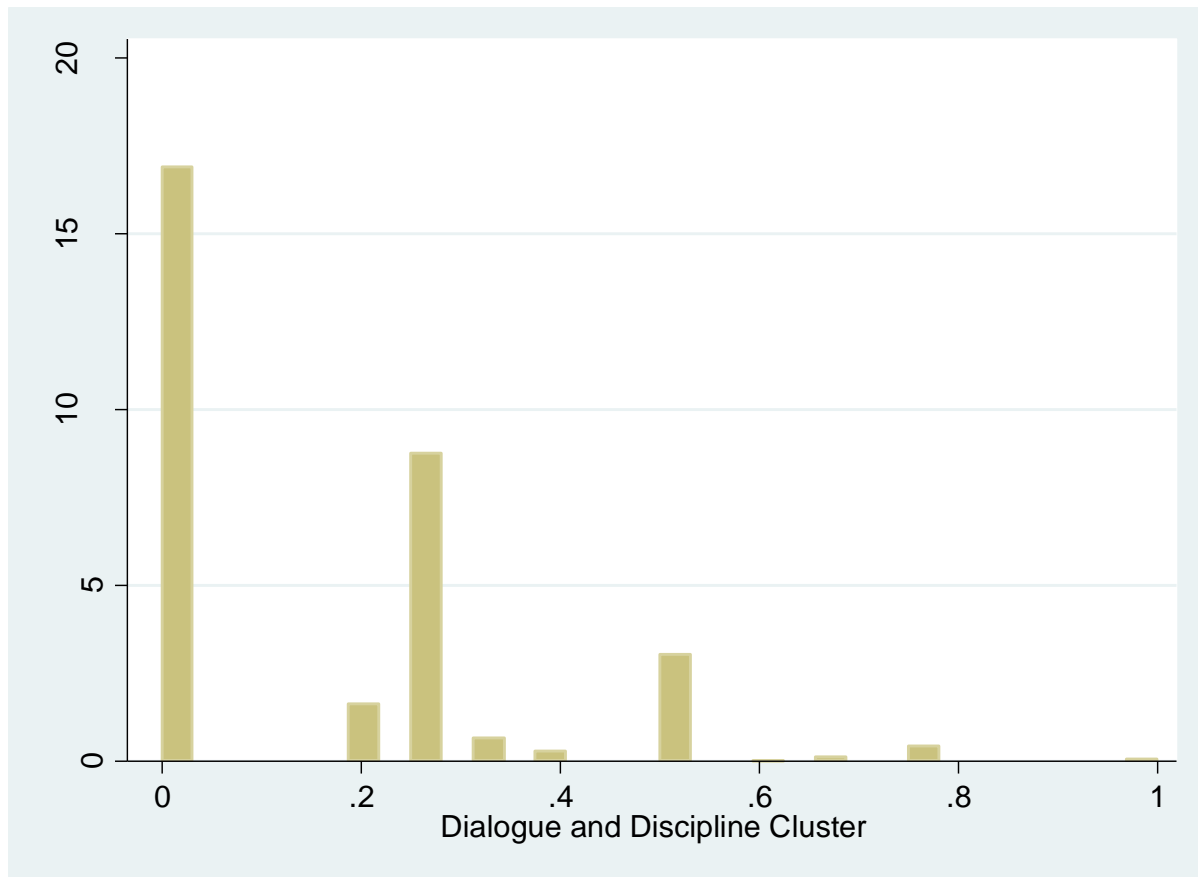
Second, the Worker Protection cluster variable is an average of the following binary

compliance questions:

- Are electrical wires, switches, plugs and appliances properly installed, grounded, regularly checked and maintained?
- Are materials, tools, switches, and controls within easy reach of workers?
- Are proper guards installed and maintained on all dangerous moving parts of machines
- Are standing workers properly accommodated?
- Are there appropriate safety warnings posted in the workplace?
- Are there sufficient measures in place to avoid heavy lifting by workers?
- Are workers effectively trained to use the personal protective equipment that is provided?
- Are workers effectively trained on occupational health and safety?
- Are workers effectively trained to use machines and equipment safely?
- Are workers protected against falls from heights?
- Do workers have suitable chairs?
- Do workers use the machines and equipment in a safe manner?
- Do workers use the personal protective equipment that is provided?
- Does the employer comply with ergonomic requirements?
- Does the employer comply with legal requirements related to machines, equipment
- Does the employer comply with legal requirements related to work subject to strict occupational safety requirements?
- Does the employer force workers to continue working when they have refused to work due to clear imminent and serious danger to their life or health?
- Does the employer provide workers with all necessary personal protective clothing and equipment?

Table 3: Worker Protection Cluster Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Worker Protection Cluster	1,621	.2407997	.1834461	0	1

Figure 1: Worker Protection Cluster Histogram
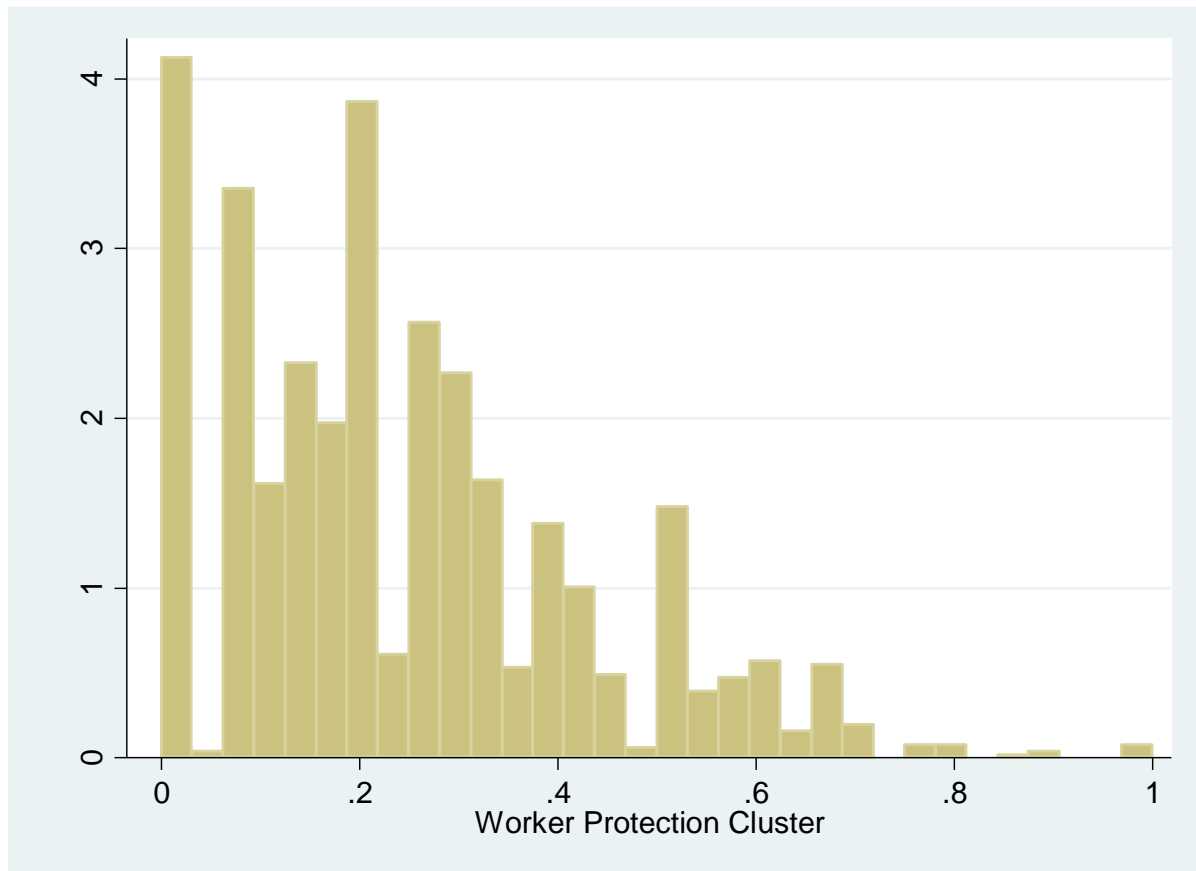
Third, the Welfare and Facilities cluster variable is an average of the following binary

compliance questions:

- Does the employer comply with requirements regarding canteen?
- Does the employer keep food samples for 24 hours?
- Does the employer provide workers enough free safe drinking water?
- Does the workplace have adequate accessible toilets?
- Does the workplace have adequate hand washing taps?
- Does the workplace have other legally-required facilities?
- Does the workplace provide all workers a place to store their clothes?
- Has the employer trained an appropriate number of workers to use the fire-fighting equipment?

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Table 4: Welfare and Facilities Cluster Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Welfare and Facilities Cluster	1,607	.2403028	.2059945	0	1

Figure 2: Welfare and Facilities Cluster Histogram
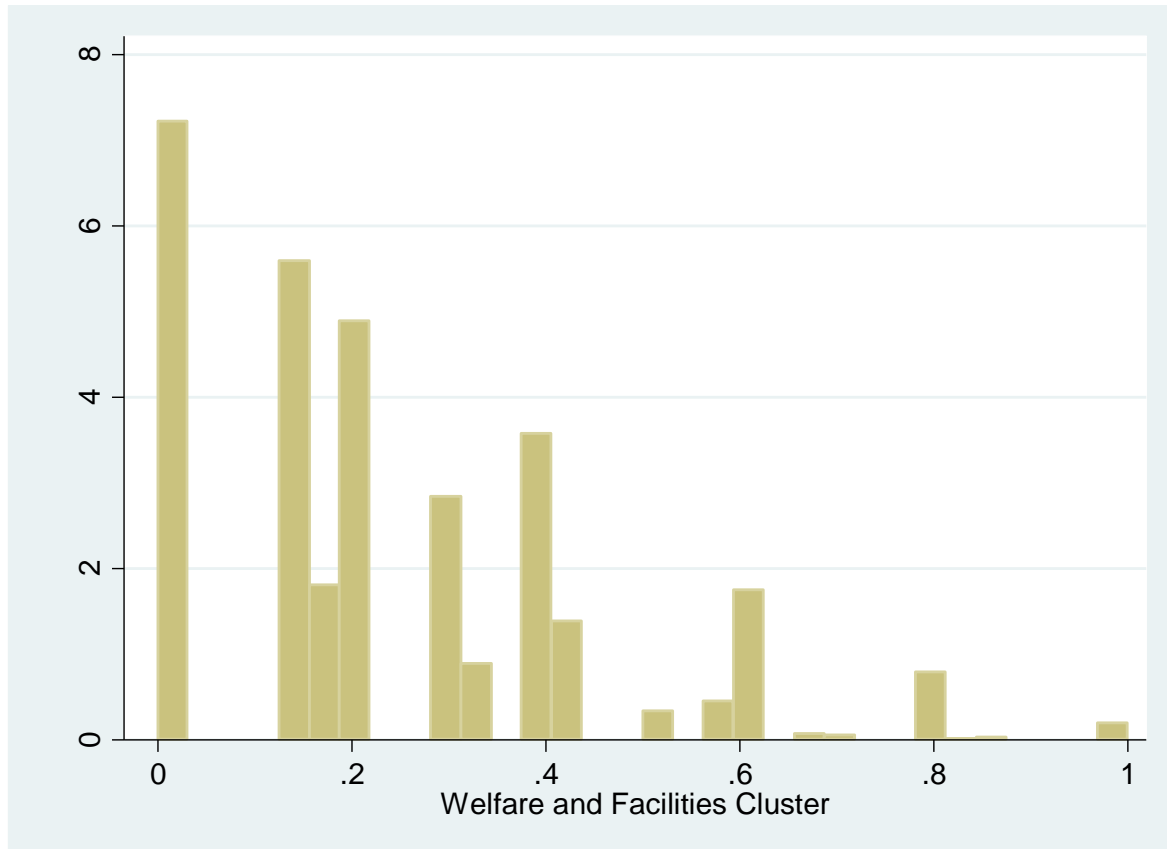
Fourth and last, the Worker Environment cluster variable is an average of the following binary compliance questions:

- Is the noise level in the workplace acceptable?
- Is the temperature in the workplace acceptable?
- Is the workplace adequately lit?
- Is the workplace adequately ventilated?
- Is the workplace clean and tidy?

Table 5: Worker Environment Cluster Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Worker Environment Cluster	1,542	.1265708	.183057	0	1

Figure 3: Worker Environment Cluster Histogram
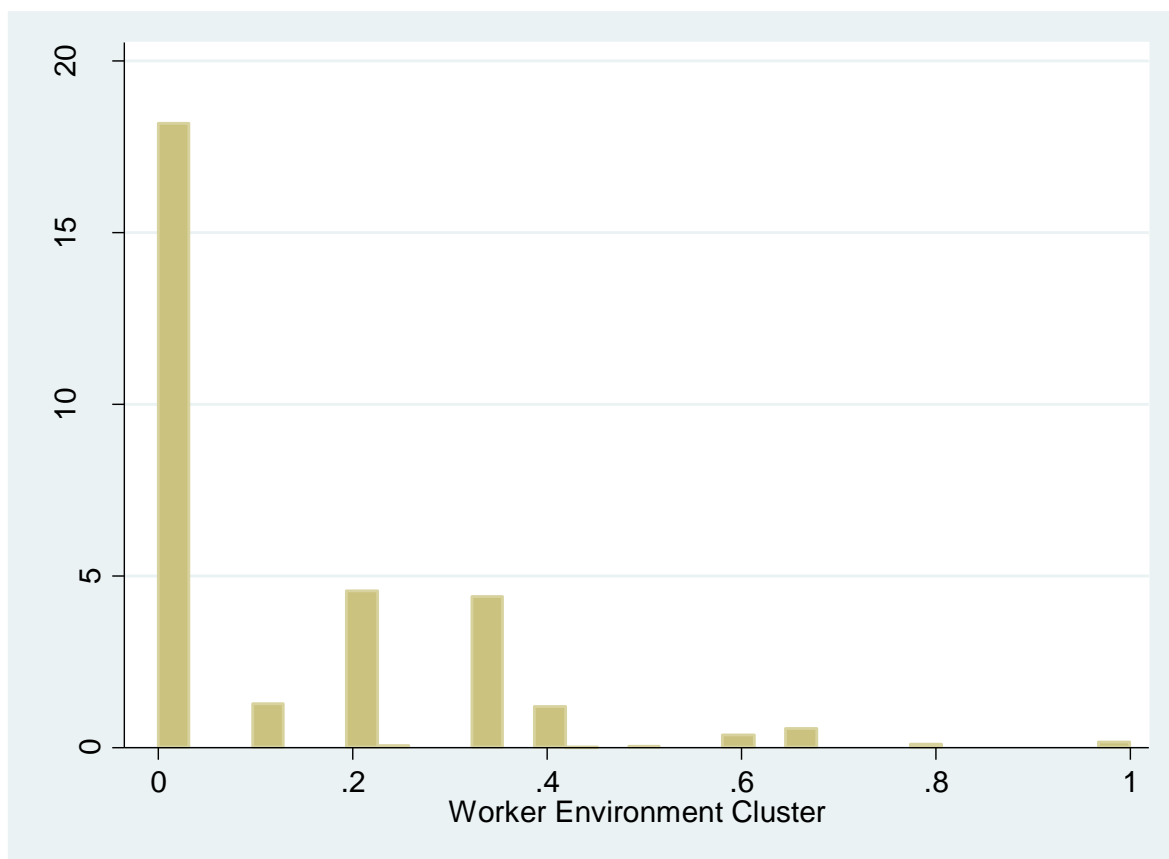
Auditing Cycles

Most of these factories were assessed multiple times. Each round of data collection is called a cycle. Eleven assessment cycles were conducted with a decreasing number of factories assessed in each cycle. Moreover, the five countries audited for compliance by Better Work have

different numbers of observations in total, and during each cycle. For example, only factories in Haiti were audited in the 8th-11th cycle. Table 6 shows the total number of audits per country and per cycle:

Table 6: Audits by Country and Cycle

Cycle	Haiti	Indonesia	Country Jordan	Nicaragua	Vietnam	Total
1	37	196	62	31	324	650
2	29	125	53	22	196	425
3	24	80	47	11	138	300
4	23	45	42	1	96	207
5	22	17	29	0	55	123
6	22	7	16	0	12	57
7	21	0	2	0	0	23
8	21	0	0	0	0	21
9	19	0	0	0	0	19
10	18	0	0	0	0	18
11	6	0	0	0	0	6
Total	242	470	251	65	821	1,849

Buyer Characteristics

The independent variables collected contain information on the buyers associated with each factory. When the Better Work factories signed up for the program, managers listed their top three buyers. The research was conducted on the top buyer listed by each factory. There were 419 different buyers listed.

Various information was collected for each buyer to use as independent variables and controls. The following section examines each variable collected, details how it was measured, and provides summary statistics and histograms for each at the end. The data that collected were

publicly available buyer characteristics that the author believed may be correlated with improved working conditions.

The data collected came from three sources. Primarily, data was collected directly from the companies' websites. If the information was not available directly on the company website, including the company's Facebook page, data was collected from Bloomberg's private company information database. Finally, if there was still information missing, data was collected from the company's LinkedIn page.

It is important to note that the compliance data was collected between 2009 and 2017 depending on the country. However, the buyer data is all from the fall of 2017. Thus, an assumption of this thesis is that the buyer characteristics did not change between when the compliance audits took place and the fall of 2017. The global shock of 2007-2008 occurred prior to the beginning of the data collection process suggesting that the aforementioned assumption will not greatly affect the validity of the results of this thesis. Below is a chart to illustrate the variation in data collection by year and country:

First, information was collected on the country headquarters of each buyer. There are buyers from 40 different countries. The specific countries are not divulged to protect the confidentiality of the buyers. The 40 countries were consolidated into 6 binary region variables to use as control variables: Asia, Australia, North America, Middle East, Europe, and South and Central America.

Second, data was collected on the age of the company to use as a control. The age is measured from the company's founding rather than when the company was first incorporated.

Third, information was collected on the type of buyer. There are seven types of buyers: brands, retailers, supply chain managers, brand owners, wholesalers, manufacturers, and factories. These classifications are not mutually exclusive. A buyer must be at least one type but can also be multiple types. The classifications were developed by Ana Antolin and her classification system is replicated here:

Brand- advertises clothing with a specific label
Brand Owner- larger parent company of brands without necessarily being a brand itself
Retailer- owns stores where clothes and other products can be purchased either online or in person
Supply Chain Manager- most are self-identified, in charge of coordinating designing and manufacturing of products from a number of locations
Wholesaler- manufactures apparel that is sold after the fact to other brands and stores, with or without company label
Manufacturer- owner of many factories and intermediary for subcontracting
Factory- factory with single location (Some Better Work factories are listed as customers)

Fourth, information was collected on whether the company had an explicit corporate social responsibility (CSR) policy stated on their website. The goal of this is to measure the relationship between companies that claim to monitor and/or work to improve their factory working conditions and the actual conditions on the ground. Many buyers have a generic statement saying they are compliant with the California Transparency in Supply Chains Act of 2010 (CTSCA) while others have an individualized CSR policy. Some buyers have both an individualized CSR policy and a statement saying they are compliant with the CTSCA.

The CTSCA requires retailers and manufacturers with over $100 million in gross receipts to disclose on their websites their, "efforts to eradicate slavery and human trafficking from [their] direct supply chain" (Harris 2015, i). However, the Attorney General of California Kamala D. Harris clearly states that, "the law only requires that covered businesses make the

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required disclosures – even if they do little or nothing at all to safeguard their supply chains"
(Harris 2015, i). This means that the CTSCA may not indicate a true CSR policy.

As a result, the CSR category is divided into two binary variables that are not mutually exclusive. One binary variable was created for buyers that have information about their CSR policies other than simply stating that they are compliant with the CTSCA. The second is a binary variable for buyers that state that they are compliant with the CTSCA on their website.

Fifth, data was collected to control for whether the company is publicly traded or privately owned.

Sixth, information was collected regarding the number of employees. Many buyers only listed their total number of employees on their LinkedIn pages in the form of a range. To compensate for this, and account for large outliers, the data is organized into three sizes. Each cutoff is at the same point as a LinkedIn range cutoff as to not incorrectly categorize a buyer. The cutoffs are as follows:

Small: 1-999 employees
Medium: 1000-9,999 employees
Large: 10,000+ employees

Seventh, information was collected regarding whether the buyer lists all of their suppliers. Publicly disclosing factory names and locations is a popular tactic firms use to signal to customers that they have compliant factories.

Eighth, data was collected regarding whether the buyer was a member of the Sustainable Apparel Coalition (SAC) or the Fair Labor Association (FLA). The SAC develops the Higg

Index which scores firms' sustainability practices. It places emphasis on the environmental impacts of production and on the transparency of firm practices (The SAC). Moreover, it costs a non-trivial amount to enter the SAC. Member annual dues range from $5,000 to $60,000 depending on total firm revenue. About 60 percent of the world's footwear and apparel market are members of the SAC (Outdoor Industry Association).

The FLA focuses more on improving working conditions in factories. It focuses on implementing and monitoring members' compliance with their code of conduct. According the FLA website, they have conducted 1,500 unannounced factory visits in the factories of member companies (Transparency). The very first paragraph of the preamble states that, "The Code's standards are based on International Labour Organization (ILO) standards and internationally accepted good labor practices" (Code of Conduct). If this is correct, FLA members should be highly linked to the compliance clusters measured in this paper as the compliance questions are developed by the ILO and organizations that work closely with the ILO. Specifically, the FLA has guidelines outlining their policies regarding employment relationship, nondiscrimination, harassment or abuse, forced labor, child labor, freedom of association, health, safety and environment, hours of work, and compensation (Code of Conduct). The FLA also charges annual membership dues with the dollar amounts depending on the category of license and size of the company (FLA Company).

Ninth, information was collected regarding whether a company made forbes.com's, fortune.com's or glassdoor.com's list of top places to work. These three websites have many criteria that they use to evaluate companies to rank them as the best places to work. The specific criteria can be found on the companies' websites. Few of the buyers made these lists. Instead of

evaluating each list independently, the analysis uses a binary variable of whether a company made any list as a measure of domestic treatment.

Tenth, information was collected regarding whether a company had a human resources (HR) website outlining the company's HR department responsibilities, policies, and/or goals. This was further divided into two categories. First, whether a company had a specific HR website stating responsibilities, policies, and/or goals. And second, whether a company simply mentioned their HR department responsibilities, policies, and/or goals somewhere on their website, but does not have a public page dedicated exclusively to their HR department. The second category usually took the form of information regarding the HR department goals or values on a company's hiring page. However, there were not enough observations for each category. A binary variable was created stating whether a company highlighted its HR department on its website regardless of whether it was on its own page or mentioned elsewhere on the site.

Eleventh, information was collected regarding whether a company posted an explicit sexual harassment policy on their website. Only companies that had a policy against sexual harassment were counted. If there was a stated workplace conduct policy, but it did not mention sexual harassment, it was not counted. Posting an explicit sexual harassment policy signals that a firm cares about preventing harassment in its domestic workforce.

Twelfth and last, data was collected regarding whether a company had an employee hotline. Only companies were counted that had a number specifically for employees to call to

voice complaints, suggestions, or to report code of conduct violations. Customer support lines did not count. Having an employee hotline signals that the company may have more worker complaints because it treats their workers poorly.

Ana Antolin (Tufts University Cass of 2018) developed the control variables: buyer country, age, type, CSR policy, ownership type, employee count, whether they list suppliers, and international organization membership. Additionally, Antolin collected data for 208 (of which the author used 101) buyers. The author collected all of the buyer data for the remaining 318 buyers along the with the rest of the buyer characteristics data (best places to work list, HR department, sexual harassment policy, and employee hotline) the for all 419 buyers.

Limitations of the Data

The process of collecting data for this thesis consisted of scouring company websites for information regarding CSR policies, HR policies, Codes of Conduct, etc. While the author did his best to find the most accurate information regarding each buyer, it is possible that he missed something. This is especially likely for companies that did not have English websites. The author did his best to translate everything and to produce the most accurate data he could, but there may be some error due to mistranslations.

Additionally, many of the buyers did not have any information publicly available. This could be due to errors in the form when the factories signed up for the Better Work program. Additionally, it could be due to buyers not wanting to have an online presence. As of 2017, of the 419 buyers listed by Better Work factories, 24 percent of the first buyers listed either do not exist, have changed their name, or do not have an online presence. Continuing, from the 318

remaining buyers, only 234 were matched with at least one factory that was audited. Thus, this

analysis uses data collected from 234 different buyers.

Summary Statistics

Table 7 displays the summary statistics of buyer characteristics where each buyer is only

counted once, even if multiple factories have the same buyer. This list does not include missing

buyers that have no public information and therefore were not used in the regression analysis:

Table 7: Independent Variables Summary Statistics

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
Age[5]	190	59.78947	35.92508	3	177
Small Size	169	0.2426036	0.4299312	0	1
Medium Size	169	0.2781065	0.4493977	0	1
Large Size	169	0.4792899	0.5010555	0	1
Private	234	0.3974359	0.4904166	0	1
Region- Asia	234	0.0897436	0.2864267	0	1
Region- Europe	234	0.1495726	0.3574166	0	1
Region- Middle East	234	0.034188	0.1821014	0	1
Region- North America	234	0.542735	0.4992383	0	1
Region- South and Central America	234	0.008547	0.0922514	0	1
Region- Australia	234	0.0128205	0.1127407	0	1
Brand[6]	234	0.4871795	0.5009071	0	1
Brand Owner	234	0.0982906	0.2983453	0	1
Retailer	234	0.3675214	0.4831636	0	1
Supply Chain Manager	234	0.017094	0.1298997	0	1
Wholesaler	234	0.0897436	0.2864267	0	1
Manufacturer	234	0.0940171	0.2924781	0	1

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[5] Observations for some variables are less than 234 because there was no public information regarding size or age for some firms.
[6] Buyer type means sums to greater than one because buyers can be multiple types

Factory	234	0.0128205	0.1127407	0	1
Individual CSR Policy	234	0.4145299	0.4936967	0	1
California Compliant	234	0.2264957	0.4194608	0	1
List Suppliers	234	0.0982906	0.2983453	0	1
Sustainable Apparel Coalition	234	0.0854701	0.2801793	0	1
Fair Labor Association	234	0.1111111	0.3149434	0	1
Top Places To Work List	234	0.0854701	0.2801793	0	1
Specific HR Website	234	0.0470085	0.2121109	0	1
HR Mentioned	234	0.1025641	0.3040391	0	1
Sexual Harassment Policy	234	0.2564103	0.4375869	0	1
Employee Hotline	234	0.1324786	0.3397371	0	1

The following table includes summary statistics of the merged data. These data represent the buyer data used in the regression analysis, meaning that each buyer is counted once for each time one of its supplier factories was audited.

Table 8: Independent Variables Merged Data Summary Statistics

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
Age	1,764	71.25794	37.09154	3	177
Small Size	1,702	0.0846063	0.2783768	0	1
Medium Size	1,702	0.1504113	0.3575792	0	1
Large Size	1,702	0.7649824	0.4241345	0	1
Private	1,849	0.2255273	0.4180422	0	1
Region- Asia	1,849	0.0205516	0.1419161	0	1
Region- Europe	1,849	0.1216874	0.3270129	0	1

Region- Middle East	1,849	0.0091942	0.0954702	0	1
Region- North America	1,849	0.7971877	0.4022027	0	1
Region- South and Central America	1,849	0.00649	0.0803204	0	1
Region- Australia	1,849	0.0048675	0.0696163	0	1
Brand	1,849	0.5040562	0.5001188	0	1
Brand Owner	1,849	0.1022174	0.303016	0	1
Retailer	1,849	0.5256896	0.4994747	0	1
Supply Chain Manager	1,849	0.0070308	0.0835773	0	1
Wholesaler	1,849	0.03894	0.1935043	0	1
Manufacturer	1,849	0.0800433	0.2714336	0	1
Factory	1,849	0.0086533	0.092645	0	1
Individual CSR Policy	1,849	0.6517036	0.4765594	0	1
California Compliant	1,849	0.4716063	0.4993282	0	1
	1,849				
List Suppliers	1,849	0.3244997	0.4683143	0	1
Sustainable Apparel Coalition	1,849	0.3336939	0.4716594	0	1
Fair Labor Association	1,849	0.2790698	0.4486632	0	1
Top Places To Work List	1,849	0.1833423	0.3870516	0	1
Specific HR Website	1,849	0.1481882	0.3553826	0	1
HR Mentioned	1,849	0.2893456	0.4535813	0	1
Sexual Harassment Policy	1,849	0.634397	0.4817291	0	1
Employee Hotline	1,849	0.4034613	0.4907245	0	1

Correlation Table

As will become apparent in the results chapter, some buyer characteristics, especially

buyer size, take explanatory power from most of the other buyer characteristics. This is because

buyer size is correlated with all of the other independent variables collected. Moreover, as is

discussed in the results and discussion chapters of this thesis, several variables have complicated

relationships to the compliance data resulting from collinearity. Therefore, those independent

variables are portrayed in this correlation table to help explain the regression results. This correlation table includes data from all 11 auditing cycles. In the table the top value represents the correlation coefficient and the bottom value represents the significance of the relationship.

Table 9: Independent Variables Correlation Table

	Small Size	Medium Size	Large Size	California Compliant	Any HR on Website	List Suppliers	Employee Hotline
Small Size	1						
Medium Size	-0.1279	1					
	0						
Large Size	-0.5485	-0.7591	1				
	0	0					
California Compliant	-0.3074	-0.017	0.2161	1			
	0	0.4843	0				
Any HR on Website	-0.2785	-0.2688	0.4094	0.0884	1		
	0	0	0	0.0001			
List Suppliers	-0.2061	-0.1238	0.2396	-0.1133	0.5111	1	
	0	0	0	0	0		
Employee Hotline	-0.2493	-0.2393	0.3653	0.049	0.6413	0.313	1
	0	0	0	0.0352	0	0	
Individual CSR Policy	-0.3057	-0.2621	0.4216	-0.053	0.4137	0.4727	0.4578
	0	0	0	0.0228	0	0	0
Sustainable Apparel Coalition	-0.2293	-0.1634	0.2883	-0.0344	0.6313	0.8667	0.3555
	0	0	0	0.139	0	0	0
Fair Labor Association	-0.1959	-0.1309	0.239	0.0306	0.0492	0.3311	-0.1135
	0	0	0	0.189	0.0345	0	0
Top Places To Work List	-0.1516	-0.1646	0.2383	-0.0052	0.1625	0.3373	-0.1105
	0	0	0	0.8216	0	0	0
Sexual Harassment Policy	-0.256	-0.2506	0.3793	0.184	0.5292	0.4494	0.5511
	0	0	0	0	0	0	0
Buyer Privately Owned	0.4973	0.2618	-0.5471	-0.191	-0.3226	-0.322	-0.3132
	0	0	0	0	0	0	0

The correlation table demonstrates that most of the independent variables are significantly correlated with each other. Notably, listing suppliers is highly correlated with membership in the Sustainable Apparel Coalition (SAC) with a correlation coefficient of 0.8667 and a significance value rounded to 0. This makes sense as the SAC website states that one of its objectives is to increase transparency. Furthermore, large buyers are positively correlated with having all other buyer characteristics, except being privately owned.

Chapter IV: Methodology

The goal of this thesis is to determine the relationship between how buyers treat their domestic workers and the worker treatment in their supplier factories. In order to measure this relationship, data was collected on buyer characteristics, policies, and practices, as well as factory compliance.

It is important to note that in this line of analysis correlation is being measured rather than causation. There are a myriad of factors that contribute to factory compliance. With this analysis, insights are provided into what those factors may be, but the data cannot prove direct causation between the independent variables and factory compliance.

To measure the effect of the independent variables, two rounds of OLS linear regressions per compliance cluster were conducted. The first round only used compliance data from the first auditing cycle with the goal of isolating whether the buyer policies influenced factory conditions before any additional cycles of audits took place. As will be later demonstrated, during the first five cycles, factories became more compliant during each cycle. After five cycles, the data from Haiti becomes over-represented, as demonstrated in Table 6. Haiti had exceptionally high rates of noncompliance which skews the data to less compliant after five cycles. Additionally, after

five cycles the sample size becomes too small to make reliable conclusions. Within the first round of regression analysis, four regressions with increasing number of controls are conducted to isolate which variables hold the most explanatory power.

In the second round of regressions observations from all cycles are used, thereby increasing the total number of observations from 650 to 1,849. Again, in the second round of regression analysis four regressions were conducted with an increasing number of control variables in order to isolate which variables hold the most explanatory power.

In general, the first two rounds of regressions showed that buyer size and cycle had the most consistent correlation to factory compliance. Therefore, in the third round of analysis, graphs are used to illustrate the change in average compliance by buyer size through cycles 1 to 5. These graphs were made using a balanced panel, meaning that all factories included in the graph were audited in each of the first five auditing cycles. The goal of the graphs was to determine how factories responded to audits and if buyer size affected that response.

Chapter V: Results

Chapter V includes the results of the regression analyses and is organized by compliance cluster. For each compliance cluster, a table of the regression results using only the first cycle of audits is shown first. Following is a second table with the results from the regressions using data from all eleven rounds of audits. Finally, for each compliance cluster there is an examination of how buyer size impacts the compliance level between cycles 1 and 5.

It is important to note that the compliance data is coded as 0=no evidence of noncompliance and 1= not compliant for all compliance questions within the cluster. This means the closer to 0 for each compliance cluster, the more compliant the factory. Thus, a negative

coefficient in the following charts implies the buyer characteristic is correlated with the factory having less evidence of noncompliance for that cluster.

Worker Protection Cluster

The worker protection cluster is a measure of whether the machinery/equipment in the factory meets ILO safety requirements and standards.

Results reported in Table 10 show specifications for the Worker Protection cluster using data only from the first audit cycle. This line of questioning was asked during the first assessment cycle in Jordan, Indonesia, Vietnam, and Nicaragua. This line of questioning was not asked in Haiti until the fourth cycle. Therefore, the compliance data from Haiti is omitted from this analysis. To prevent collinearity, the variables for buyer region of South and Central America, factory country of Nicaragua, and small buyer size are omitted. For each explanatory variable, the top number is the coefficient and the bottom number is the standard error.

Table 10: Worker Protection Cluster Assessment Cycle 1

VARIABLES	Worker Protection Cluster	Worker Protection Cluster	Worker Protection Cluster	Worker Protection Cluster
Employee Hotline	-0.0127	-0.000209	0.000563	-0.0118
	-0.0254	-0.0254	-0.026	-0.0263
Sexual Harassment Policy	-0.0264	-0.028	-0.0241	-0.0179
	-0.0238	-0.0236	-0.0245	-0.0254
Buyer Any HR	-0.0333	-0.0245	-0.0301	-0.00497
	-0.0262	-0.0263	-0.0268	-0.028
Buyer Makes Any List	0.0383	0.0194	0.0246	0.0186
	-0.0276	-0.0274	-0.0279	-0.0282
Buyer FLA	-0.0431	-0.0191	-0.0214	-0.0444
	-0.0271	-0.0268	-0.0272	-0.0323
Buyer SAC	0.0487	0.0253	0.041	0.0175

	-0.0391	-0.0392	-0.0401	-0.0405
Buyer California	0.0138	0.0168	0.0221	0.0337
	-0.0169	-0.0182	-0.0197	-0.0221
Buyer CSR Policy	-0.0206	-0.0197	-0.0204	-0.0168
	-0.02	-0.02	-0.0227	-0.0226
Buyer Lists Suppliers	-0.0119	-5.91E-05	-0.014	-0.0107
	-0.0358	-0.0354	-0.0366	-0.0373
Buyer Privately Owned	0.0157	0.0302	0.00409	-0.00693
	-0.0207	-0.021	-0.0245	-0.0246
Buyer Region Asia		-0.112**	-0.148*	-0.0955
		-0.0515	-0.0769	-0.0854
Buyer Region Australia		-0.0744	-0.123	-0.122
		-0.0883	-0.1	-0.0996
Buyer Region North America		-0.0969***	-0.166***	-0.182***
		-0.0344	-0.0557	-0.0557
Buyer Region Middle East		-0.105	-0.106	-0.0843
		-0.0732	-0.143	-0.143
Buyer Region Europe		-0.113***	-0.178***	-0.188***
		-0.0395	-0.059	-0.0589
Factory Country Jordan		-0.0616	-0.0707	-0.0879*
		-0.0422	-0.0447	-0.0448
Factory Country Indonesia		0.0769**	0.0618	0.0473
		-0.0369	-0.0382	-0.0384
Factory Country Vietnam		-0.0107	-0.0271	-0.0436
		-0.0359	-0.037	-0.0371
Buyer Size Medium			-0.0482	-0.0710*
			-0.0396	-0.041
Buyer Size Large			-0.0463	-0.0722*
			-0.0394	-0.0435
Buyer Type Brand				0.0410*
				-0.0211
Buyer Type Retailer				-0.00747
				-0.0275
Buyer Type Supply Chain Manager				-0.0638
				-0.0906
Buyer Type Brand Owner				0.0713**
				-0.034
Buyer Type Wholesaler				-0.135**
				-0.0545

Buyer Type Manufacturer				0.000619
				-0.0569
Buyer Type Factory				0.014
				-0.201
Constant	0.345***	0.414***	0.540***	0.570***
	-0.0179	-0.0451	-0.0739	-0.0767
Observations	613	613	547	547
R-squared	0.03	0.099	0.099	0.127

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

Regression results for the worker protection cluster using data from all available audit cycles are reported in Table 11. Haiti factory compliance data is included in these regressions. To prevent collinearity, the variables for buyer region of South and Central America, factory country of Nicaragua, small buyer size, and cycle 1 are omitted. Moreover, cycle 9 is omitted because no factories were asked about worker protection during that cycle.

Table 11: Worker Protection Cluster Assessment Cycles 1 to 11

VARIABLES	Worker Protection Cluster	Worker Protection Cluster	Worker Protection Cluster	Worker Protection Cluster
Employee Hotline	-0.00772	0.000872	0.00186	-0.00313
	-0.0137	-0.0136	-0.0137	-0.0141
Sexual Harassment Policy	-0.0159	-0.0184	-0.0139	-0.00904
	-0.0133	-0.0133	-0.0136	-0.0143
Buyer Any HR	-0.0121	-0.00742	-0.0111	0.000109
	-0.0147	-0.0147	-0.0149	-0.0156
Buyer Makes Any List	0.0183	0.0108	0.018	0.0119
	-0.0165	-0.0166	-0.0168	-0.0169
Buyer FLA	-0.024	-0.0147	-0.017	-0.0183
	-0.015	-0.0149	-0.015	-0.0187
Buyer SAC	0.00384	-0.00626	0.00849	-0.00438

	-0.0227	-0.0227	-0.023	-0.0236
Buyer California	-0.00197	-7.13E-06	0.00428	0.00651
	-0.00922	-0.00982	-0.0106	-0.0126
Buyer CSR Policy	-0.00639	-0.00677	-0.00699	-0.00643
	-0.0116	-0.0117	-0.0129	-0.013
Buyer Lists Suppliers	-0.00489	0.00164	-0.0116	-0.0092
	-0.0209	-0.0206	-0.021	-0.0218
Buyer Privately Owned	-0.00154	0.013	-0.00147	-0.00392
	-0.0123	-0.0126	-0.0145	-0.0147
Buyer Region Asia		-0.128***	-0.114**	-0.0708
		-0.0348	-0.051	-0.0576
Buyer Region Australia		-0.0518	-0.0454	-0.0417
		-0.0595	-0.0663	-0.0666
Buyer Region North America		-0.0925***	-0.101***	-0.106***
		-0.0229	-0.0365	-0.0368
Buyer Region Middle East		-0.0788*	-0.0201	-0.00968
		-0.046	-0.124	-0.124
Buyer Region Europe		-0.0985***	-0.111***	-0.115***
		-0.0257	-0.0386	-0.0388
Factory Country Haiti		-0.216*	-0.241**	-0.246**
		-0.122	-0.122	-0.124
Factory Country Jordan		-0.0505**	-0.0636**	-0.0702***
		-0.0245	-0.0255	-0.0257
Factory Country Indonesia		0.0261	0.0121	0.00413
		-0.0228	-0.0235	-0.0237
Factory Country Vietnam		-0.0451**	-0.0599***	-0.0662***
		-0.0223	-0.0229	-0.023
Buyer Size Medium			-0.0395*	-0.0595**
			-0.0239	-0.0251
Buyer Size Large			-0.0355	-0.0581**
			-0.0242	-0.0268
Buyer Type Brand				0.0227*
				-0.0121
Buyer Type Retailer				0.0125
				-0.0158
Buyer Type Supply Chain Manager				-0.0289
				-0.0551
Buyer Type Brand Owner				0.0336*
				-0.019

Buyer Type Wholesaler				-0.0590*
				-0.0323
Buyer Type Manufacturer				0.00788
				-0.0389
Buyer Type Factory				-0.173
				-0.128
Audit Cycle 2	-0.0900***	-0.0873***	-0.0935***	-0.0938***
	-0.0111	-0.0109	-0.0114	-0.0114
Audit Cycle 3	-0.129***	-0.124***	-0.126***	-0.126***
	-0.0125	-0.0123	-0.0128	-0.0128
Audit Cycle 4	-0.143***	-0.130***	-0.131***	-0.132***
	-0.0145	-0.0144	-0.0148	-0.0148
Audit Cycle 5	-0.139***	-0.121***	-0.119***	-0.120***
	-0.0185	-0.0185	-0.0186	-0.0186
Audit Cycle 6	-0.118***	-0.0959***	-0.0897***	-0.0871***
	-0.0296	-0.0295	-0.03	-0.03
Audit Cycle 7	-0.228*	-0.199*	-0.197	-0.198*
	-0.122	-0.12	-0.12	-0.12
Audit Cycle 8	0.676***	0.872***	0.861***	0.853***
	-0.172	-0.206	-0.206	-0.207
Audit Cycle 9 (omitted)	-	-	-	-
Audit Cycle 10	-0.123	0.076	0.0709	0.0521
	-0.0775	-0.142	-0.142	-0.142
Audit Cycle 11	0.00537	0.186	0.295**	0.339**
	0	0	0	0
Constant	0.341***	0.442***	0.496***	0.504***
	-0.0119	-0.0293	-0.047	-0.0487
Observations	1,621	1,621	1,490	1,490
R-squared	0.137	0.178	0.176	0.183

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

Table 10 and Table 11 show that if the buyer is located in North America or Europe the

suppliers are, on average, less noncompliant regarding worker protection than if the buyer is

located in South or Central America by -0.106 and -0.115, respectively. This holds for the analysis of the first cycle and of all cycles and is significant at the P<.01 level.

Second, the results show that larger buyers are correlated with lower levels of noncompliance regarding worker protection. The relationship is significant at the P<.05 level. Interestingly, as Table 11 demonstrates, while medium and large buyers are more compliant than small buyers by -0.0595 and -0.0581, respectively, there is little difference between whether the buyer is medium sized or large sized.

Third, the results demonstrate that the type of buyer matters. Table 11 shows that a buyer being a brand or a brand owner is correlated with the supplier being less compliant regarding worker protection by 0.0227 and 0.0336 respectively. However, a buyer being a wholesaler is correlated with the supplier having lower levels of noncompliance regarding worker protection by -0.059. These relationships are all significant at the P<0.1 level.

Fourth, Table 11 shows that as the cycle progress, the factory becomes more compliant, suggesting that the auditing process is an effective mechanism for decreasing noncompliance in factories. However, after cycle 7, the evidence of noncompliance increases as a result of the fact that only Haiti has more than 7 audit cycles.

The following graph represents the average compliance for each buyer size for cycles 1 to 5. This graph was generated from a balanced panel meaning that all factories included in the creation of this graph were audited in cycles 1, 2, 3, 4, and 5.

Figure 4: Average Noncompliance Rates in the Worker Protection Cluster by Buyer Size
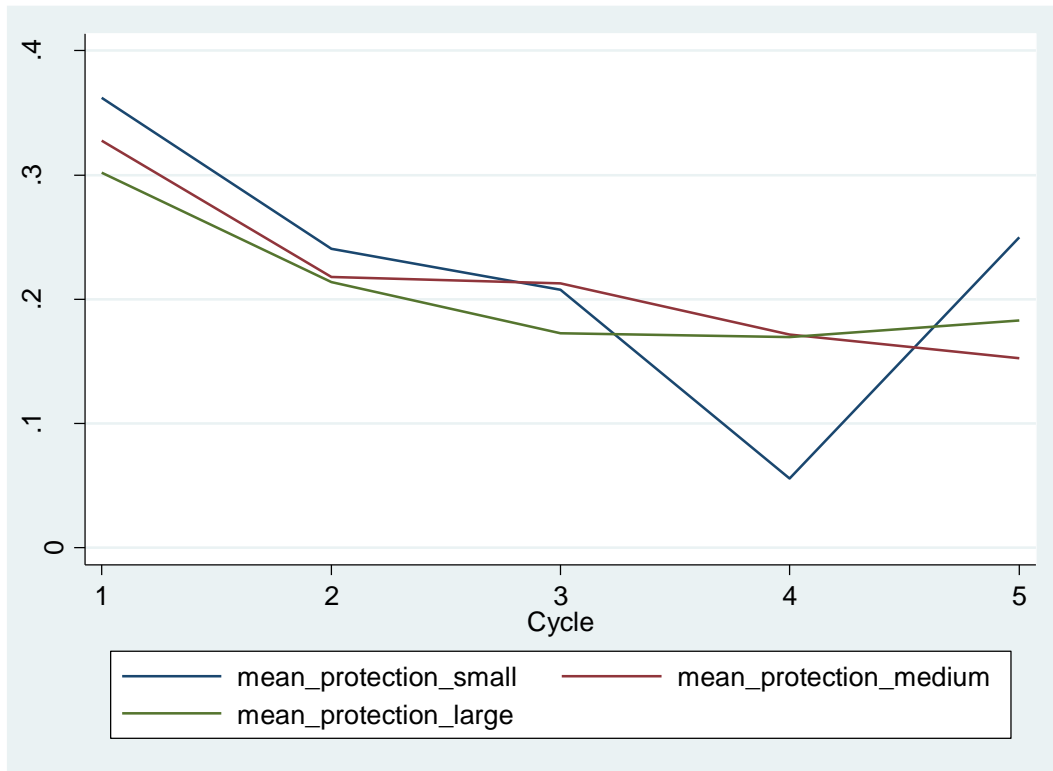
Figure 4 illustrates that factories become more compliant during each audit cycle suggesting that the auditing process is effective at decreasing noncompliance in Better Work factories. However, while rates of noncompliance fall over all five assessment cycles for medium and large buyers, decay emerges for small buyers at the fifth assessment as shown by the positive slope between cycle four and cycle five. There is a small sample size of small companies which may impact the shape of the small line. The regression tables show that large and medium sized buyers are more compliant regarding worker protection than small buyers. However, this graph suggests that there is not a relationship between buyer size and the rate of compliance improvement between factories that sell to different sized buyers until the fifth assessment.

Dialogue and Discipline Cluster

The dialogue and discipline cluster is a measure of how well workplace disputes are resolved in the supplier factories. Additionally, the cluster is a measure of harassment levels in the supplier factories.

The first round of regressions in this section measures the relationship between the independent variables measured and the dialogue and discipline compliance cluster. Again, this first round is limited to data collected in the first auditing cycle.

Table 12: Dialogue and Discipline Cluster Assessment Cycle 1

VARIABLES	Dialogue and Discipline Cluster	Dialogue and Discipline Cluster	Dialogue and Discipline Cluster	Dialogue and Discipline Cluster
Employee Hotline	0.0115	0.0439*	0.0433*	0.0437*
	-0.0267	-0.025	-0.0257	-0.0265
Sexual Harassment Policy	-0.0252	-0.0339	-0.0318	-0.0362
	-0.024	-0.0223	-0.0231	-0.0241
Buyer Any HR	-0.0610**	-0.0670***	-0.0651**	-0.0556**
	-0.0275	-0.0258	-0.0265	-0.0282
Buyer Makes Any List	0.0285	-0.0261	-0.0235	-0.0242
	-0.0283	-0.0263	-0.027	-0.0278
Buyer FLA	-0.0669**	-0.0195	-0.0186	0.0134
	-0.0274	-0.0254	-0.0259	-0.0316
Buyer SAC	0.0725*	0.0422	0.0473	0.0537
	-0.0402	-0.0377	-0.0387	-0.0399
Buyer California	0.0308*	0.0178	0.0232	0.00448
	-0.0176	-0.0177	-0.0194	-0.022
Buyer CSR Policy	0.0182	-0.000215	0.00365	0.00409
	-0.0206	-0.0195	-0.0222	-0.0224
Buyer Lists Suppliers	0.00181	0.00455	0.00166	-0.0132
	-0.0366	-0.0338	-0.0351	-0.0364
Buyer Privately Owned	-0.000913	0.00433	-0.014	-0.0139
	-0.0211	-0.0201	-0.0238	-0.0242
Buyer Region Asia		-0.0522	-0.0534	-0.0341
		-0.0495	-0.0762	-0.0808
Buyer Region Australia		-0.0192	-0.0262	-0.0348

		-0.0884	-0.101	-0.102
Buyer Region North America		-1.92E-02	-0.0352	-0.0258
		-0.0336	-0.0561	-0.0567
Buyer Region Middle East		-0.0619	-0.000642	-0.018
		-0.0733	-0.145	-0.146
Buyer Region Europe		-0.00193	-0.0221	-0.0177
		-0.0389	-0.0594	-0.06
Factory Country Haiti		-0.0185	-0.0167	-0.02
		-0.047	-0.0495	-0.0515
Factory Country Jordan		-0.00699	0.0103	0.00934
		-0.0423	-0.0452	-0.0458
Factory Country Indonesia		0.237***	0.239***	0.233***
		-0.0371	-0.0386	-0.0392
Factory Country Vietnam		0.0819**	0.0730*	0.0700*
		-0.036	-0.0374	-0.0379
Buyer Size Medium			-0.0484	-0.0643*
			-0.0368	-0.0382
Buyer Size Large			-0.0571	-0.0893**
			-0.0372	-0.0411
Buyer Type Brand				-0.0136
				-0.0207
Buyer Type Retailer				0.0472*
				-0.0277
Buyer Type Supply Chain Manager				-0.0168
				-0.0915
Buyer Type Brand Owner				0.0299
				-0.0335
Buyer Type Wholesaler				-0.00946
				-0.0507
Buyer Type Manufacturer				0.00338
				-0.0467
Buyer Type Factory				-0.0173
				-0.141
Constant	0.206***	0.132***	0.197***	0.196**
	-0.0187	-0.0448	-0.0732	-0.076
Observations	650	650	580	580
R-squared	0.024	0.206	0.207	0.213

The second round of regressions includes data from all audit cycles while controlling for the cycle.

Table 13: Dialogue and Discipline Cluster Assessment Cycles 1 to 11

VARIABLES	Dialogue and Discipline Cluster	Dialogue and Discipline Cluster	Dialogue and Discipline Cluster	Dialogue and Discipline Cluster
Employee Hotline	0.00775	0.0313**	0.0324**	0.0265*
	-0.0138	-0.013	-0.0132	-0.0138
Sexual Harassment Policy	-0.0143	-0.0231**	-0.0213*	-0.0236*
	-0.0124	-0.0117	-0.012	-0.0123
Buyer Any HR	-0.0270*	-0.0345**	-0.0299**	-0.0224
	-0.0145	-0.0137	-0.0141	-0.0152
Buyer Makes Any List	0.0403***	0.00589	0.00936	0.006
	-0.0152	-0.0145	-0.0147	-0.0157
Buyer FLA	-0.0604***	-0.0336**	-0.0293**	-0.00773
	-0.0139	-0.013	-0.0134	-0.0173
Buyer SAC	0.0311	0.00862	0.00815	0.0104
	-0.0218	-0.0206	-0.021	-0.0227
Buyer California	0.0238**	0.0102	0.0176*	0.000355
	-0.00923	-0.00928	-0.0101	-0.0122
Buyer CSR Policy	0.0245**	0.00393	0.0105	0.0108
	-0.0112	-0.0108	-0.012	-0.0123
Buyer Lists Suppliers	0.00823	0.0042	0.00444	-0.00677
	-0.0197	-0.0184	-0.019	-0.0211
Buyer Privately Owned	-0.00557	0.00346	-0.00708	-0.0076
	-0.0117	-0.0112	-0.0132	-0.0137
Buyer Region Asia		-0.0784**	-0.0535	-0.0233
		-0.0331	-0.0505	-0.0528
Buyer Region Australia		0.00805	0.0128	-0.0039
		-0.0593	-0.0672	-0.0675
Buyer Region North America		-0.0175	-0.0187	-0.00867
		-0.0209	-0.0366	-0.0369

Buyer Region Middle East		-0.0751	0.0443	0.027
		-0.0457	-0.126	-0.126
Buyer Region Europe		0.00523	-0.00295	0.00502
		-0.0241	-0.0388	-0.0389
Factory Country Haiti		-0.0302	-0.0312	-0.0264
		-0.0266	-0.0278	-0.0289
Factory Country Jordan		-0.0176	-0.0153	-0.0137
		-0.0245	-0.0257	-0.0259
Factory Country Indonesia		0.175***	0.173***	0.170***
		-0.0229	-0.0238	-0.024
Factory Country Vietnam		0.0391*	0.0334	0.0309
		-0.0223	-0.0232	-0.0233
Buyer Size Medium			-0.0281	-0.0371*
			-0.0197	-0.0211
Buyer Size Large			-0.0416**	-0.0614***
			-0.0208	-0.023
Buyer Type Brand				-0.0128
				-0.0112
Buyer Type Retailer				0.0237
				-0.0157
Buyer Type Supply Chain Manager				-0.00673
				-0.0548
Buyer Type Brand Owner				-0.00295
				-0.0178
Buyer Type Wholesaler				-0.0432
				-0.0268
Buyer Type Manufacturer				-0.0287
				-0.0246
Buyer Type Factory				0.0183
				-0.0578
Audit Cycle 2	-0.0748***	-0.0697***	-0.0709***	-0.0703***
	-0.0114	-0.0106	-0.0112	-0.0112
Audit Cycle 3	-0.0972***	-0.0861***	-0.0897***	-0.0888***
	-0.0128	-0.0119	-0.0125	-0.0125
Audit Cycle 4	-0.0796***	-0.0567***	-0.0557***	-0.0547***
	-0.0146	-0.0138	-0.0143	-0.0143
Audit Cycle 5	-0.0991***	-0.0612***	-0.0630***	-0.0615***
	-0.018	-0.017	-0.0174	-0.0174
Audit Cycle 6	-0.0928***	-0.0424*	-0.0482*	-0.0465*

	-0.0253	-0.0241	-0.0248	-0.0248
Audit Cycle 7	-0.0274	0.0562	0.0599	0.0623
	-0.0389	-0.038	-0.0392	-0.0392
Audit Cycle 8	-0.0929**	-0.00954	-0.0246	-0.0216
	-0.0407	-0.0399	-0.0413	-0.0413
Audit Cycle 9	-0.0309	0.0537	0.0426	0.0462
	-0.0427	-0.0416	-0.0432	-0.0432
Audit Cycle 10	-0.0926**	-0.00975	-0.0254	-0.0212
	-0.0439	-0.0426	-0.0443	-0.0443
Audit Cycle 11	-0.138*	-0.0628	-0.0459	-0.0511
	0	0	0	0
Constant	0.195***	0.167***	0.196***	0.207***
	-0.0121	-0.0285	-0.0458	-0.0471
Observations	1,849	1,849	1,702	1,702
R-squared	0.07	0.208	0.207	0.211

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

The results from Table 12 and Table 13 provide the strongest evidence to the existence of a set of buyer practices and values that permeate through all levels of the supply chain. The first significant relationship is demonstrated in Table 13 and shows that buyers with employee hotlines are correlated with lower levels of compliance regarding dialogue and discipline by 0.0265. This relationship holds for both sets of regressions, using data from the first cycle and using data from all cycles, and is significant at the P<.01 level.

The second relationship is a correlation between having an explicit sexual harassment policy and improved compliance in the dialogue and discipline compliance cluster. Table 13 shows the beta coefficient is -0.0236 and is significant at the P<.01 level. The relationship is not captured in Table 12, using data from only the first auditing cycle, but emerges when data from all 11 auditing cycles is included. Again, the dialogue and discipline compliance cluster

measures how well a factory resolves worker disputes and prevents harassment. Therefore, the result suggests that buyers that value preventing sexual harassment in their companies also value preventing harassment in their supplier factories.

The third significant relationship, shown in Table 12, is that buyers that display their human resources department on their website are correlated with lower levels of noncompliance regarding dialogue and discipline by a value of -0.0556. The correlation is significant at the $P<0.05$ level and is shown in all four specifications from the first round of auditing. However, the relationship is only shown as statistically significant in the first three specifications when data from all 11 audit cycles is used. Even though this correlation is not shown when all of the controls are included in Table 13, there is still evidence of a relationship between a buyer representing their HR department on their website and more compliant factories within the dialogue and discipline compliance cluster. This is because the coefficient Table 13's fourth column is similar to the coefficient in the third column and the P value for the fourth column is 0.139, which is only slightly out of the range of statistical significance.

Continuing, the fourth significant relationship is that there is a correlation between a buyer being a member of the Fair Labor Association and improved compliance in the dialogue and discipline cluster. It is significant at the $P<.05$ level with a correlation of -0.0293 when not controlling for buyer type in Table 13. The correlation is not significant once controls for buyer type are included suggesting that the relationship is weak and mostly captured by buyer type rather than FLA membership.

Fifth, Table 13 shows that there is a correlation between large buyers and improved compliance with dialogue and discipline, with a beta coefficient of -0.0614. This relationship is significant at the $P<.01$ level.

Sixth and last, Table 13 shows that there is again evidence that audits decrease noncompliance. All cycles are highly correlated with improved compliance compared to cycle one.

Below is a graph plotting the average compliance for each buyer size for cycles 1 to 5. This graph was generated from a balanced panel.

Figure 5: Average Noncompliance Rates Dialogue and Discipline Cluster by Buyer Size
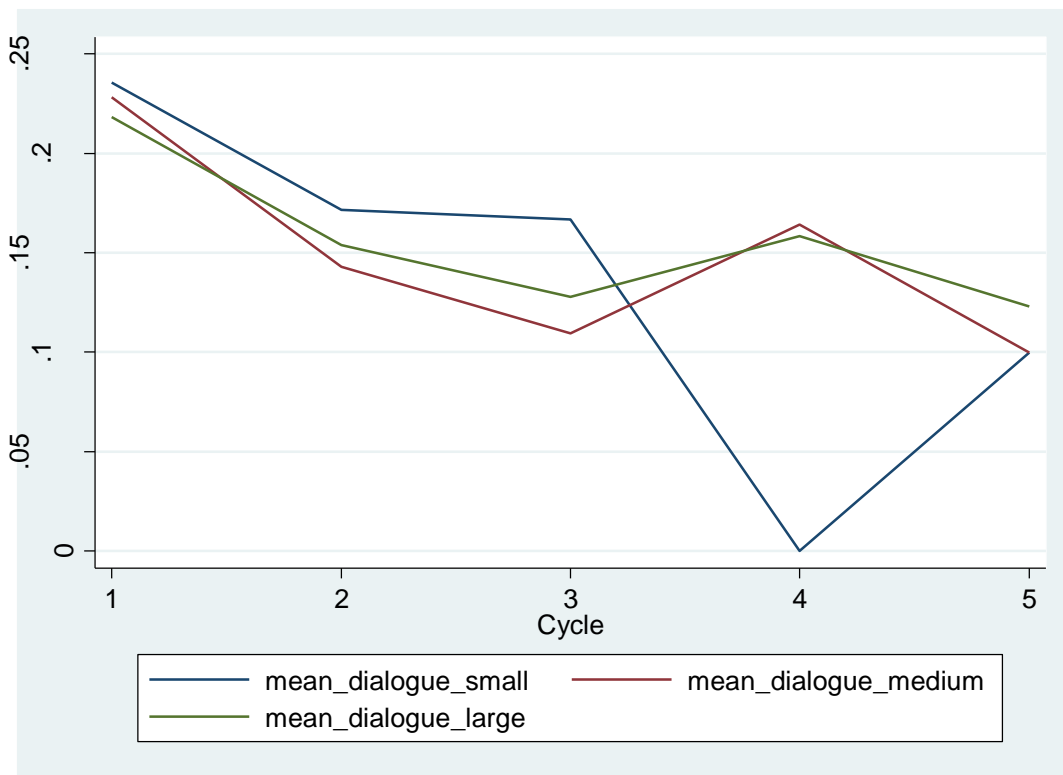
This graph again demonstrates that firms become more compliant after each auditing cycle. It is important to note that there is a small sample size for small buyers. It appears that small buyers are much more compliant in the fourth round than other buyers. Yet, large buyers are the most compliant when controlling for cycle. This graph again shows that buyer size does not affect the rate of decreased noncompliance amongst buyer firms because the lines follow a similar trajectory.

Welfare and Facilities Cluster

The following section regresses the explanatory variables collected against the welfare and facilities cluster. The welfare and facilities cluster measures whether the buyer is compliant with providing necessary facilities such as bathrooms and clean water for the workers.

The first round of regressions in this section measures the relationship between the independent variables collected and the welfare and facilities compliance cluster. Again, the first round is limited to data collected in the first auditing cycle. The welfare and facilities line of questioning was not asked to factories in Haiti. Therefore, Haitian factories are not included in these regressions.

Table 14: Welfare and Facilities Cluster Assessment Cycle 1

VARIABLES	Welfare and Facilities Cluster	Welfare and Facilities Cluster	Welfare and Facilities Cluster	Welfare and Facilities Cluster
Employee Hotline	0.027	0.0274	0.0246	0.0193
	-0.0295	-0.0298	-0.0305	-0.031
Sexual Harassment Policy	-0.0428	-0.0470*	-0.0428	-0.0357
	-0.0277	-0.0276	-0.0287	-0.03
Buyer Any HR	0.0584*	0.0679**	0.0656**	0.0569*
	-0.0304	-0.0309	-0.0315	-0.033
Buyer Makes Any List	0.0119	-0.000925	0.00669	-0.000804
	-0.032	-0.0321	-0.0328	-0.0333
Buyer FLA	0.0178	0.0395	0.0365	0.0157
	-0.0315	-0.0314	-0.0319	-0.0381
Buyer SAC	-0.0795*	-0.0902**	-0.0743	-0.0826*
	-0.0454	-0.0459	-0.047	-0.0478
Buyer California	0.0512***	0.0368*	0.0415*	0.0512**
	-0.0196	-0.0213	-0.0231	-0.026
Buyer CSR Policy	0.0152	0.00532	0.0137	0.0165
	-0.0232	-0.0235	-0.0266	-0.0266

Buyer Lists Suppliers	0.0412	0.0411	0.0246	0.033
	-0.0416	-0.0415	-0.043	-0.044
Buyer Privately Owned	0.0544**	0.0589**	0.0297	0.0265
	-0.0241	-0.0246	-0.0288	-0.029
Buyer Region Asia		-0.0251	-0.0584	-0.0777
		-0.0603	-0.0903	-0.101
Buyer Region Australia		0.0752	0.023	2.61E-02
		-0.103	-0.117	-0.118
Buyer Region North America		-0.0183	-0.0788	-0.0741
		-0.0403	-0.0654	-0.0657
Buyer Region Middle East		-0.0147	-0.0133	0.00496
		-0.0857	-0.168	-0.168
Buyer Region Europe		-0.0571	-0.122*	-0.11
		-0.0462	-0.0692	-0.0695
Factory Country Jordan		-0.190***	-0.190***	-0.190***
		-0.0494	-0.0525	-0.0528
Factory Country Indonesia		-0.0362	-0.0502	-0.0513
		-0.0433	-0.0448	-0.0453
Factory Country Vietnam		-0.115***	-0.131***	-0.132***
		-0.042	-0.0435	-0.0438
Buyer Size Medium			-0.026	0.00201
			-0.0464	-0.0483
Buyer Size Large			-0.0432	-0.0138
			-0.0463	-0.0513
Buyer Type Brand				0.0185
				-0.0249
Buyer Type Retailer				-0.0277
				-0.0324
Buyer Type Supply Chain Manager				-0.0758
				-0.107
Buyer Type Brand Owner				-0.0371
				-0.0401
Buyer Type Wholesaler				0.0212
				-0.0642
Buyer Type Manufacturer				-0.0807
				-0.0671
Buyer Type Factory				0.573**
				-0.237
Constant	0.252***	0.377***	0.483***	0.467***

	-0.0208	-0.0528	-0.0867	-0.0905
Observations	613	613	547	547
R-squared	0.03	0.085	0.083	0.102

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

The second round of regressions includes data from all audit cycles while controlling for assessment cycle.

Table 15: Welfare and Facilities Cluster Assessment Cycles 1 to 11

VARIABLES	Welfare and Facilities Cluster	Welfare and Facilities Cluster	Welfare and Facilities Cluster	Welfare and Facilities Cluster
Employee Hotline	0.00346	0.00655	0.00563	0.00498
	-0.0158	-0.0157	-0.0159	-0.0163
Sexual Harassment Policy	-0.0251	-0.0387**	-0.0322**	-0.027
	-0.0154	-0.0154	-0.0159	-0.0166
Buyer Any HR	0.0449***	0.0531***	0.0536***	0.0515***
	-0.017	-0.017	-0.0173	-0.0181
Buyer Makes Any List	0.00919	0.00391	0.0141	0.00985
	-0.0192	-0.0192	-0.0195	-0.0196
Buyer FLA	-0.00063	0.0159	0.0146	0.00905
	-0.0174	-0.0173	-0.0175	-0.0217
Buyer SAC	-0.0535**	-0.0698***	-0.0595**	-0.0657**
	-0.0263	-0.0262	-0.0267	-0.0273
Buyer California	0.0332***	0.0152	0.0242**	0.0299**
	-0.0107	-0.0113	-0.0122	-0.0147
Buyer CSR Policy	0.00548	-0.00862	0.00116	0.00203
	-0.0135	-0.0135	-0.015	-0.0151
Buyer Lists Suppliers	0.0600**	0.0648***	0.0556**	0.0576**
	-0.0243	-0.0239	-0.0245	-0.0253
Buyer Privately Owned	0.0535***	0.0570***	0.0412**	0.0409**
	-0.0143	-0.0146	-0.0168	-0.0171
Buyer Region Asia		-0.0312	-0.0547	-0.0338
		-0.0402	-0.0591	-0.0686

Buyer Region Australia		0.1	0.0754	0.0811
		-0.0685	-0.0767	-0.077
Buyer Region North America		0.0109	-0.0322	-0.0295
		-0.0266	-0.0423	-0.0425
Buyer Region Middle East		-0.0525	0.0255	0.04
		-0.053	-0.143	-0.143
Buyer Region Europe		-0.0333	-0.0914**	-0.0847*
		-0.0298	-0.0446	-0.0448
Factory Country Jordan		-0.160***	-0.154***	-0.156***
		-0.0282	-0.0295	-0.0297
Factory Country Indonesia		-0.0447*	-0.0477*	-0.0537*
		-0.0263	-0.0272	-0.0274
Factory Country Vietnam		-0.116***	-0.119***	-0.122***
		-0.0256	-0.0265	-0.0266
Buyer Size Medium			-0.0496*	-0.0358
			-0.0279	-0.0294
Buyer Size Large			-0.0554**	-0.0469
			-0.0282	-0.0313
Buyer Type Brand				0.023
				-0.0141
Buyer Type Retailer				0.0056
				-0.0182
Buyer Type Supply Chain Manager				-0.0655
				-0.0637
Buyer Type Brand Owner				-0.000894
				-0.022
Buyer Type Wholesaler				0.0301
				-0.0375
Buyer Type Manufacturer				-0.0735
				-0.0488
Buyer Type Factory				0.543***
				-0.204
Audit Cycle 2	-0.0638***	-0.0611***	-0.0628***	-0.0634***
	-0.0128	-0.0125	-0.0132	-0.0132
Audit Cycle 3	-0.0987***	-0.0919***	-0.0932***	-0.0947***
	-0.0144	-0.0141	-0.0148	-0.0148
Audit Cycle 4	-0.127***	-0.112***	-0.115***	-0.116***
	-0.0168	-0.0166	-0.0172	-0.0172
Audit Cycle 5	-0.168***	-0.145***	-0.148***	-0.150***

	-0.0214	-0.0213	-0.0216	-0.0215
Audit Cycle 6	-0.150***	-0.120***	-0.129***	-0.133***
	-0.0346	-0.0342	-0.0349	-0.0348
Audit Cycle 7	-0.104	-0.0444	-0.0542	-0.044
	0	0	0	0
Constant	0.261***	0.372***	0.454***	0.429***
	-0.0138	-0.0338	-0.0545	-0.0565
Observations	1,607	1,607	1,477	1,477
R-squared	0.087	0.135	0.137	0.146

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

The results from these rounds of regressions include some surprising results. To start, when data from all cycles is included, there is a correlation between the presence of a buyer's human resources department on their website and lower levels of supplier compliance regarding welfare and facilities. Table 15 shows that the beta coefficient for this relationship is 0.0515 and is significant at a value of P<.01. This is the opposite of the results regarding human resources found in the dialogue and discipline compliance cluster.

Second, Table 15 suggests that if a buyer is a member of the Sustainable Apparel Coalition then their suppliers have lower levels of noncompliance regarding welfare and facilities compared to non-SAC members. With a coefficient of -0.0657 and a significance level of P<.05 this is one of the larger significant relationships identified by the regression analysis.

Third, there is evidence in Table 15 to suggest that if a buyer states they are compliant with the California Transparency in Supply Chains Act of 2010 (CTSCA) their suppliers have higher levels of noncompliance regarding welfare and facilities. The regression coefficient for this relationship is 0.0299 and is significant at the P<.05 level.

Fourth, in the data set using all cycles there is a correlation between a buyer listing all their suppliers and lower compliance regarding welfare and facilities, with a value of 0.0576 and

a significance of P<.05. This result is due to the fact that listing suppliers is highly correlated

with membership in the Sustainable Apparel Coalition (SAC), with a beta coefficient of 0.8667 (

Table 9). Most of the companies that list their suppliers, but are not in the SAC, do not make any other CSR efforts measured in the data.

Fifth, Table 15 suggests that privately owned buyers are correlated with less compliant factories in the welfare and facilities cluster with a beta coefficient of 0.0409 and a significance level of $P<.05$.

Sixth, Table 15 suggests that if the buyer type was labeled as a factory there is a correlation of 0.543 with less compliant factories with a significance level of $P<.01$. However, it is important to note that only 5 of the 1,772 audits that measured the welfare and facilities cluster took place in factories that listed another factory as their primary buyer. Thus, the sample size is too small to draw conclusions.

Seventh and last, compliance improves with each collection cycle. A balanced panel was created to demonstrate how compliance improves over the first five audit cycles by buyer size. It is important to note that the sample size for small buyers is in the single digits for cycles 3, 4, and 5.

Figure 6: Average Noncompliance Rates Welfare and Facilities Cluster by Buyer Size
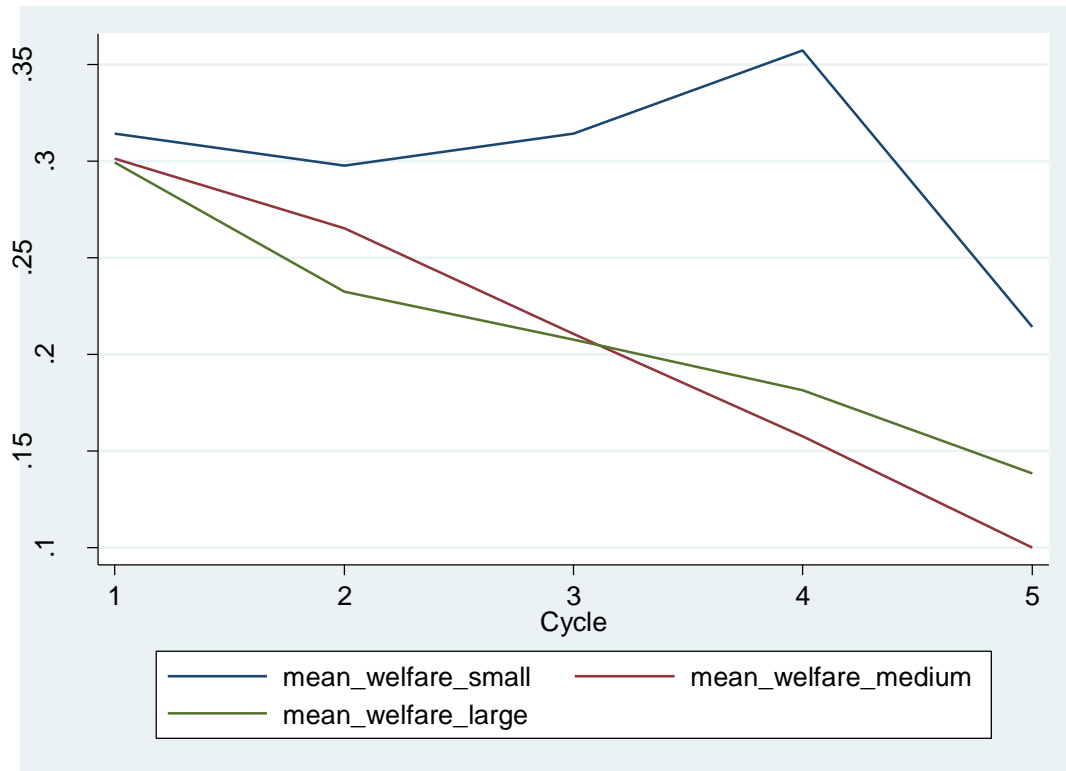
Again, the downward sloping lines on this graph for medium and large buyers demonstrate that, on average, factories become more compliant after each audit. Additionally, the graph suggests that factories with small buyers are less likely to improve than factories with medium or large sized buyers. However, there is a small sample size for factories with small buyers which may be affecting the graph shape.

Worker Environment Cluster

The final compliance cluster analyzed was the worker environment cluster, which measures whether factories are kept at an appropriate temperature and have appropriate levels of noise, light, ventilation, and cleanliness.

Again, the first round of regressions is limited to data collected in the first auditing cycle. Unfortunately, neither Haiti nor Indonesia received audit questions regarding worker environment.

Table 16: Worker Environment Cluster Assessment Cycle 1

VARIABLES	Worker Environment Cluster	Worker Environment Cluster	Worker Environment Cluster	Worker Environment Cluster
Employee Hotline	-0.00929	0.0187	0.0119	0.00223
	-0.0278	-0.0272	-0.0272	-0.0278
Sexual Harassment Policy	-0.0225	-0.0359	-0.0383	-0.0353
	-0.0258	-0.0249	-0.0254	-0.0268
Buyer Any HR	0.0128	0.00529	0.00521	-0.00141
	-0.0285	-0.028	-0.028	-0.0294
Buyer Makes Any List	0.03	-0.00799	-0.00768	-0.015
	-0.0297	-0.0288	-0.0289	-0.0295
Buyer FLA	-0.0241	0.0105	0.00495	-0.0151
	-0.0302	-0.0293	-0.0291	-0.0347
Buyer SAC	-0.00016	-0.00223	-0.00414	-0.00472
	-0.0437	-0.0427	-0.0428	-0.0438
Buyer California	0.0244	0.024	0.0193	0.028
	-0.0183	-0.0193	-0.0205	-0.0232
Buyer CSR Policy	0.00121	-7.66E-03	-0.00548	-0.00257
	-0.0215	-0.0211	-0.0234	-0.0235
Buyer Lists Suppliers	0.0156	0.00585	0.0105	0.0178
	-0.04	-0.0387	-0.0392	-0.0401
Buyer Privately Owned	0.0147	0.0153	0.0159	0.0132
	-0.0224	-0.0222	-0.0254	-0.0257
Buyer Region Asia		0.00104	-0.023	-0.00362
		-0.0536	-0.0782	-0.0882
Buyer Region Australia		0.0155	0.00808	-0.00223
		-0.0917	-0.102	-0.102
Buyer Region North America		-0.0277	-0.0329	-0.0316
		-0.0362	-0.0568	-0.0574
Buyer Region Middle East		0.0406	0.219	0.22
		-0.0761	-0.145	-0.146

Buyer Region Europe		0.00306	-0.00285	0.00673
		-0.0413	-0.0602	-0.0607
Factory Country Jordan		-0.179***	-0.144***	-0.140***
		-0.0301	-0.0332	-0.0335
Factory Country Vietnam		-0.129***	-0.117***	-0.119***
		-0.0178	-0.0185	-0.0188
Buyer Size Medium			0.0528	0.0698
			-0.0411	-0.043
Buyer Size Large			0.0568	0.0702
			-0.0412	-0.046
Buyer Type Brand				0.000118
				-0.0219
Buyer Type Retailer				-0.04
				-0.0286
Buyer Type Supply Chain Manager				-0.0363
				-0.0936
Buyer Type Brand Owner				-0.0707**
				-0.0355
Buyer Type Wholesaler				-0.0677
				-0.059
Buyer Type Manufacturer				-0.0575
				-0.0608
Buyer Type Factory				0.066
				-0.207
Constant	0.152***	0.270***	0.219***	0.244***
	-0.0193	-0.0331	-0.0677	-0.0727
Observations	582	582	517	517
R-squared	0.008	0.116	0.113	0.125

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

The final round of regressions include data from all available cycles while controlling for cycle.

Table 17: Worker Environment Cluster Assessment Cycles 1 to 11

VARIABLES	Worker Environment Cluster	Worker Environment Cluster	Worker Environment Cluster	Worker Environment Cluster
Employee Hotline	-0.0106	0.00885	0.00763	0.00844
	-0.0147	-0.0143	-0.0144	-0.0147
Sexual Harassment Policy	0.0022	-0.00974	-0.00895	-0.00689
	-0.0142	-0.0139	-0.0143	-0.015
Buyer Any HR	0.0142	0.015	0.0164	0.00677
	-0.0158	-0.0154	-0.0155	-0.0163
Buyer Makes Any List	0.0292*	0.00312	0.00524	0.00433
	-0.0176	-0.0172	-0.0174	-0.0176
Buyer FLA	-0.025	-0.00132	-0.00367	-0.0186
	-0.0164	-0.0159	-0.016	-0.0199
Buyer SAC	0.0114	-0.00317	-0.00342	-0.00412
	-0.0249	-0.0242	-0.0245	-0.0251
Buyer California	0.0163	0.0104	0.0113	0.0225*
	-0.00993	-0.0103	-0.011	-0.0133
Buyer CSR Policy	-0.00133	-0.0136	-0.0103	-0.0118
	-0.0124	-0.0122	-0.0135	-0.0136
Buyer Lists Suppliers	-0.00355	-0.00394	-0.00336	0.00546
	-0.023	-0.0221	-0.0225	-0.0233
Buyer Privately Owned	-0.00524	0.000847	-0.00719	-0.0031
	-0.0133	-0.0132	-0.0152	-0.0155
Buyer Region Asia		0.00257	0.0131	0.00866
		-0.036	-0.0524	-0.0615
Buyer Region Australia		0.0276	0.0276	0.0324
		-0.0613	-0.0681	-0.0685
Buyer Region North America		-0.00968	-0.00468	-0.00771
		-0.0241	-0.0375	-0.0379
Buyer Region Middle East		0.0407	0.267**	0.274**
		-0.0475	-0.127	-0.128
Buyer Region Europe		-0.00138	0.00704	0.00621
		-0.0269	-0.0397	-0.0399
Factory Country Jordan		-0.150***	-0.132***	-0.130***
		-0.0151	-0.016	-0.0163
Factory Country Vietnam		-0.111***	-0.102***	-0.103***
		-0.0102	-0.0105	-0.0106

Buyer Size Medium			0.0199	0.0391
			-0.0251	-0.0266
Buyer Size Large			0.00661	0.0304
			-0.0256	-0.0285
Buyer Type Brand				0.0128
				-0.0127
Buyer Type Retailer				-0.0184
				-0.0164
Buyer Type Supply Chain Manager				0.0176
				-0.0569
Buyer Type Brand Owner				-0.0385*
				-0.0198
Buyer Type Wholesaler				0.0171
				-0.0342
Buyer Type Manufacturer				-0.0212
				-0.0447
Buyer Type Factory				0.0859
				-0.181
Audit Cycle 2	-0.0356***	-0.0323***	-0.0305**	-0.0315***
	-0.012	-0.0115	-0.012	-0.012
Audit Cycle 3	-0.0465***	-0.0382***	-0.0365***	-0.0379***
	-0.0134	-0.0129	-0.0134	-0.0135
Audit Cycle 4	-0.0787***	-0.0614***	-0.0616***	-0.0626***
	-0.0154	-0.0149	-0.0154	-0.0154
Audit Cycle 5	-0.106***	-0.0781***	-0.0797***	-0.0818***
	-0.0196	-0.019	-0.0192	-0.0192
Audit Cycle 6	-0.0786**	-0.0493	-0.0508	-0.0529*
	-0.0316	-0.0305	-0.031	-0.031
Audit Cycle 7	-0.156	-0.0846	-0.0943	-0.0753
	0	0	0	0
Constant	0.150***	0.247***	0.223***	0.211***
	-0.0128	-0.0228	-0.0435	-0.0462
Observations	1,542	1,542	1,415	1,415
R-squared	0.039	0.128	0.123	0.128

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

In these regressions using the worker welfare compliance cluster, there were fewer

statistically significant findings than in the other three compliance clusters. This may be the result of fewer data points as there was not data available for factories in Haiti nor in Indonesia. However, there were still three significant correlations.

First, in the data set using data from all available cycles, there is evidence that buyers who state on their web page compliancy with the California Transparency in Supply Chains Act (CTSCA) of 2010 are correlated with less compliant factories regarding worker welfare. In Table 17, the coefficient of this relationship is 0.0225 and is significant at the $P<0.01$ level.

Second, there is a correlation between a buyer being a brand owner and reduced noncompliance in the worker welfare cluster. The beta coefficient is -0.0385 and is significant at the $P<0.1$ level as shown in Table 17.

Third and finally, we again see in Table 17 that factories become more compliant in later audit cycles.

There is no significant correlation between buyer size and compliance. However, the following graph is included to demonstrate the relationship between buyer size and average compliance during the first five audit cycles. Figure 7: Average Noncompliance Rates Worker Environment Cluster by Buyer Size was made using a balanced panel.

Figure 7: Average Noncompliance Rates Worker Environment Cluster by Buyer Size
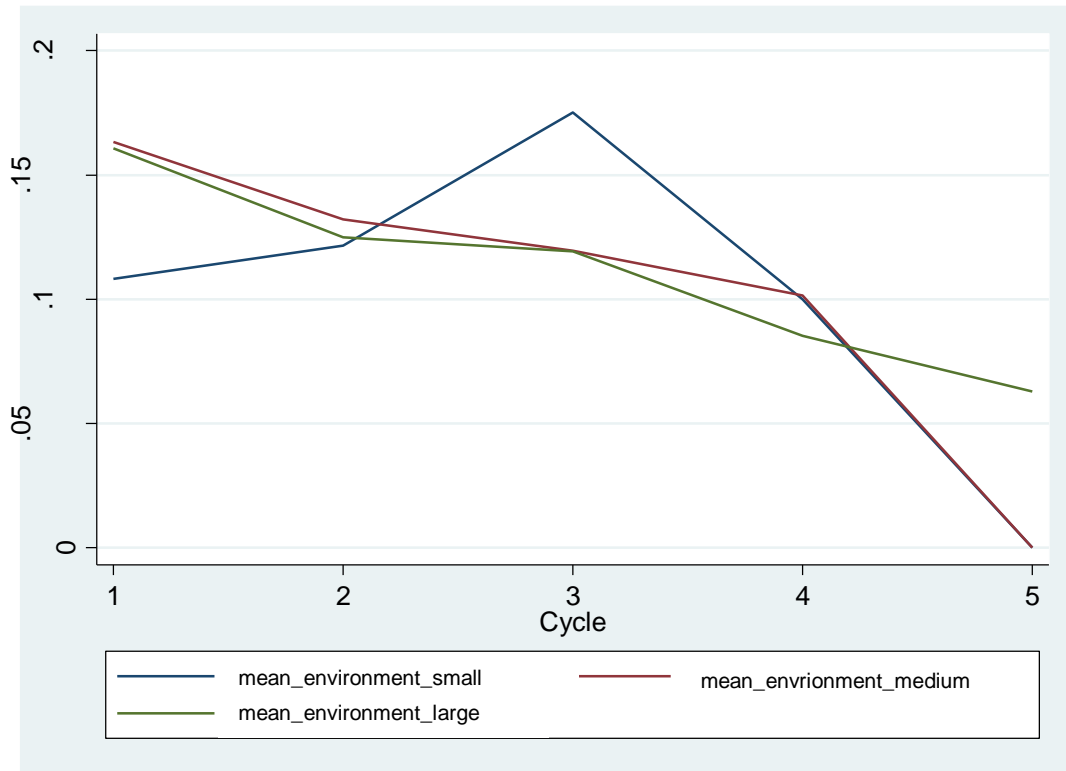
Again, Figure 7 demonstrates that factories become more compliant during each compliance cycle, although factories with small buyers have a more volatile trajectory. The volatility in the small buyer line may be due to a smaller sample size. The graph suggests that buyer size does not affect how factories respond to audits.

Chapter VI: Discussion

Chapter VI ties together the results of all the regressions in the previous chapter. Interpretations of the results are provided based on the author's research of the Better Work program factories and the relevant literature. Table 18 below outlines the key findings from each compliance cluster and is a summary of all the coefficients highlighted in the results chapter. Again, as the compliance clusters are measured with 0 being no evidence of noncompliance on

all questions and 1 being non-compliant on all questions, negative coefficients indicate that the

buyer characteristic is correlated with decreased noncompliance and vice versa.

Table 18: Summary of Highlighted Results

	Worker Protection Cluster	Dialogue and Discipline Cluster	Welfare and Facilities Cluster	Worker Environment Cluster
Buyer Any HR		-0.0299**	0.0515***	
Buyer California			0.0299**	0.0225*
Buyer FLA		-0.0293**		
Buyer Lists Suppliers			0.0576**	
Buyer Region Europe	-0.115***			
Buyer Region North America	-0.106***			
Buyer SAC			-0.0657**	
Buyer Size Large	-0.0581**	-0.0614***		
Buyer Size Medium	-0.0595**	-0.0371*		
Buyer Type Brand	0.0227*			
Buyer Type Brand Owner	0.0336*			-0.0385*
Buyer Type Wholesaler	-0.0590*			
Employee Hotline		0.0265*		
Privately Owned			0.0409**	
Sexual Harassment Policy		-0.0236*		

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

First, the number of significant relationships in the data suggest that a relationship exists

between companies and their supplier factories. While apparel industry supply chains have

become increasingly complex throughout the past 40 years, there is still a connection between

buyers and factories.

Furthermore, the data show that firms that treat their domestic workers well also have lower levels of noncompliance in their factories while firms that treat their domestic workers poorly have higher levels of noncompliance in their supplier factories.

Firms that have an explicit sexual harassment policy have lower levels of noncompliance in the dialogue and discipline cluster. As the dialogue and discipline cluster measures the levels of harassment and workplace dispute resolution mechanisms, this result suggests that firms who have policies to improve working conditions for their domestic workers also have better working conditions for their foreign workers.

A similar result is found in the data regarding buyers implementing an employee hotline. Buyers that have an employee hotline are correlated with worse compliance in the dialogue and discipline cluster with a beta coefficient of 0.0265. Employee hotlines may signal that a domestic firm treats their workers poorly. Hotlines are expensive as a firm needs to hire people to operate them and respond to complaints. Buyers who treat their workers well would have less need of installing a hotline. This theory is backed by the fact that having an employee hotline is negatively correlated with a buyer being listed on one of the top places to work lists in

Table 9. These two results regarding the sexual harassment policy and the employee hotline confirm the hypothesis that companies who treat their workers well at home also have better worker treatment in their supplier factories.

Firms have come under pressure from consumers in the past to improve the working conditions in their supply chain. As a result, firms attempt to signal to consumers that they have good factories. The data suggest that these signals do not actually have any impact on working conditions.

First, buyers who state on their website that they have followed the guidelines of the California Transparency in Supply Chains Act of 2010 (CTSCA) are correlated with lower levels of compliance in their vendors, with coefficients of 0.0299 and 0.0225 for the welfare and facilities cluster and the worker environment cluster respectively. As stated in the data chapter of this thesis, the CTSCA is a rather empty law. It does not require companies to make any changes along their supply chain, but rather requires buyers to state on their website the efforts they are taking to "eradicate slavery and human trafficking from [their] direct supply chain" (Harris 2015, i). Therefore, while firms state on their website that they are compliant with the CTSCA, there is little evidence of substantive improvements in their policies regarding human trafficking and slavery, and lower levels of compliance in their supplier factories (Birkey et al. 2016).

Some firms only have a CSR statement saying they are compliant with the CTSCA while other firms have an individualized CSR policy stated on their website to signal to consumers that they have good factories. Yet, the data show that a buyer having an individualized CSR policy is not significantly correlated with any compliance cluster, meaning that a buyer stating that they have a CSR policy is an empty gesture that does not signal that that buyers' suppliers are any

more compliant than their competitor's suppliers who do not state publicly that they have a CSR policy.

The final CSR signal measured in this paper is buyers disclosing their supply chains on their websites. The data show that buyers publicly listing suppliers has a positive correlation of 0.0576 with the welfare and facilities cluster and no impact on any other compliance clusters. As shown in

Table 9, listing suppliers is highly correlated with membership in the SAC which makes sense as the SAC prioritizes transparency. Therefore, the positive correlation is due to the handful of buyers who are not in the SAC but do list their suppliers. The data show that many of these buyers may not do anything else, such as having a sexual harassment policy, to improve working conditions along their supply chains. Therefore, a buyer listing their suppliers does not tell us anything about the working conditions in their factories.

Another result of the regression analysis is that medium and large buyers are correlated with lower noncompliance in the Worker Protection and Dialogue and Discipline clusters. Generally, large firms are villainized in public discussions regarding CSR policies. They are seen as taking advantage of factory workers who have little ability to improve their poor working conditions. While this thesis does not state that large firms' suppliers have good working conditions, the data show that larger buyers have fewer findings of noncompliance in their supplier factories than smaller buyers.

Next, the most conclusive result of the data analysis is that auditing is effective in reducing levels of noncompliance. Each round of auditing decreases noncompliance in all four compliance clusters, confirming that the work done by the ILO's Better Work project is effective in decreasing noncompliance in member factories. Moreover, the result runs contrary to Locke's research stating auditing alone is ineffective in improving working conditions (Locke 2015).

In addition to the four key takeaways listed above, there were several other interesting results. Within the human resources buyer characteristic, buyers that highlight the work done by their HR department on their website are correlated with decreased noncompliance in the dialogue and discipline cluster but increased noncompliance in the welfare and facilities cluster, with coefficients of -0.0299 and 0.0515 respectively.

A surprising result is the lack of correlation between the compliance clusters and the buyers being a member of the Fair Labor Association and the Sustainable Apparel Coalition. Both the FLA and SAC are only correlated with decreased noncompliance in one cluster suggesting that a buyer being a member of the FLA and/or the SAC has only a positive impact on some aspects of worker conditions. However, as

Table 9 demonstrates, these independent variables are highly correlated with other independent variables meaning collinearity may be driving these results.

Next, the results show that privately owned businesses are correlated with lower compliance in the welfare and facilities cluster with a coefficient of 0.0409.

Just as interesting as the variables that do have correlations with one or more compliance clusters are the variables that are not correlated with any compliance clusters. First, buyers that are listed on the forbes.com's, fortune.com's, or glassdoor.com's best places to work lists are not correlated with any compliance cluster. If the hypothesis that firms that treat their domestic workers well have good foreign factory conditions is correct, one would expect to find a correlation between making a best places to work list and decreased noncompliance in all clusters. The lack of correlation for this buyer characteristic suggests that there may not be a strong relationship directly tying worker conditions for domestic and foreign workers, there may be collinearity, or there may be a problem with the data regarding best places to work.

Each of the buyer characteristics listed in this chapter are correlated slightly with one or more of the compliance categories. However, the coefficients are not large. On average the beta coefficients are between (-0.07 to 0.03). The compliance clusters are measured on a 0 to 1 scale with 0 being compliant and 1 being non-compliant. Thus, no single buyer characteristic is solely responsible for determining factory compliance. Rather, compliance is determined by a range of factors, only some of which were captured in the regression analysis and many of which may not be affected by buyer characteristics. For example, in the dialogue and discipline cluster, the sum of the coefficients for the buyer being large, a member of the FLA, emphasizing its HR department on its website, and having a sexual harassment policy is -0.1442. These factors

together could contribute to a significant improvement in the compliance regarding worker conflict resolution and preventing harassment.

Chapter VII: Conclusion

As described in the literature review, companies that treat their workers well have more productive workers. Good worker treatment includes better pay, increased benefits, providing stock options, or any other program that increases worker satisfaction. Satisfied workers identify with the company and are more willing to work hard to help that company succeed.

However, the literature does not say whether the profits gained from increased productivity outweigh the costs of good worker treatment. Some companies take the approach that treating workers well in order to increase productivity is too costly. These firms may not need productive workers or may believe that hiring low-paid workers is more cost effective than trying to improve worker productivity. In contrast, other firms use a management strategy of treating workers well because they believe that the cost of increasing worker satisfaction is outweighed by increased productivity. This thesis examines the hypothesis that companies that have a strategy of good worker treatment also have better working conditions in their supplier factories.

Through an analysis of two datasets describing the working conditions of supplier factory workers compared to their domestic counterparts, five results have emerged. First, despite increasingly complex and nontransparent multinational supply chains in the apparel industry, a positive relationship exists between buyer corporate policies and factory working conditions. Second, buyers who demonstrate that they treat their domestic workers well, for example by having a sexual harassment policy, have lower levels of noncompliance in their supplier

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factories. Whereas, firms that indicate they have poor working conditions for their domestic workers, for example needing an employee hotline, are more likely to purchase from less compliant factories. Third, the data show that company signals of good factory working conditions, such as CSR policies and supply chain disclosure, do not have a positive impact on factory conditions and in some cases are correlated with higher levels of noncompliance. Fourth, large companies have more compliant supplier factories than small companies. Finally, audits are effective in decreasing rates of noncompliance in factories.

As demonstrated in the literature review, worker conditions and treatment are linked to worker efficiency. Therefore, in addition to there being a relationship between buyers treating their domestic workers well and improved compliance among suppliers, there may also be a relationship between the productivity of buyers' domestic workers and the productivity of supplier factory workers. Theoretically, firms may have an incentive to improve the working conditions in their supplier factories because it could lead to greater productivity. However, firms may be reluctant to do so if managers believe that the gains resulting from improved profitability do not offset the costs of improving working conditions. Additionally, firms may not want to invest in increased compliance because it is a risky investment. Factories can switch buyers or go out of business. At the same time, buyers do not want to outright buy factories and then invest in increased compliance because they would have to give up flexibility in their supply chain.

The research conducted in this thesis also has implications for responsible consumerism. Consumers may assume that small or boutique clothing companies have better sourcing practices than their larger counterparts. However, evidence from the regressions suggest that large firms, on average, have more compliant factories than smaller firms that produce clothing in Vietnam,

Indonesia, Nicaragua, Jordan, or Haiti. The results do not suggest that the factory conditions in large company suppliers are good, but rather that they are better than the conditions in small company suppliers.

Furthermore, the relationship between how firms treat their domestic workers and the conditions of their supplier factory workers allow consumers to gain insights into how foreign factory workers are treated. To get an estimate of how a clothing company's supplier factory workers are treated in comparison to a competitor's factory workers, consumers can compare the working conditions of the firms' domestic workers. Finally, the results from this study demonstrate to consumers that they should ignore company policies regarding their treatment of foreign factory workers, such as company CSR policies and supply chain disclosures. These policies are not correlated with improved compliance.

There are several ways to expand upon the research conducted in this thesis. First, it would be beneficial to find a better measure of worker treatment of the domestic workers. This thesis is based on publicly available information on buyers' websites. However, access to internal memos, worker surveys, and private company data including unionization rates, wage theft rates, wages, benefits, harassment rates, and worker conflict reports could provide a better measure of how buyers treat their domestic workers.

Second, research into the relationship between buyer worker treatment and supplier worker treatment in other types of international supply chains, including automobiles, agricultural products, and technology, would provide a better picture of the systems used to treat workers. Examining other industries would also allow researchers to compare how different types of supply chains effect the relationship between foreign and domestic working conditions.

Third, the research conducted in this thesis could be supplemented by investigative journalism into the inner workings of how and why executives at buyer firms make decisions regarding how they treat their domestic workers and the policies they implement to improve working conditions in their supplier factories.

Finally, this thesis does not analyze empirically how increased compliance is associated with increased productivity. Previous literature, outlined in the literature chapter, suggests that there should be a positive relationship between improved working conditions and increased productivity. A paper comparing the productivity of firms' domestic and foreign workforces would further the line of investigation conducted in this thesis.

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