Exporting, Firm-specific Institutions, and Labor Conditions: Evidence from Garment Industry Workers

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How do workers perceive working conditions in jobs differently integrated into global markets? Answering this question provides a novel way to examine the link between trade and labor standards. This paper develops hypotheses about worker perceptions, drawing on contrasting mechanisms underpinning theories of 'trading up,' which emphasize either the role of private regulation or economic upgrading. It tests these hypotheses using a survey experiment conducted on a sample of 2,500 garment workers in Morocco. In the absence of institutions that monitor labor compliance, workers expected no difference in working conditions between factories that export to high-standards markets and domestically oriented producers. The presence of private monitoring institutions caused expectations of working conditions in export factories to improve, making them comparable to factories monitored by government regulators. These results contribute to our understanding of how global trade shapes worker welfare by highlighting the role of firm-specific institutions and how workers perceive jobs in firms linked in different ways to global markets.

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Recent scholarship in international political economy has advanced longstanding debates about trade and labor conditions. Many studies argue that global integration can result in 'trading up,' triggering processes that improve working standards through economic upgrading and firm-specific institutions that enhance compliance with international labor norms (Cao, Greenhill, and Prakash 2013, Distelhorst and Locke 2018, Greenhill, Mosley, and Prakash 2009, Prakash and Potoski 2006). This argument contrasts with the view that trade instead drives a 'race to the bottom' in labor standards (Davies and Vadlamannati 2013, Anner 2019, Messerschmidt and Janz 2023, Blanton and Blanton 2016, Blanton and Peksen 2017, Wang 2018).

With few exceptions (Ardanaz, Murillo, and Pinto 2013, Kabeer, Huq, and Munshi 2020), the longstanding debate about trade and labor conditions in the developing world has not interrogated the perceptions of workers. This is surprising because individual perceptions of trade and institutions have been central to international political economy research for decades (Baker 2005, Mansfield and Mutz 2009, Rho and Tomz 2017). Developing country workers perceptions about trade are important to understand. First, workers' subjective views are significant because they are the purported beneficiaries or victims in theories linking trade to labor conditions. If their perceptions deviate from the expectations of a well-regarded theory, it raises questions about the ability of the theory to explain outcomes that workers actually care about. Second, workers are well-positioned and have strong incentives to gain informed beliefs about the labor market in which they work. Those beliefs, including how trade and related institutions shape their job opportunities, have political implications. Unmet expectations can trigger activism and collective mobilization around trade-related issues (Brookes 2018, Robertson and Teitelbaum 2011, Anner 2018, Caraway and Ford 2020).

This study investigates how trade and trade-linked institutions of labor governance shape worker perceptions about the quality of jobs. Theories about the mechanisms through which trade influences labor standards lead to differing expectations regarding worker perceptions. One potential mechanism linking trade and labor conditions holds that participation in global supply chains directly leads to 'social upgrading' through purely economic processes. Producing to the exacting demands of foreign buyers may initiate skill and capital upgrading, which can result in higher

price markups, increased wages, and the transfer of productivity-enhancing management systems that benefit workers (Melitz and Ottaviano 2008, Verhoogen 2008, Malesky and Mosley 2018, Distelhorst, Hainmueller, and Locke 2017, Frías et al. 2022). This mechanism, the 'export market' hypothesis, predicts that workers will perceive job quality in exporting firms as superior to those in the domestic sector.

Another set of theories focuses on the role of firm-specific transnational institutions that now abound in contemporary trading relationships (Prakash and Potoski 2006, Potoski and Prakash 2009, Lim and Prakash 2017). Importing firms, responding to social and political pressures, often require their trading partners to adhere to international standards for decent working conditions (Bartley and Child 2014). If these private regulatory efforts are successful, this should lead workers to perceive superior job quality in these factories. However, research on the effects of these private institutions is mixed, with prominent scholarship expressing skepticism about their impact on working people (Bartley 2018, Locke 2013, Kuruvilla 2021, Dietz, Grabs, and Chong 2021). These findings suggest that workers may perceive jobs in firms governed by these private institutions as no better than in firms that are not.

To understand how different forms of global integration and governance shape worker perceptions of job opportunities, we analyze the views of garment industry workers in Morocco. Using data gathered in semi-structured interviews with workers and managers, we designed a pre-registered survey experiment involving 2,500 workers from 50 garment-exporting factories. In face-to-face surveys, respondents evaluated hypothetical job opportunities from firms that varied randomly in both their destination market—either domestic or export—and their exposure to regulatory institutions, which could be private, state, or nonexistent. Respondents then reported their expectations on nine dimensions of job quality related to wages, compliance with labor standards, and work intensity.

Contrary to the export markets hypothesis, workers expected no difference in job quality between factories producing for the domestic market and those exporting to a country with strong labor protections. However, workers placed value on the presence of regulatory institutions. They had significantly higher expectations for job quality in factories subject to regulation by both public

and private actors. The effects of private labor standards audits by foreign buyers were similar in magnitude to the effects of inspections by state regulators. Respondent expectations about specific working conditions in factories under private regulation align with prior findings on which types of standards private regulation is more or less effective at improving (Anner 2012, Locke 2013).

Our research makes a number of contributions to the international political economy literature. First, it introduces evidence largely absent in the literature on trade and labor conditions: worker perceptions. We use this evidence to interrogate theorized mechanisms of trading up and find that the 'export market' mechanism does not independently influence workers' evaluations of labor standards. Instead, their perceptions are influenced by the presence of monitoring institutions—whether state-led or private.

Second, our findings about the importance workers place on monitoring institutions contribute to scholarship on private governance in the global economy. This finding challenges the view that private regulation is largely symbolic and intended to placate international audiences without being meaningful to workers (Kuruvilla 2021, Appelbaum and Lichtenstein 2016, LeBaron 2021). Our study finds that workers view private regulation as playing a significant role in ensuring better employment conditions.

Finally, by examining workers' views of jobs in firms differently integrated into global markets, our research contributes to broader debates on the politics of globalization. Worker perceptions of the quality of jobs linked to trade are likely to affect their trade preferences. Prior research has demonstrated that numerous non-economic variables affect trade policy preferences, including political parties (Hicks, Milner, and Tingley 2014), education (Hainmueller and Hiscox 2006), and the presence of profit-sharing institutions (Dean 2015). In addition to these factors, our findings indicate that the presence of private and public governance institutions shapes workers' views of the jobs they can expect in the labor market. Workers tend to perceive better opportunities and, thus, may be more supportive of trade when exporters are regulated by such institutions.

Workers, Private Governance, and Global Economic Integration

Debates regarding the impact of globalization on labor standards have focused on how different forms of global integration affect workers, particularly those employed in export sectors (Berliner

et al. 2015a, Distelhorst and Locke 2018, Locke 2013, Anner 2019, Malesky and Mosley 2018). Yet, we know little about how workers in developing countries view the relationship between trade and their working conditions, as well as how these perceptions are shaped by the institutions intended to protect their interests. Bringing worker perceptions into the study of trade and labor standards offers several advances to the field.

First, workers' views are inherently important, as they are the intended beneficiaries of institutions governing trade and labor markets. For this reason, their subjective assessment should play an important role in informing how scholars evaluate the impact of trade on working conditions.

Second, workers have both strong incentives and ample opportunity to develop informed opinions about working conditions in their industry. Research shows that experienced workers in the apparel industry have accurate knowledge of which firms offer better working conditions, not only which offer higher wages (Boudreau, Heath, and McCormick 2024). This is congruent with studies finding that individuals with material interests in the impacts of trade policies develop stable views that are less influenced by the attempts to frame the effects of trade (Ardanaz, Murillo, and Pinto 2013). Worker perceptions, therefore, provide a means to interrogate expectations of competing theories of trade and standards.

We note that worker perceptions of job quality may diverge from assessments based on traditional quantitative indicators of labor practices. Most research on the relationship between trade and labor standards relies on expert assessments of labor practices, using country-level datasets in which researchers gather indicators of labor laws and practices (Mosley and Uno 2007, Davies and Vadlamannati 2013, Messerschmidt and Janz 2023, Blanton and Blanton 2016). A second source of data in the study of trade and labor standards comes from private labor audits which, provide firm-level measures of compliance of monitored firms (Distelhorst and Locke 2018). Worker expectations provide a complementary perspective to expert-driven assessments, offering insights into challenging-to-measure aspects of labor standards, such as work intensity.

Finally, worker views are also important to understand because workers are political agents. Job opportunities created by global integration influence the popularity of governments throughout the world (Aksoy, Guriev, and Treisman 2024). Worker discontent with globalization-linked jobs

can alter electoral outcomes (Colantone and Stanig 2018b,a) and contribute to unrest (Palmtag, Rommel, and Walter 2020), especially in non-democratic contexts (Robertson and Teitelbaum 2011). Export sectors in many countries have been hit by waves of contentious action due to worker discontent, including both strikes and protests aimed at domestic actors (Anner 2018, Caraway and Ford 2020), as well as engagement in transnational activist networks (Brookes 2018). Thus, it is important to understand whether and under what conditions workers expect to obtain what they consider decent jobs under globalization.

A small set of prior studies uses perceptions of managers and workers to study trade and labor standards. Malesky and Mosley (2018, 2021) surveyed managers in Vietnam to probe the processes by which trade can lead to improved working conditions. Kabeer, Huq, and Munshi (2020) surveyed garment industry workers in Bangladesh to understand their views on two Bangladesh-specific private regulatory initiatives, the Accord and the Alliance. However, we know of no prior research on worker perceptions of exporters and the most common types of private regulatory institutions.

We develop hypotheses about worker perceptions based on prior literature on how trade affects working conditions in developing countries. One influential view is that trade adversely impacts labor standards, triggering a 'race to the bottom' as exporting firms increasingly compromise on standards to reduce costs and remain attractive (Davies and Vadlamannati 2013). Researchers have pointed to the correlation among trade competition, price pressures, and worker rights violations (Anner 2019, Ruwanpura 2016). Price squeezes and volatile demand put pressure on working conditions in exporting firms (Appelbaum and Lichtenstein 2016, Anner 2020). Governments may react to trade-induced price competition by scaling back the enforcement of labor regulations (Ronconi 2012). This theoretical view implies that workers perceive jobs in firms that participate in intensely competitive global markets as worse than firms that participate in more protected domestic markets. Those who work in the export sector may do so because of the availability of these jobs and as a way to address moments of temporary unemployment (Burchardi et al. 2016), not because they believe that these jobs are more desirable than similar firms that sell to the domestic market.

Research has increasingly pointed to a more complex relationship between trade and stan-

dards, advancing arguments that suggest that workers perceive some jobs in firms linked to trade as being higher quality than those in firms that sell to domestic markets. A growing body of literature shows that trade can act as a transmission belt for the diffusion of better labor rights from importers with high standards to exporting countries (Greenhill, Mosley, and Prakash 2009, Lim, Mosley, and Prakash 2015, Oka 2012, Cao, Greenhill, and Prakash 2013). Recent research from Malesky and Mosley shows that firms are more motivated to invest in the improvements in labor standards when doing so unlocks the possibility to export to economies with higher price markups (2018, 2021). Upgrading can either result from firm-level institutions like private regulation or from the spontaneous diffusion of best practices and economic growth ('export market' mechanism). While institutional and economic mechanisms can overlap, they are analytically distinct, can operate independently, and have differing implications for workers' understanding of jobs tied to trade.

The main firm-level institution that could contribute to the diffusion of higher labor standards through trade is private regulation. Private regulation consists of importing firms (or their agents) inspecting exporting firms for compliance with labor standards. As customers, importing firms enjoy some power over the exporters they buy from. This theoretically enables them to influence the employment practices of their suppliers. There is evidence that firms exposed to private regulation have greater compliance with minimum wage regulations (Egels-Zandén 2014, Harrison and Scorse 2010). Berliner et al. (2015b) found that large US brands respond to consumer pressures by enforcing labor standards in their suppliers. If private regulation does make it more likely that exporting firms meet global standards, workers may also expect better working conditions in firms monitored by buyers. This would indicate that these institutions are indeed meaningful, suggesting that they generate expectations that privately regulated firms are more likely to follow norms set out in global standards.

Although private regulation is central to institution-focused theories of trading up (Greenhill, Mosley, and Prakash 2009, Mosley 2011, Cao, Greenhill, and Prakash 2013), many studies have concluded that private regulation has little effect on the labor practices of exporters (Locke 2013, Kuruvilla 2021, Bulut and Lane 2011, Bartley 2018). After decades of private regulation, deadly accidents continue to occur in privately-monitored exporters (Walsh and Greenhouse 2012,

LeBaron 2021, Chan, Selden, and Pun 2020). Collectively, these studies cast doubt on whether firm-level governance institutions can underpin any positive association between trading and labor standards. Furthermore, they suggest that workers are unlikely to expect any meaningful difference between jobs in firms that are subject to private regulation and those that are not. Although workers in export factories are among the intended beneficiaries of private regulation, they may perceive jobs in factories subject to private regulation to be no different than those in firms that are not subject to these institutions.

To empirically interrogate these competing expectations, we hypothesize that workers expect better jobs in exporting firms regulated by private standards compared to those that are not.

> **Hypothesis 1**: Workers expect higher levels of job quality in export factories that are visited by European buyers to verify labor standards than in export factories that are not visited by such programs.

Regulatory institutions are not the only proposed drivers of trading up. The export market mechanism holds that exporting creates incentives for labor upgrading that are *not* contingent on regulatory institutions. This argument implies that workers are likely to perceive jobs to be better in firms that export to high standards markets, irrespective of the presence of private regulatory institutions.

Firms in global supply chains are more productive, have more opportunity to increase sales, and ask for higher markups than those that do not (Atkin, Khandelwal, and Osman 2017, Mosley 2022, Gullstrand, Olofsdotter, and Thede 2014, Melitz and Ottaviano 2008). The larger returns of export markets can lead to greater human capital investments to help attract more productive workers (De Loecker and Warzynski 2012, Kizu, Kühn, and Viegelahn 2019). Exporting firms have a higher level of the so-called "efficiency wage", by which firms find it profitable to offer a higher wage (or standards) than is market-clearing because doing so elicits greater productivity. For example, Verhoogen (2008) finds that in Mexico, exporting firms are more productive, manufacture higher-quality goods, and pay higher wages to workers. Exporting firms also tend to have better management practices and, as a result, may exhibit better working conditions (Bloom and Reenen 2010). Research has shown that the productivity-enhancing management systems that are diffused

in supply chains can lead to increased compliance with labor standards, higher wages, and reduced informality (Distelhorst, Hainmueller, and Locke 2017, Trifković 2017). Broadly, these studies point to economic processes that diffuse labor standards in global markets that are not dependent on regulatory institutions.

If this is the case, workers would perceive trade integration with high-standards countries as a force able to improve job quality, even when regulatory institutions, whether state or private, remain weak. This scholarship yields our second hypothesis. We note that hypotheses 1 and 2 are not mutually exclusive; both economic and institutional processes can function in parallel.

> **Hypothesis 2:** Workers expect higher levels of job quality in factories that export to Europe than in factories that sell to the domestic market.

State institutions may also influence workers' perceptions of jobs tied to globalization. Workers may perceive jobs to be of higher quality when states inspect workplaces to control practices. Indeed, work on the limitations of private regulation often points to the importance of state regulation as a more meaningful institution (Locke 2013). Due in part to the potential of state regulation to counter the downward pressures of global trade, activists in advanced economies have promoted labor clauses in preferential trade agreements (Raess and Sari 2018, Hafner-Burton, Mosley, and Galantucci 2019). These clauses typically require participating states to adopt reforms, achieve labor-related objectives, and enforce fundamental labor rights (Tran, Bair, and Werner 2017).

Some evidence suggests that these labor clauses positively impact employment protection laws and compliance with freedom of association, collective bargaining rights, and other labor standards (Schrank 2009, Postnikov and Bastiaens 2014, Sari, Raess, and Kucera 2016, Dewan and Ronconi 2018). If state regulatory institutions are meaningful to workers, they may expect higher quality jobs tied to trade when the state is actively involved in monitoring compliance.

Yet, in many countries, state regulation is weak in practice. Provisions in trade agreements aimed at enhancing state enforcement of labor standards sometimes do not result in improved working conditions (Giumelli and van Roozendaal 2017, Posso 2017, Smith et al. 2021). This ineffectiveness has been attributed to insufficient political support for implementing regulations and corruption of labor inspectorates (Berliner et al. 2015a, Mosley 2017, Kolben 2011). As a result,

workers may perceive few differences between jobs in firms that have been actively monitored by state regulators and those that have not.

Despite the centrality of the state in theorizing about trade and labor standards, we know little about worker perceptions of jobs that are actively regulated by the state and those that are not. We examine the following hypothesis:

> **Hypothesis 3**: Workers expect higher levels of job quality in factories producing for the domestic market that are visited by government regulators than factories producing for domestic markets that are not visited by such programs.

It is also unclear how workers compare private and state regulation in exporting firms. On the one hand, trading up research suggests that exporting firms must conform to stringent standards imposed by foreign buyers, exceeding the standards typically enforced by states in developing countries (Greenhill, Mosley, and Prakash 2009). Research has shown that in some export-dependent countries, such as Bangladesh, employers prefer state regulation over private alternatives, as they view the former as more aligned with their notions of sovereignty and less costly (Bair, Anner, and Blasi 2020). This suggests that job quality may be higher in firms subject to private regulation than those subject to state regulation, which workers may recognize.

On the other hand, some studies of private regulation argue that states are more effective than private actors (Locke 2013). As summarized above, private regulatory institutions have a series of weaknesses, including their lack of attachment to legal rights. Workers may view firms that are monitored by private actors as no different, or even worse, than those that are monitored by states. The uncertainty surrounding the relative strength of private and public regulation in emerging market exporters led us to test the following hypothesis.

> **Hypothesis 4**: For exporting factories, workers expect higher job quality when the firm is monitored by the state than when it is privately regulated by the buyer.

There is also uncertainty about how workers perceive jobs that export and, therefore, are exposed to economic processes that may enhance standards, compared with jobs in firms that are monitored by the state regulation. If enhancements in labor standards are driven primarily by

economic processes, workers may expect jobs tied to trade as being better than those in the domestic sector, regardless of whether they are actively monitored by state regulatory actors. This led to our final hypothesis:

> **Hypothesis 5**: Workers expect higher job quality in export factories that are not visited by a state or private regulator than factories producing for the domestic market that are visited by state regulators.

Research Design

Our empirical design draws on experienced Moroccan factory workers' understanding of labor practices in different types of employers. The Moroccan context is helpful for analyzing worker expectations of different types of jobs. Morocco has developed as an export platform for apparel products over the last thirty years (Rossi 2013, Cammett 2007). In 2020, the primary export destinations were in Europe, with Spain (36.6%), France (14.6%), and Germany (7.7%) being the largest importers (Gaulier and Zignago 2010). Firms in the Moroccan apparel industry are potentially exposed to private institutions that regulate labor standards, state institutions, and the potential economic processes that might derive from trade with high-standard countries. In addition to export firms, there are also garment factories that sell to the domestic market. The 2019 World Bank Enterprise Survey found that 18.3% of workers in the garment sector in Morocco work in factories producing solely for the domestic market. Workers move in and out of jobs in these firms. The majority of apparel firms in the World Bank survey report an average length of employment of less than six months. Therefore, workers with years of experience are likely to have informed views of different types of factories.

As observed in other developing countries, Morocco's labor laws are inconsistently enforced. The labor market has high levels of informal employment, with 45% of wage workers in the informal sector (Hatayama 2021). Research in the Moroccan apparel factories uncovered widespread violations of labor law including below-minimum wage payments, arbitrary pay deductions and evasion of social security contributions (Rossi 2013, Kopinak, Ramírez, and Hennebry 2018, Dahuabe et al. 2020). Workers also report excessive overtime hours and physical fatigue,

with some recounting being forced to wear diapers to avoid going to the washroom when rushing to meet production targets (Kopinak, Ramírez, and Hennebry 2018, p. 137). Safety risks in the apparel industry were brought to horrific view in 2021 when a factory flooded in Tangier, trapping and killing 28 workers. Although collective labor rights are protected on paper, few firms have collective bargaining agreements in practice. In 2015, there were only 17 firm-level collective bargaining agreements and just 39 at the sectoral level (Gannat and Betcherman 2021). Many workers report that their workplaces do not respect freedom of association and that they risk being dismissed if they join a trade union (Dahuabe et al. 2020; Kopinak, Ramírez, and Hennebry 2018, p. 133; Trinidad Requena, Soriano Miras, and Barros Rodríguez 2018, p. 325). Although Moroccan labor organizations have been relatively restrained in their militancy compared with neighboring countries, they organize well over 100 strikes per year (Anderson 2016).

The Moroccan state's capacity to respond to violations through labor inspection is limited. There were 304 labor inspectors in Morocco in 2018, giving the country just one inspector per 37.9 thousand workers (Gannat and Betcherman 2021). This ratio is far below that of other countries in the region (Tunisia 10, Algeria 16.9) and is just half of the International Labor Organization (ILO) recommendation of one inspector per 20,000 workers in transition countries. Local unions have also criticized labor inspectors for being passive and incapable of effectively enforcing labor standards (International Labour Office 2012, p. 21). Labor inspectors are sometimes denied entry to factories and are occasionally bribed by factory owners (Kopinak, Ramírez, and Hennebry 2018, p. 138). Nevertheless, even countries with weak labor inspectorates do conduct inspections and enforce labor laws. In the 2010s, Moroccan labor regulators conducted between 15,000 and 20,000 inspections per year (Boukaich 2014), with an emphasis on the apparel industry toward the end of the decade (Ministère du Travail et de L'Insertion Professionelle du Maroc 2018, 2019). At the start of the Covid-19 pandemic (between April and September 2020), the Ministry reported conducting nearly 40,000 inspections (Hatim 2020). Specifically, inspectors' plans included efforts to verify social security payments, health and safety, working hours, and salaries in garment factories located in Tangier.

Our empirical approach probes workers' informed expectations of working conditions in

the Moroccan apparel industry. Garment factories in Morocco provide variation in theoretically relevant ways—they include factories that export and those that do not, those that are privately regulated and those that are not, and those that have been inspected by the state and those that have not—allowing us to examine worker perceptions of employment under different forms of global integration.

Survey Design

To survey workers with garment industry experience in Morocco, we gained access to the supply chain of a large Spanish importer of apparel from Morocco: Inditex. Known for its clothing brand Zara, Inditex is one of the world's largest apparel retailers. Gaining entry through a large buyer provided access to firms that would not normally make their workers available for research surveys. The project was conducted under a research agreement between Inditex and the researchers' universities that provided the research team with access and gave the research team full control over the analysis and interpretation of research findings. Funding for the research was provided entirely by the researchers' universities. No Inditex staff were present in the factories during the survey, but they were present during preliminary interviews conducted to inform the design of the survey. The survey was administered by a Morocco-based organization that implemented the Moroccan Afrobarometer survey in 2021.

All survey respondents were employed at factories that exported and counted Inditex among their buyers (most factories in the apparel industry sell to multiple buyers). Although we only have access to factories that sell part of their production to one large buyer, we estimate that roughly one-third of workers in the Moroccan textile sector are employed in factories included in our sampling frame.[1] The survey used a two-stage sampling strategy to create a representative sample of workers of the buyer's factories in Casablanca and Tangier, which are two of the largest textile production centers in the country. First, we took a random sample of factories, stratified by city and size, with the probability of a factory being sampled proportional to the number of workers in the factory. This approach gives each worker in the buyer's Moroccan supply chain approximately the same probability of being sampled, creating a representative sample of workers in Moroccan factories

[1] To estimate the percentage of all garment workers in our sample, we use the total number of workers in all factories in our sampling frame and official employment figures on the sector (International Trade Centre 2020).

that sold any of their production to Inditex. Table A1 in the Supplementary Information (SI) shows that there are no imbalances in observed characteristics in the factories we sampled compared to those not sampled.

Our understanding of worker views of the labor market was informed by qualitative research conducted in Tangier in 2019.[2] We interviewed 36 respondents (27 workers and 9 managers) in 8 factories.[3] The objective of the interviews was to understand the context of garment industry work in Morocco and to learn how best to pose survey questions to these workers. During the interviews, we probed how workers develop their views of jobs across factories and, crucially, how workers talked about these jobs. Many workers stated that they gathered information on workplaces by talking with friends and family members about their experiences in different factories. Workers also contrasted their perceptions of working conditions across different firms in our interviews. For example, one worker noted that her previous employer did not pay overtime wages and another that her previous employer did not comply with health and safety standards. These interviews led to the construction of our survey experiment, which probed worker expectations for labor conditions in different types of garment factories.

Interviews with managers helped us understand the contexts of the factories. The interviews revealed that some factories used powerful incentives to drive fast-paced production, while others did not provide strong incentives for workers to increase speed. Some managers noted that they faced fierce competition from Asia-based factories and blamed trade openness for increasing pressure on their firms. Congruent with data from the World Bank Enterprise Survey, managers confirmed that worker turnover was fairly high—some factories replaced a third of their workforce each year. Workers tend to change jobs after extended holidays and the low season when many export factories reduce hours and workers look for temporary employment in domestically oriented firms to maintain their income flows. This turnover motivates workers to gather information from relatives and friends on working conditions during their job searches and ultimately exposes workers to conditions in different employers.

[2]The interviews and the survey were approved by the Institutional Review Boards of the authors' universities.

[3]The interviews were conducted in Arabic with translation (28) and in Spanish (8). The average interview lasted 30 minutes.

Using the data from these interviews, we developed the survey and conducted a pilot in Casablanca in April 2022 in three factories with 68 workers. Following the pilot, we adjusted the question wording and the within-factory sampling protocol. Prior to fielding the survey, we created a pre-analysis plan that specified all hypotheses.[4]

Local enumerators implemented the survey using face-to-face interviews in summer 2022. Within each factory, survey teams drew a random sample of fifty workers from a sampling frame that included all non-supervisory workers in production areas, excluding supervisors and workers in non-production areas (e.g. janitorial and security staff). Additional details on the sampling approach are provided in the SI. Survey implementation adopted several techniques to reduce the likelihood of social desirability bias. Surveys were conducted in isolated rooms, inaccessible to managers, and adequate spacing was maintained between participants to prevent overhearing.

Descriptive statistics for the sample appear in Table A2 in the SI. Overall, 69% were women, 16% had no formal education, and 31% had completed primary school. Most workers were under 35 years of age (61%). On average, they worked 11 years in the apparel industry, with a median of 8 years. Migrant workers (i.e. workers who grew up in a different city from where they were currently working) comprised 45% of the sample.

Experimental Design

In semi-structured interviews, factory workers in Morocco described using conversations with friends and family to learn about job opportunities. The survey experiment mimics these conversations to elicit worker perceptions of job quality in different types of firms. It describes a scenario in which a friend is seeking advice about a job opportunity. The location of the job and the friend's gender were matched to those of the respondent. The survey item focuses on a friend and a factory other than the respondent's own to reduce the risk of pressure to say positive things about one's own job or employer.

We designed the experimental vignette to hold constant contextual information that may influence workers' perceptions of labor standards in the hypothetical firm, including ownership, firm age, and firm size (Dafoe, Zhang, and Caughey 2018, Barry, Chad Clay, and Flynn 2013,

[4]The pre-analysis plan for the entire survey is posted to the Open Science Framework repository. The elements of the pre-registration pertaining to this study are reproduced in SI Section A3.

Blanton and Blanton 2012, Messerschmidt and Janz 2023, Pedace 2010, Oi and Idson 1999, Brown and Medoff 2003). We included only the most important factors from the literature that might be correlated with our treatments because research shows including overly rich contextual details makes it harder for respondents to recall treatments (Brutger et al. 2022). This concern is particularly pertinent given our sample's educational background and the oral delivery method, which may augment such challenges for respondents (compared with a written survey in which respondents can review the treatment text when they respond to questions). In all treatment conditions, workers received the following introduction:

> Imagine you have a friend who is looking for a job in a factory. He/she received an offer from a factory here in Tangier/Casablanca. The factory is owned by a Moroccan company, has been operating for 2 years and employs 65 workers.

After the introduction, workers received randomly manipulated information about the employer. First, the factory's integration into global markets was manipulated. Respondents learned that it either exported to a European buyer or produced for the domestic market in Morocco. The foreign buyer was based in Germany, the third-largest destination for Moroccan apparel exports. Germany is an ideal test case of 'trading up' in Morocco; survey data show that Moroccan workers believe German firms are likely to treat the local workforce better than firms from most other countries (Afrobarometer 2023). Germany also avoids potential sources of bias associated with the other major destinations for apparel exports. France was excluded due to its colonial history with Morocco, which might influence respondents' judgments. Spain was excluded because respondents were employed by a supplier to a Spanish firm, and we had concerns that judgments about Spanish importers might suffer from social desirability bias.

Second, the employer's exposure to institutions of labor governance was randomly manipulated. Factories were either audited by the foreign importer (only available in the export scenario), inspected by state regulators, or neither. Domestic buyers in Morocco are not known to conduct private labor audits, so the experiment excluded the unrealistic combination of domestically oriented factories audited by their buyers. The Moroccan Ministry of Labor conducts labor inspections to monitor and improve compliance with health and safety, social security, working time, and salaries

in the apparel industry (Ministère du Travail et de L'Insertion Professionelle du Maroc 2019). In both labor governance scenarios, factories were described as "visited as part of a program to verify compliance" instead of "being inspected" because workers may be aware that buyers and labor inspectors target low-compliance firms for inspections.

Table 1: Survey Experiment

Condition	**Text**
Introduction (for all respondents)	We want to ask you one more set of questions about an imaginary factory. Imagine you have a friend who is looking for a job in a factory. He/she received an offer from a factory here in Tangier/Casablanca. The factory is owned by a Moroccan company, has been operating for 2 years and employs 65 workers.
Treatment 1: Local Market, No Regulation	The factory produces garments for *the local market that are purchased by a Moroccan buyer*. The factory has *not been visited by any programs that verify factory compliance with labor standards.*
Treatment 2: Local Market, State Regulation	The factory produces garments for *the local market that are purchased by a Moroccan buyer*. The factory has *been visited as part of a Ministry of Labor program to verify factory compliance with labor standards in the industry.*
Treatment 3: Export, No Regulation	The factory produces garments for *export to Europe that are purchased by a buyer from Germany*. The factory has *not been visited by any programs that verify factory compliance with labor standards.*
Treatment 4: Export, State Regulation	The factory produces garments for *export to Europe that are purchased by a buyer from Germany*. The factory has *been visited as part of a Ministry of Labor's program to verify factory compliance with labor standards in the industry.*
Treatment 5: Export, Private Regulation	The factory produces garments for *export to Europe that are purchased by a buyer from Germany*. The factory has *been visited as part of a buyer's program to verify factory compliance with labor standards in its suppliers.*

Table A3 in the SI reports covariate balance across treatment groups. Few variables appear to be unbalanced, suggesting that the randomization was successful and that there were no systematic differences between the groups of workers who received different treatments.

The main outcomes are workers' expectations about jobs in these firms, framed as advice given to their job-hunting friends. They were shown nine statements about job quality in random

order and asked if they agreed, were unsure about, or disagreed with each (Table 2). Responses were coded on a numeric scale of –1, 0, and 1, with higher values indicating more attractive workplace outcomes for all questions. For example, agreeing that "the factory is very safe" and disagreeing that "workers are very tired" are both coded as 1.

Table 2: Outcome measures

Dimension	**Statement**
Question	Your friend is seeking your advice. How much you would you agree or disagree with the following statements about likely aspects of the job? Please take your best guess given the information you have about the factory.
Remuneration	The factory gives workers large bonuses
	The factory pays most workers more than the minimum wage
Compliance	The factory always makes full social security payments for all workers
	The factory is very safe
	Workers sometimes are not paid for their extra time when they work late
	The factory does not provide a written contract to all workers
	Workers in the factory can negotiate their salaries with their employers as a group
Intensity	The pace of production is uncomfortably fast
	Workers are very tired at the end of the work day

Workers were asked whether they agreed, were unsure about, or disagreed with each statement about the hypothetical job. Statements grouped into the dimensions of wage, social compliance, and (work) intensity. Respondents did not see these dimensions.

The outcomes address elements of job quality that are relevant to our main hypotheses, but also allow us to gain a fuller understanding of the underpinnings of workers' perceptions. First, they include features of jobs that may be influenced by the private regulatory institutions that govern trade, such as health and safety. In addition, they include workplace features that are *not* likely to be affected by private regulatory institutions, like collective bargaining by employees (Anner 2012, Locke 2013). Second, they also include issues that are primarily of interest to government regulators, such as making social security payments, as well as those that are unlikely to be influenced by state or private institutions, such as written contracts that are not mandatory in Morocco (Trinidad Requena, Soriano Miras, and Barros Rodríguez 2018, p. 317). Third, they cover features understood to vary with export orientation, like wages. By including this range, we are able to examine the relationship between institutional structures and worker perceptions in a detailed manner.

Following the registered pre-analysis plan, the main outcome is an index of working condi-

tions using a standardized inverse-covariance weighted average of all indicators (Anderson 2008, Schwab et al. 2020).[5] In addition, we create three sub-indices relating to different dimensions of labor conditions: (1) remuneration (bonuses, pay over the minimum wage); (2) compliance (social security, workplace safety, unpaid overtime, written contracts, collective bargaining); (3) intensity (pace, tired) (Table 2, first column). The main hypotheses (listed above) were preregistered as the effect of treatments on the overall measure of job quality. We also report ancillary tests of each sub-index per the pre-analysis plan.

Table 3 reports descriptive statistics for our primary outcome index, sub-indices, and raw individual outcomes. The standardized indices all have mean zero and a standard deviation of one. Raw measures show that, on average, workers expect higher levels of compliance with safety obligations, social security payments, and payments for overtime work. Workers are less likely to respond positively to questions relating to work intensity (pace of production and tiredness) and those relating to having written contracts.

Table 3: Summary Statistics of Job Quality

Variable	N	Mean	Std. Dev.	Min	Max
Job Quality Index	2383	0	1	-3.6	1.21
Wage Index	2484	0	1	-2.03	0.71
Compliance Index	2414	0	1	-3.7	0.98
Intensity Index	2491	0	1	-1.54	0.98
Pay More Than Min. Wage	2492	0.47	0.81	-1	1
Large Bonuses	2497	0.5	0.79	-1	1
Social Security Payments	2488	0.69	0.68	-1	1
Written Contracts	2481	0.4	0.86	-1	1
Very Safe	2489	0.71	0.66	-1	1
Freedom of Association	2482	0.52	0.77	-1	1
Unpaid Overtime	2488	0.66	0.72	-1	1
Pace of production	2497	0.34	0.86	-1	1
Tired at Day's End	2499	0.1	0.92	-1	1

Note: Sample sizes differ across variables due to some worker non-responses.

Effects of the randomized treatments are estimated using multivariate regression (Auspurg

[5]The index is rescaled using the full sample mean and standard deviation. Results are consistent using an unstandardized index.

and Hinz 2015) with the baseline model:

$$JQ_i = \beta_0 + \beta_1 Exp\_NoReg_i + \beta_2 Exp\_Priv_i + \beta_3 Exp\_St_i + \beta_4 Local\_St_i + \varepsilon_i$$

The dependent variable JQ_i is the overall job quality index calculated from worker i's response. Binary indicators of each treatment appear in Exp_NoReg, Exp_Priv, Exp_St and $Local\_St$. The reference group consists of employers selling to the domestic market without any monitoring, whose mean outcome is captured by (β_0). β_1, β_2, β_3 and β_4 can be interpreted as the average difference in the expected job quality between a factory that produces for the domestic market and is not regulated (β_0) and the relevant treatment. Standard errors are clustered at the factory level and computed using bootstrapping ($B = 10,000$) across all models (Cameron, Gelbach, and Miller 2008). To test our preregistered hypotheses, we employ a wild bootstrap method to assess the equality of coefficients, as recommended by Roodman et al. (2019), and report Bonferroni-adjusted *p*-values to account for multiple hypothesis testing.

Results

How do workers perceive jobs at varying levels of international economic integration and exposure to regulatory institutions? Starting with the private institutions of labor governance (Hypothesis 1), workers expected conditions in export factories to be markedly better when firms were monitored by foreign buyers (Figure 1, Bonferroni $p < 0.01$ reported in Table A4). Despite the limitations of private regulatory institutions, workers viewed their presence as important in determining working conditions.

Contrary to Hypothesis 2, workers expected similar working conditions in exporters and domestically-oriented firms, other things equal. Expected job quality was nearly the same for exporting (-0.150) and domestic firms (-0.146) that are not monitored, with a Bonferroni *p*-value of 1. If workers perceive that jobs in firms that have integration into global markets benefit from better working conditions through economic processes and not institutional processes, workers should anticipate better conditions among exporters. Yet, we observe no evidence consistent with an argument that derives from this mechanism of trading up.

Workers also anticipated that factories subject to monitoring by government regulators would have better working conditions. Consistent with Hypothesis 3, expected job quality was significantly higher in state-monitored factories than in those without monitoring (Figure 1, Bonferroni $p = 0.018$). Our findings indicate minimal differences in expected job quality between exporting privately monitored factories and domestic state-monitored ones.[6] This finding comes despite studying a labor market in a developing country with moderate state capacity where economic and political interests may be an obstacle to the rigorous enforcement of labor regulation (Berliner et al. 2015b, Kopinak, Ramírez, and Hennebry 2018).

Results were not consistent with Hypotheses 4 or 5. Workers anticipated better job conditions in state-inspected, domestically-oriented factories than in unaudited exporting factories (Bonferroni $p = 0.039$). They expected no difference in job quality between exporting factories monitored by the state and those monitored privately.

Taken together, our findings suggest that the presence of monitoring institutions, led by either the state or market actors, plays an important role in shaping workers' perceptions of labor conditions. For workers, exporting alone does not imply better labor standards.

Table 4: Formal Test of Equality of Treatment Effects

	Test Statistic	Bonf. p-value
$\beta_{Ex,NoReg} = \beta_{Loc,NoReg}$	-0.046	1.000
$\beta_{Ex,NoReg} = \beta_{Ex,Private}$	-3.368	0.004***
$\beta_{Loc,NoReg} = \beta_{Loc,State}$	3.057	0.018**
$\beta_{Ex,NoReg} = \beta_{Loc,State}$	-2.838	0.039**
$\beta_{Ex,Private} = \beta_{Ex,State}$	-0.840	1.000

Bonferroni adjustment for 5 statistical comparisons. * p<0.10, ** p<0.05, *** p<0.01

Heterogeneous Treatment Effects

Following the pre-analysis plan, we examine the heterogeneous treatment effects across the three dimensions of job quality: compliance, intensity, and remuneration. Analyzing the different effects across dependent variables is helpful for two reasons. Substantively, as described above, the theories that we draw upon anticipate that institutions influence some aspects of labor standards and

[6] Testing $\beta_{Ex,Private} = \beta_{Loc,State}$ yields a Bonferroni *p*-value of 1. We consider this an exploratory finding as the hypothesis was not pre-registered.

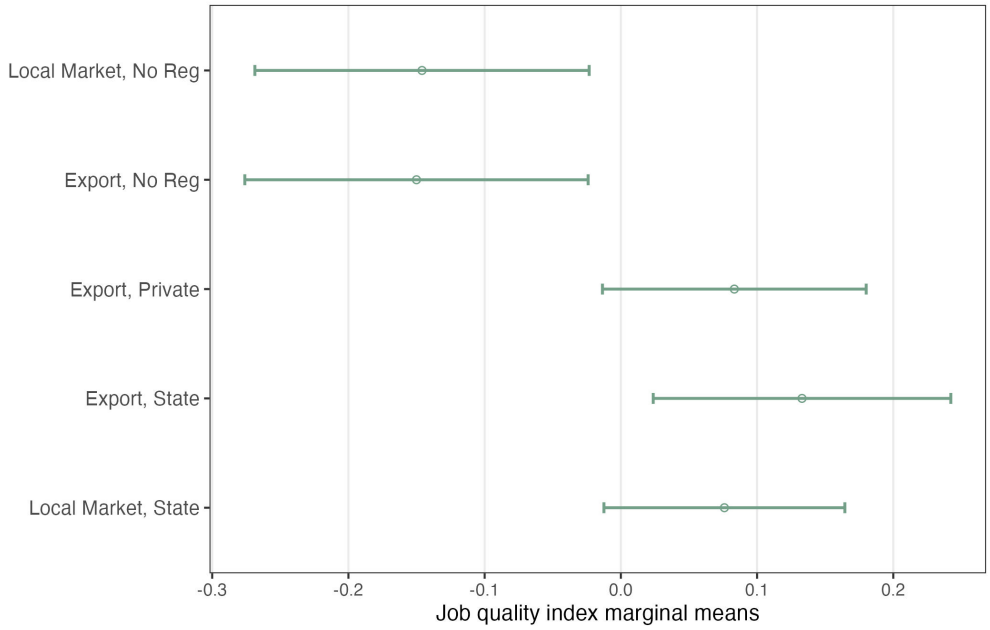

Figure 1: Expected job quality under exporting, private monitoring, and state monitoring

not others. Analyzing worker perceptions of different types of standards allows us to further explore theoretical expectations. Second, comparing responses across standards provides an opportunity to probe the possibility of social desirability bias. Because the surveys were conducted within factories, workers may have been influenced to describe jobs in factories that closely resembled their own workplace in a more favorable light. While we took steps to mitigate social desirability bias in the implementation of the survey, concerns may persist. An observable implication of social desirability bias is that workers should report a positive evaluation for *all* job quality dimensions in privately monitored exporting firms. Conversely, evidence of different treatment effects across distinct dimensions of job quality dimensions would suggest that workers expressed their perceptions of the specific dimensions of job quality.

Figure 2, shows the marginal means for each treatment across these sub-indices (full regression results in Table A4). Expectations for work intensity were similar no matter what the treatment.[7] Notably, workers perceive jobs in privately regulated export factories to be equally intense than those in domestic factories that are not monitored.[8] This suggests that workers are not

[7]Figure A1 in the SI shows the marginal means for each dimension of intensity.

[8]There is weak evidence that buyer monitoring improves job intensity in export factories (Bonferroni p=0.057, SI Table A8).

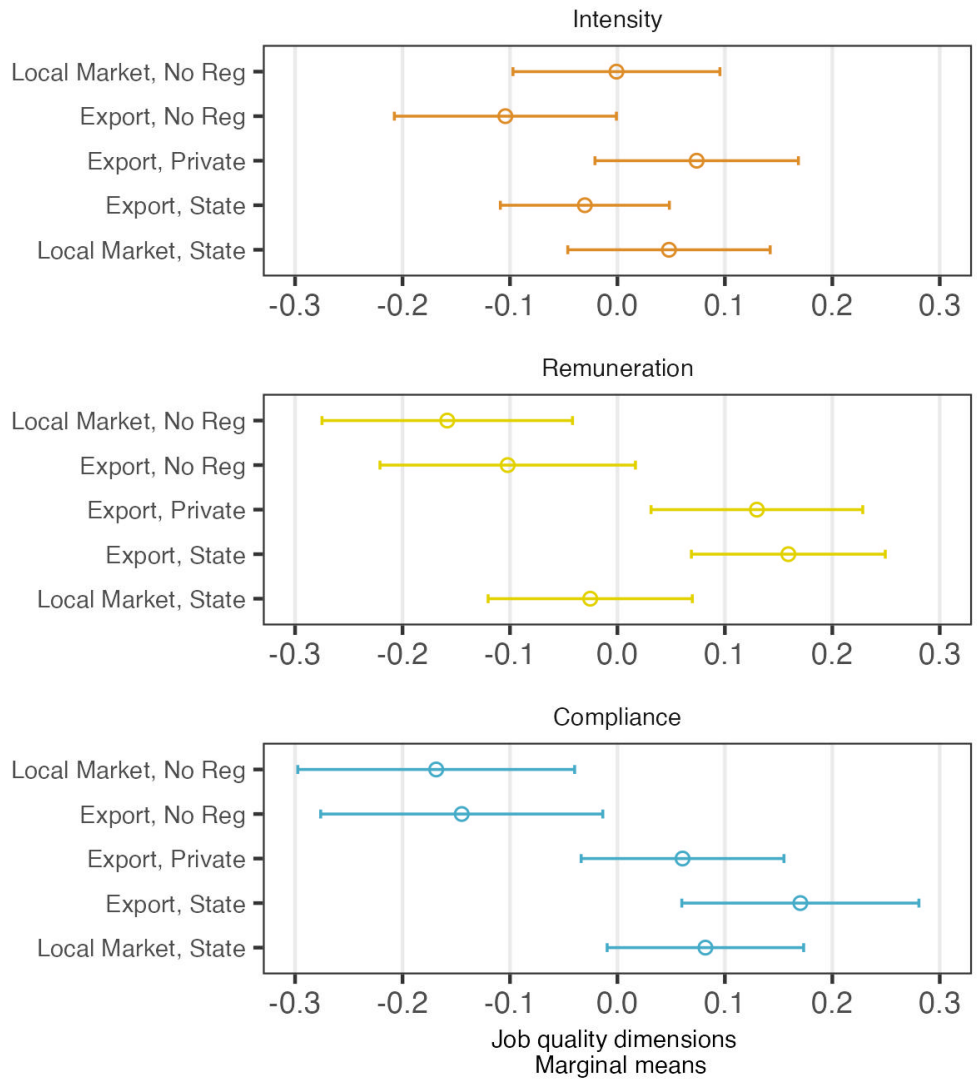

Figure 2: Treatment Effects on Job Quality Sub-Indexes

merely attempting to portray jobs in privately regulated export factories positively on all fronts. The perceived ineffectiveness of private monitoring in improving job intensity aligns with research showing that volatile demand and compressed lead-times put pressure on export factories, leading to highly intense work (Anner 2019).

Turning to the results of the effects on the remuneration index, workers expect monitoring to boost remuneration in export settings but not in domestic ones. This aligns with research showing that exporting factories offer higher wages than domestic ones (Verhoogen 2008, Kabeer, Huq, and Munshi 2020), and that monitoring can lead to increased compliance with minimum wage standards

and reduced arbitrary pay deductions (Barrientos and Smith 2007).[9] They are also consistent with qualitative accounts of Moroccan labor law showing inconsistent compliance with minimum wage regulations across factories (Kopinak, Ramírez, and Hennebry 2018, Trinidad Requena, Soriano Miras, and Barros Rodríguez 2018). This finding is significant as it shows that workers are not indifferent to the exporting dimension of these jobs and considers how exporting interacts with monitoring institutions to enhance labor conditions.

Results on the compliance index closely mirror our main findings (Table A10 and Figure A3 in the SI). This indicates that worker perceptions are consistent with research showing audits are more likely to ensure compliance with labor laws and safety regulations than factors that are often not included in codes of conduct and are difficult to measure, like job intensity (Tanaka 2020, Egels-Zandén 2014).

To further explore the issue of social desirability bias, we examine whether audits have heterogeneous effects on perceptions by different sub-components of compliance. Prior research shows that private audits are more effective in safety and human resource management but limited in ensuring rights of freedom of association and collective bargaining (Bartley et al. 2015, Locke 2013), especially in contexts like Morocco where unionization attempts can lead to dismissal (Kopinak, Ramírez, and Hennebry 2018). Our analysis, presented in Figure 3, reveals that private monitoring has the greatest impact on perceptions of safety and compliance with social security payments, while it has no effect on expectations for written contracts or freedom of association and collective bargaining rights.[10] Considering that Moroccan labor regulations allow oral labor employment agreements (Trinidad Requena, Soriano Miras, and Barros Rodríguez 2018, p. 317), these findings indicate that workers have realistic expectations about which dimension of job quality aspects are likely to improve as a result of audits and which are not. Overall, our analysis of the heterogeneous treatment effects does not support the presence of a pervasive social desirability bias, whereby workers seek to portray factories similar to their own in a favorable manner.

[9] Figure A2 in the SI, shows the marginal means for each dimension of remuneration.
[10] Complete results for all treatment conditions are in Table A11 and Figure A3.

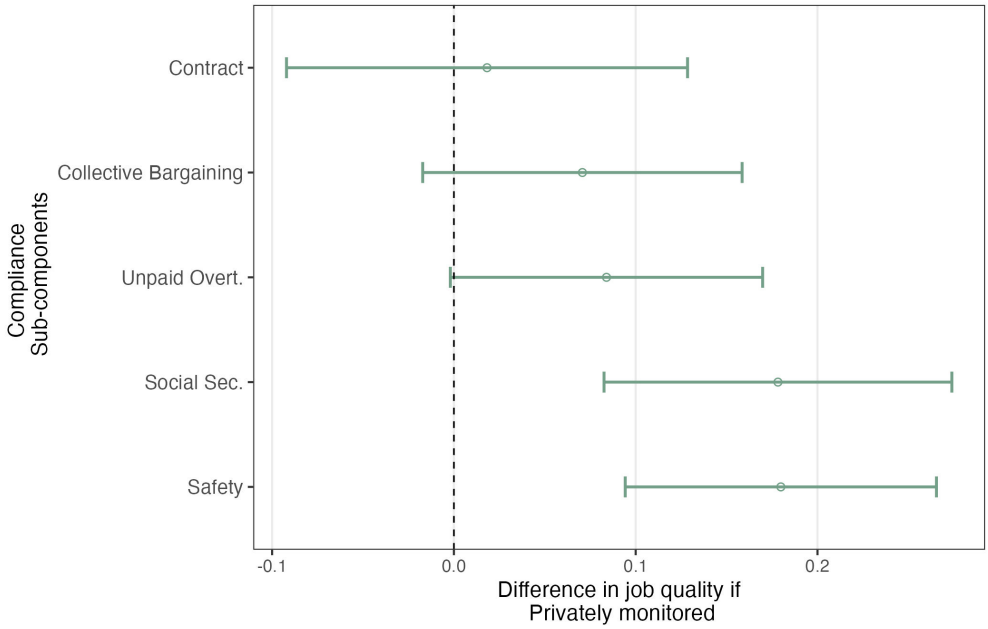

Figure 3: Difference in expectations in exporting factories. Private monitoring vs no regulation

Robustness Checks

One set of robustness checks reported in the SI shows explores whether our findings are an artifact of modeling decisions. We show consistent results using different specifications of the dependent variable, including building the job quality index with simple averages and the unstandardized inverse-covariance matrix (Tables A5 and A6). Adding covariates that are unbalanced across treatment conditions as controls in the regression model does not change our main findings (Table A7). Finally, we used Bonferroni, and Sidak-Holm adjusted p-values for 16 pre-registered hypothesis tests (including both our main five hypotheses and all possible secondary hypotheses). Table A12 shows our main results remain consistent with this stringent approach.

We conduct further tests to explore the external validity of our analyses. Our sample consists of workers employed by firms that sell at least part of their production to a single buyer, which raises concerns about the generalizability of our findings. As stated above, we estimate that approximately one-third of all garment factory workers in Morocco are employed in factories connected to Inditex. Hence, our results represent the expectations of at least one-third of the workforce in the sector. If workers in factories that sell part of their production to Inditex are similar to those that export but do not include Inditex as a customer, our findings likely represent the views of the vast majority

of Moroccan garment workers, as 81.7% of them are employed in exporting factories according to World Bank Enterprise survey of 2019.

Nonetheless, it is essential to carefully consider the sensitivity of our results to the specific sample used. As described above, there is substantial worker turnover, with individuals moving in and out of factories. The individuals in our sample may have been able to self-select into factories that are exporting and audited. Consequently, they may be prone to express more positive views of jobs in this type of factories, leading to an upward bias for this treatment condition.

The degree to which sorting takes place in labor markets like the ones we study is unclear. Although workers frequently change jobs, and some are able to select jobs in factories that meet their preferences, research has shown that workers often accept jobs that do not meet their ideal preferences due to constraints of the labor market (Mazumder and Yan 2023). Studies of industrial work in export sectors show that people often take jobs in such firms when they lack alternative employment opportunities (Blattman and Dercon 2018). In the Moroccan labor market, this is likely to be the case, as research shows that unskilled apparel workers in Morocco can have limited exit options and must often remain in their current job, regardless of preference, as they cannot afford to forgo income (Cairoli 2011, p. 77). This suggests that sorting is likely incomplete.

To probe the sensitivity of our findings regarding the effect of private regulation to the specific characteristics of our sample, we use a series of survey questions that indicate that a worker is not likely well matched with their current job. First, building on work that shows that migrants struggle to navigate labor markets compared with those who have greater social ties in communities (Boudreau, Heath, and McCormick 2024), we use the migration status to identify workers that may have had more difficulty gaining a job that tightly matches their preferences. Second, we rely on pre-treatment survey questions to assess the importance of task variety and job stability during low seasons to respondents. Given the monotonous nature of garment factory work and the known job instability in the export sector, a strong preference for diverse tasks and stable employment likely signals a greater mismatch between workers' current jobs and their ideal jobs.[11] If our results are influenced by self-selection bias, controlling the level of selection would lead to

[11] We create two dummies indicating if job stability and job variety are "very important" for the worker.

insignificant effect sizes. Moreover, workers better matched with their ideal jobs should anticipate better working conditions in export-monitored factories compared to those whose employment is less well-matched to their preferences. Table A15 in the SI shows the results of this exercise. After controlling for these variables and interacting them with our treatment, our findings remain robust, indicating that the effect of the private regulation treatment is not moderated by these variables, and hence, it is unlikely to be an artificial result of selection.

Conclusion

Research in international political economy has made substantial progress in examining the impact of global economic integration on labor standards. This work has led to new questions about how workers perceive jobs in firms that are subject to different types of regulatory institutions and that are differentially integrated into global markets. Worker perceptions are important because many elements of labor standards have both material and subjective elements—while some firms may indeed 'trade up' if workers do not perceive these jobs as better, analysts should exercise caution in labeling such jobs as social upgrading. Moreover, workers are economic and political agents who make decisions—where to work, when to join protests, when to support governments—in part based on their own subjective understandings of opportunities in their labor markets.

Our research contributes worker-level evidence to examine the mechanisms through which trade impacts labor standards. Drawing on data from the Moroccan context, we find a strong role for institutions of governance—both domestic and international—in shaping worker expectations about working conditions. Overall, workers expected jobs to be of higher quality in both privately and publicly regulated factories, while economic factors alone do not appear to affect workers' perceptions. Workers anticipated that private regulation can improve remuneration, compliance with safety regulations, and social security payments. Rather than being merely a symbolic gesture of multinational firms, workers expect private regulation to improve jobs. Yet, laborer perceptions also illustrate the limitations of private regulation. Workers did not believe that privately monitored factories were more likely to protect collective bargaining rights.

The results also point to the importance of state regulatory institutions in shaping worker perceptions, even in countries with moderate levels of state capacity, like Morocco. In the eyes

of workers, state inspections can render non-exporting factories equivalent in terms of job quality to factories that export and are audited by their buyers. This suggests that state-level pressures that result in countries expanding their regulatory capacity should occupy a central place in our theorizing of the possible mechanisms underlying any positive effect of trade on the quality of jobs linked to globalization. We note, however, that in the Moroccan context, state inspections appear less able to bring about similar improvements in worker expectations for wages and intensity as they do in compliance overall.

Perhaps the most surprising finding of our analyses is the null effect of exporting to a high standards country on job quality expectations (in the absence of private regulatory institutions). Future research could probe how this finding may differ across contexts, such as industries with a stronger quality difference between export and domestic markets, as efficiency wages may only be obtained when the product quality differential of exported products meets a certain minimum threshold. In the clothing industry, product quality differences may be too small to have a significant impact on the workplace that workers register as meaningful. Nevertheless, this finding is inconsistent with the expectations deriving from one of the main mechanisms thought to underlie trading up, using novel empirical evidence from one of the industries that has been central to the literature.

Our findings also contribute to broader debates on the political effects of globalization, particularly regarding the role of institutions in shaping individual preferences (Hicks, Milner, and Tingley 2014, Hainmueller and Hiscox 2006, Dean 2015). By demonstrating that private regulation enhances workers' perceptions of job quality, our research reveals that such governance mechanisms can influence workers' interests and potential political actions. Given the relationship between dissatisfaction with working conditions and labor unrest, our results suggest that private regulation may contribute to greater social stability in export sectors.

The study's results have implications for policymakers and labor activists concerned with working standards in the context of global trade. Our findings suggest that social movements and international organizations can improve labor standards as understood by workers both by prompting global buyers to engage in private regulation and by pushing states to improve their

monitoring of employers. Further research could examine whether campaigners facing resource constraints can have a greater impact by targeting large multinationals, which are more readily able to implement standards across their supply chains, or by focusing on state-level interventions. While state regulation is similarly valued by workers and has a wider reach, influencing state behavior may pose greater challenges due to entrenched institutional and political obstacles. At the same time, our results suggest that policymakers will have to implement more structural reforms to bring about meaningful change in freedom of association and collective bargaining rights.

Future research could expand upon the findings of this study to gain a deeper understanding of the role of private regulation in shaping working conditions. One potential area of inquiry is to probe how worker perceptions are vary by different the types of private regulation. While our treatment included a generic buyer, future studies could highlight buyers more or less concerned with their reputations, governed by different regulatory requirements in their home countries (such as the new European Union Corporate Sustainability Due Diligence Directive legislation), as well as alternative non-state institutions, such as those with greater worker power. Moreover, it is important to examine the generalizability of our findings, especially regarding state inspections in other lower-middle-income countries. Morocco has characteristics that set it apart from other countries in the same income group—it is a relatively stable authoritarian political system that has offered some tolerance for unions and political pluralism (Bishara 2023). State monitoring and regulation of labor standards are likely to function differently in contexts with differing levels of political freedoms and state capacity. Overall, future research that builds upon our findings could provide further insights into how workers view the effectiveness of private and public interventions in promoting decent working conditions in developing countries.

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Supplementary Information

Table of Contents

Sampling Approach

We began with a sampling frame that included all of the factories in the buyer's supply chain. For practical reasons, we focused on two main cities—Tangier and Casablanca—that had the largest concentration of factories (82% of all factories) and on factories with more than 60 workers.[12] We followed Innocenti et al. (2019) and sampled clusters with probability proportional to cluster size and then sample the same number of individuals per cluster because it is the most efficient and unbiased approach to estimating individual-level outcomes in the population.

Fifty factories were initially approached for the survey. Sixteen of these factories could not or would not participate in the survey, mainly because the survey was carried out in high season and the factory had intense production schedules and could not make fifty workers available for the survey. We replaced each of these factories with a similar factory (same size, same city). Ultimately, we reached out to a total of 85 factories to reach the desired sample size.

When sampling workers within the factory we chose to sample from all workers engaged in production on the day of the survey rather than from formal records. This ensured that all production workers were eligible for inclusion, even those without formal employment contracts. We used the following procedure to draw our sample of workers in the factory. When the survey team entered the factory, the survey lead asked management to name each of the factory's production areas and to provide the number of workers of each gender in each area. The survey lead then calculated the number of workers to sample in each group as a proportion of the total sample (50 workers). The survey lead then entered the production area and identified the physical middle of each department. Starting with the most central worker (e.g. the central worker in the center line in a sewing area), the survey lead counted off workers using a specified interval (the number of workers in the group divided by the sample size) to approximate a random sample evenly spread out in the department.

Workers were first read a recruitment script. Respondents were informed that the survey team had the permission of management, that they did not have to participate if they did not want to, and that their participation would have no impact on them or any workers in the factory. Of over 2,500 workers approached 18 refused and were replaced with other workers using the

[12] We eliminated smaller factories because it was too disruptive to survey 50 workers in factories that had so few workers.

sampling methodology described above (0.7%). The workers who agreed were then asked to follow enumerators to an off-production-line location within the factory, away from management. These areas included offices and factory canteens. Once introduced to the enumerator, the workers were asked for informed consent, and their age was confirmed. The enumerators asked all questions verbally, repeating questions when the respondent expressed confusion.

The sampling frame only included workers 18 years or older; although it is legal in Morocco for factories to employ workers under 18, we did not have ethical protocols in place to include minors in the study.

Tables and Plots

Table A1: Factory-Level Sample Representativeness

Variable	Not Sampled	Sampled	p-value
Casablanca	23%	24%	0.864
Tanger	77%	76%	0.864
Percent Female Workers	61%	65%	0.123
Percent Production Buyer	63%	67%	0.574
Compliance Rank A	81%	76%	0.387
Compliance Rank B	17%	24%	0.263
Less than 1 Year of Relationship	12%	8%	0.432
1-3 Years of Relationship	6%	2%	0.281
More than 3 Years Relationship	82%	90%	0.19
Factory	25%	24%	0.911
Supplier	75%	76%	0.911
Priority	41%	32%	0.246
Social Sust. Project	13%	20%	0.232
Workers Representatives	93%	95%	0.645
Trade Union	3%	2%	0.752
Observations	210	50	

Table A2: Summary Statistics

Variable	N	Mean	Std. Dev.	Min	Max
Female	2505	69%			
Born in Another City	2505	45%			
Job with Complex Tasks	2505	70%			
Education	2505				
... No Formal Educ.	400	16%			
... Primary	777	31%			
... Secondary	1070	43%			
... Apprenticeship	78	3%			
... Vocational	104	4%			
... University	76	3%			
Age	2505				
... 18-20	130	5%			
... 21-25	493	20%			
... 26-30	541	22%			
... 31-35	354	14%			
... 36-40	350	14%			
... 41-45	282	11%			
... 46-50	194	8%			
... 51-55	113	5%			
... 56-60	38	2%			
... 61 and older	10	0%			
Covid: Lost Shifts	2505	7%			
Covid: Family Illness	2505	17%			
Covid: Family Unemployment	2505	27%			
Covid: Increased Family Obligations	2505	42%			
Covid: Lost Job	2505	35%			
Covid: Lost Hours	2505	20%			
Covid: Lost Pay	2505	30%			
Covid: No Impact	2505	10%			
Covid: Count of Impacts	2505	1.78	1.39	0	7
Children Under 18 in the Worker's HH	2497	1.11	1.29	0	9
Experience (yrs)	2505	11.4	9.09	0	47

Note: HH indicates household.

Table A3: Balance of Observables Covariates Across Treatments

	Export, No Reg		Export, Private		Export, State		Local, No Reg		Local, State		p-value
Variable	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	Test
Factory level variables											
City: Casablanca	450	0.26	513	0.23	493	0.26	541	0.19	508	0.25	0.05**
% of Female Workers	450	0.65	513	0.65	493	0.65	541	0.65	508	0.65	0.902
% of Production for Buyer	422	0.65	478	0.67	460	0.64	515	0.71	480	0.67	0.032**
Compliance Rank A	450	0.78	513	0.75	493	0.72	541	0.76	508	0.78	0.18
Business Rel.: More rhan 3 yrs	450	0.91	513	0.89	493	0.9	541	0.89	508	0.91	0.804
Factory	450	0.25	513	0.25	493	0.25	541	0.21	508	0.24	0.627
Supplier	450	0.75	513	0.75	493	0.75	541	0.79	508	0.76	0.627
Priority	450	0.34	513	0.33	493	0.31	541	0.32	508	0.31	0.936
Social Sust. Project	450	0.19	513	0.21	493	0.2	541	0.21	508	0.19	0.875
Workers Representatives	378	0.93	411	0.95	398	0.96	442	0.95	426	0.96	0.16
Trade Union	411	0.01	466	0.03	441	0.02	477	0.03	459	0.02	0.21
Worker level variables											
Female	450	0.69	513	0.69	493	0.71	541	0.65	508	0.68	0.328
Educ: No Formal	450	0.18	513	0.17	493	0.17	541	0.14	508	0.15	0.424
Educ: Primary.	450	0.3	513	0.33	493	0.3	541	0.31	508	0.32	0.84
Educ: Secondary	450	0.43	513	0.41	493	0.43	541	0.44	508	0.43	0.815
Educ: Apprenticeship	450	0.02	513	0.04	493	0.03	541	0.03	508	0.03	0.765
Educ: Vocational	450	0.04	513	0.04	493	0.05	541	0.04	508	0.04	0.637
Educ: University	450	0.04	513	0.02	493	0.02	541	0.03	508	0.04	0.203
Age: 18-20	450	0.04	513	0.06	493	0.05	541	0.06	508	0.05	0.784
Age: 21-25	450	0.2	513	0.2	493	0.2	541	0.2	508	0.19	0.999
Age: 26-30	450	0.18	513	0.21	493	0.21	541	0.25	508	0.22	0.158
Age: 31-35	450	0.15	513	0.15	493	0.11	541	0.13	508	0.17	0.046**
Age: 36-40	450	0.13	513	0.14	493	0.15	541	0.15	508	0.12	0.694
Age: 41-45	450	0.14	513	0.11	493	0.12	541	0.11	508	0.09	0.094*
Age: 46-50	450	0.08	513	0.08	493	0.09	541	0.05	508	0.08	0.178
Age: 51-55	450	0.05	513	0.04	493	0.04	541	0.05	508	0.05	0.942
Age: 56-60	450	0.02	513	0.01	493	0.02	541	0.01	508	0.02	0.901
Age: 61-Older	450	0	513	0	493	0	541	0	508	0.01	0.892
Status: Not Married	450	0.46	513	0.48	493	0.46	541	0.47	508	0.5	0.651
Status: Married	450	0.46	513	0.44	493	0.44	541	0.45	508	0.42	0.672
Status: Divorced	450	0.07	513	0.06	493	0.08	541	0.06	508	0.07	0.873
Status: Widow	450	0.01	513	0.02	493	0.02	541	0.02	508	0.01	0.334
Covid: Lost Shifts	450	0.07	513	0.07	493	0.09	541	0.06	508	0.07	0.457
Covid: Family Illness	450	0.18	513	0.17	493	0.2	541	0.16	508	0.15	0.297
Covid: Family Unemployment	450	0.27	513	0.27	493	0.27	541	0.27	508	0.27	0.999
Covid: Increased Family Obligations	450	0.44	513	0.43	493	0.42	541	0.43	508	0.4	0.682
Covid: Lost Job	450	0.34	513	0.32	493	0.36	541	0.35	508	0.35	0.766
Covid: Lost Hours	450	0.2	513	0.19	493	0.2	541	0.19	508	0.21	0.825
Covid: Lost Pay	450	0.29	513	0.28	493	0.3	541	0.33	508	0.3	0.417
Covid: No Impact	450	0.09	513	0.09	493	0.09	541	0.12	508	0.12	0.254
Covid: Count of Impacts	450	1.8	513	1.74	493	1.84	541	1.79	508	1.75	0.764
Born in Another City	450	0.43	513	0.48	493	0.44	541	0.45	508	0.43	0.513
Job with Complex Tasks	450	0.7	513	0.7	493	0.67	541	0.74	508	0.69	0.174
Children Under 18 in the Worker's HH	448	1.12	511	1.12	492	1.07	541	1.12	505	1.13	0.951
Experience (yrs)	450	11.71	513	11.23	493	11.8	541	11.3	508	11.04	0.64

Note: Analyses presented in this table do not incorporate adjustments for multiple hypothesis testing.

Table A4: Average Treatment Effects on Job Quality Indexes

	(1) Job Quality	(2) Remuneration	(3) Intensity	(4) Compliance
Export, No Reg	-0.004	0.056	-0.103	0.024
	(0.087)	(0.084)	(0.067)	(0.087)
Export, Private	0.229***	0.288***	0.075	0.229***
	(0.076)	(0.064)	(0.072)	(0.068)
Export, State	0.279***	0.317***	-0.029	0.339***
	(0.061)	(0.064)	(0.055)	(0.065)
Local Market, State	0.222***	0.133*	0.049	0.251***
	(0.073)	(0.071)	(0.071)	(0.070)
Constant	-0.146**	-0.158***	-0.001	-0.169**
	(0.063)	(0.059)	(0.049)	(0.066)
Observations	2383	2484	2491	2414

Bootstrapped cluster standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.01. The baseline category (constant) is 'Local Market, No Regulation'.

Table A5: Average Treatment Effects on Average Job Quality

	(1) Job Quality (Avg.)	(2) Remuneration (Avg.)	(3) Compliance (Avg.)	(4) Intensity (Avg.)
Export, No Reg	0.003	0.041	0.019	-0.081
	(0.040)	(0.060)	(0.037)	(0.053)
Export, Private	0.126***	0.210***	0.120***	0.059
	(0.033)	(0.046)	(0.028)	(0.057)
Export, State	0.138***	0.232***	0.171***	-0.024
	(0.027)	(0.045)	(0.027)	(0.043)
Local Market, State	0.090***	0.097*	0.115***	0.039
	(0.033)	(0.051)	(0.030)	(0.057)
Constant	0.418***	0.365***	0.516***	0.217***
	(0.027)	(0.042)	(0.028)	(0.039)
Observations	2383	2484	2414	2491

Bootstrapped cluster standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.01. The baseline category (constant) is 'Local Market, No Regulation'.

Table A6: Average Treatment Effects on Unweighted Job Quality Indexes

	(1) Job Quality (UnW)	(2) Remuneration (UnW)	(3) Compliance (UnW)	(4) Intensity (UnW)
Export, No Reg	0.011	0.039	0.022	-0.089
	(0.033)	(0.064)	(0.034)	(0.054)
Export, Private	0.121***	0.218***	0.125***	0.070
	(0.028)	(0.046)	(0.028)	(0.060)
Export, State	0.145***	0.248***	0.164***	-0.018
	(0.024)	(0.047)	(0.026)	(0.045)
Local Market, State	0.110***	0.091*	0.118***	0.046
	(0.030)	(0.055)	(0.030)	(0.060)
Constant	0.467***	0.395***	0.510***	0.254***
	(0.025)	(0.045)	(0.026)	(0.040)
Observations	2505	2355	2503	2324

Bootstrapped cluster standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.01. The baseline category (constant) is 'Local Market, No Regulation'.

Table A7: Average Treatment Effects on Job Quality Indexes with Controls

	(1) Job Quality	(2) Remuneration	(3) Compliance	(4) Intensity
Export, No Reg	-0.005	0.047	0.028	-0.105
	(0.088)	(0.083)	(0.088)	(0.067)
Export, Private	0.230***	0.285***	0.232***	0.076
	(0.076)	(0.064)	(0.067)	(0.072)
Export, State	0.280***	0.307***	0.344***	-0.030
	(0.061)	(0.063)	(0.064)	(0.055)
Local Market, State	0.223***	0.132*	0.254***	0.052
	(0.073)	(0.070)	(0.070)	(0.070)
Percent Female Workers	0.011	-0.316	0.198	-0.262
	(0.292)	(0.267)	(0.298)	(0.200)
Casablanca	-0.013	0.152**	-0.065	0.057
	(0.081)	(0.075)	(0.086)	(0.068)
Age: 21-25	-0.008	-0.186**	-0.038	0.074
	(0.113)	(0.089)	(0.110)	(0.124)
Age: 26-30	0.013	-0.209**	0.017	0.036
	(0.104)	(0.090)	(0.101)	(0.116)
Age: 31-35	0.036	-0.220**	0.036	0.021
	(0.114)	(0.101)	(0.116)	(0.112)
Age: 36-40	0.018	-0.147	0.046	0.010
	(0.127)	(0.092)	(0.120)	(0.117)
Age: 41-45	0.065	-0.100	0.015	0.115
	(0.115)	(0.098)	(0.115)	(0.119)
Age: 46-50	-0.008	-0.178*	-0.004	-0.063
	(0.137)	(0.101)	(0.129)	(0.140)
Age: 51-55	0.033	-0.098	0.113	-0.150
	(0.151)	(0.115)	(0.146)	(0.157)
Age: 56-60	0.021	0.090	0.024	-0.019
	(0.173)	(0.181)	(0.174)	(0.195)
Age: 61-Older	-0.133	-0.579***	-0.100	-0.104
	(0.302)	(0.206)	(0.400)	(0.464)
Constant	-0.168	0.179	-0.299	0.128
	(0.215)	(0.197)	(0.220)	(0.165)
Observations	2383	2484	2414	2491

Bootstrapped cluster standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.01. The baseline categories for categorical variables are 'Local Market, No Regulation', 'Age 18-20' and 'Tanger'.

Table A8: Formal Test of Equality on the Intensity Index

	Test Statistic	Bonf. p-value
$\beta_{Ex,NoReg} = \beta_{Loc,NoReg}$	-1.549	0.656
$\beta_{Ex,NoReg} = \beta_{Ex,Private}$	-2.647	0.054*
$\beta_{Loc,NoReg} = \beta_{Loc,State}$	0.696	1.000
$\beta_{Ex,NoReg} = \beta_{Loc,State}$	-2.046	0.238
$\beta_{Ex,Private} = \beta_{Ex,State}$	1.794	0.385

Bonferroni adjustment for 5 statistical comparisons. * p<0.10, ** p<0.05, *** p<0.01

Table A9: Formal Test of Equality on the Remuneration Index

	Test Statistic	Bonf. p-value
$\beta_{Ex,NoReg} = \beta_{Loc,NoReg}$	0.668	1.000
$\beta_{Ex,NoReg} = \beta_{Ex,Private}$	-3.462	0.007***
$\beta_{Loc,NoReg} = \beta_{Loc,State}$	1.881	0.345
$\beta_{Ex,NoReg} = \beta_{Loc,State}$	-0.963	1.000
$\beta_{Ex,Private} = \beta_{Ex,State}$	-0.574	1.000

Bonferroni adjustment for 5 statistical comparisons. * p<0.10, ** p<0.05, *** p<0.01

Table A10: Formal Test of Equality on the Compliance Index

	Test Statistic	Bonf. p-value
$\beta_{Ex,NoReg} = \beta_{Loc,NoReg}$	0.274	1.000
$\beta_{Ex,NoReg} = \beta_{Ex,Private}$	-2.973	0.025**
$\beta_{Loc,NoReg} = \beta_{Loc,State}$	3.587	0.003***
$\beta_{Ex,NoReg} = \beta_{Loc,State}$	-2.899	0.026**
$\beta_{Ex,Private} = \beta_{Ex,State}$	-2.012	0.266

Bonferroni adjustment for 5 statistical comparisons. * p<0.10, ** p<0.05, *** p<0.01

Table A11: Average Treatment Effects on individuals Job Quality Dimensions

	(1) Bonuses	(2) Min. Wage	(3) Soc. Security	(4) Contracts	(5) Safety	(6) FoA	(7) Unpaid Overt.	(8) Pace	(9) Tired
Export, No Reg	0.019	0.062	0.042	-0.044	0.115**	-0.002	-0.003	-0.108**	-0.053
	(0.066)	(0.062)	(0.056)	(0.058)	(0.053)	(0.050)	(0.047)	(0.055)	(0.059)
Export, Private	0.196***	0.215***	0.220***	-0.025	0.295***	0.068	0.081*	0.049	0.069
	(0.045)	(0.055)	(0.043)	(0.058)	(0.041)	(0.046)	(0.043)	(0.057)	(0.066)
Export, State	0.243***	0.219***	0.296***	-0.020	0.358***	0.164***	0.061	-0.020	-0.026
	(0.049)	(0.052)	(0.044)	(0.052)	(0.044)	(0.043)	(0.041)	(0.045)	(0.050)
Local Market, State	0.088	0.101*	0.132***	0.044	0.199***	0.095*	0.117***	0.031	0.047
	(0.058)	(0.053)	(0.046)	(0.063)	(0.049)	(0.051)	(0.043)	(0.055)	(0.064)
Constant	0.386***	0.348***	0.557***	0.403***	0.518***	0.454***	0.608***	0.346***	0.089**
	(0.046)	(0.047)	(0.044)	(0.048)	(0.041)	(0.043)	(0.043)	(0.038)	(0.045)
Observations	2497	2492	2488	2481	2489	2482	2488	2497	2499

Bootstrapped cluster standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.01. The baseline category (constant) is 'Local Market, No Regulation'.

Table A12: Average Treatment Effects on Job Quality Indexes: Multiple Hypotheses Testing

	(1) Job Quality	(2) Remuneration	(3) Compliance	(4) Intensity
Export, No Reg	-0.004	0.056	0.024	-0.103
	(0.085)	(0.082)	(0.084)	(0.067)
	[1.000]	[1.000]	[1.000]	[0.856]
	{0.965}	{0.965}	{0.965}	{0.599}
Export, Private	0.229	0.288	0.229	0.075
	(0.075)***	(0.063)***	(0.067)***	(0.071)
	[0.024]**	[0.000]***	[0.008]***	[1.000]
	{0.023}**	{0.000}***	{0.008}***	{0.880}
Export, State	0.279	0.317	0.339	-0.029
	(0.059)***	(0.062)***	(0.062)***	(0.055)
	[0.000]***	[0.000]***	[0.000]***	[1.000]
	{0.000}***	{0.000}***	{0.000}***	{0.965}
Local Market, State	0.222	0.133	0.251	0.049
	(0.074)***	(0.070)*	(0.071)***	(0.072)
	[0.023]**	[0.493]	[0.004]***	[1.000]
	{0.023}**	{0.399}	{0.004}***	{0.965}
Constant	-0.146	-0.158	-0.169	-0.001
	(0.061)**	(0.058)***	(0.063)***	(0.049)
Observations	2383	2484	2414	2491

The baseline category (constant) is 'Local Market, No Regulation'. Bootstrapped cluster standard errors in parentheses (* p<0.10, ** p<0.05, *** p<0.01). Bonferroni adjusted p-value for 16 hypothesis tests in square brakets, Sidak-Holm adjusted p-values for 16 hypothesis tests in curly brakets. We test 16 hypothesis that correspond to 4 treatment coefficient over 4 dependent variables.

Table A13: Average Treatment Effects including job complexity as a control variable

	(1) Job Quality Index
Export, No Reg	0.003
	(0.089)
Export, Private	0.237***
	(0.075)
Export, State	0.293***
	(0.062)
Local Market, State	0.230***
	(0.072)
Complex Jobs=0	0.000
	(0.000)
Complex Jobs=1	0.176***
	(0.049)
Constant	-0.277***
	(0.078)
Observations	2383

To note that our main treatment effects are consistent with our baseline results. Bootstrapped cluster standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.01. The baseline categories for categorical variables are 'Local Market, No Regulation', 'Age 18-20' and 'Tanger'.

Table A14: Bounding the plausible strength of unobserved confounders relative to job complexity

Bound	$R^2_{dz.x}$	$R^2_{yz.dx}$	Coef.	S.E.	$t(H_0)$	Lower CI	Upper CI
1x Job Complexity	0.0010	0.0056	0.2295	0.0622	3.6906	0.1076	0.3514
5x Job Complexity	0.0052	0.0281	0.2000	0.0616	3.2460	0.0792	0.3208
10x Job Complexity	0.0104	0.0562	0.1629	0.0609	2.6761	0.0435	0.2822
13x Job Complexity	0.0136	0.0731	0.1405	0.0604	2.3262	0.0221	0.2590

The roboustness value (RV) for our the export-private treatment is 0.0751, indicating that unobserved confounders that explain more than 7.51 percent of the residual variance of both the treatment and the outcome are strong enough to bring the point estimate to 0. Unobserved confounders that explain more than 3.71 percent of the residual variance of both the treatment and the outcome are strong enough to bring the estimate to a range where it is no longer 'statistically different' from 0. The table above shows this maximum strength of association of unobserved confunders bounded by a multiple of the observed explanatory power of Job Complexity, our chosen benchmark covariate. Since the values reported in $R^2_{yz.dx}$ are below the robustness value, confounders as strong as 13 times as job complexity are not sufficient to explain away the observed estimated effect.

Table A15: Controlling for selection bias: migration status, job variety and job stability

	(1) Job Quality	(2) Job Quality	(3) Job Quality	(4) Job Quality	(5) Job Quality
Export, No Reg	-0.004	-0.002	-0.049	0.099	0.171
	(0.087)	(0.085)	(0.109)	(0.111)	(0.160)
Export, Private	0.229***	0.231***	0.227**	0.311***	0.290**
	(0.076)	(0.075)	(0.106)	(0.104)	(0.144)
Export, State	0.279***	0.272***	0.297***	0.356***	0.191
	(0.061)	(0.061)	(0.086)	(0.086)	(0.116)
Local Market, State	0.222***	0.224***	0.228**	0.381***	0.334***
	(0.073)	(0.073)	(0.097)	(0.090)	(0.129)
Migrant		0.046	0.038	0.048	0.045
		(0.039)	(0.091)	(0.039)	(0.039)
Variety: Important		0.202***	0.202***	0.376***	0.203***
		(0.043)	(0.044)	(0.094)	(0.044)
Stability: Important		0.057	0.059	0.062	0.120
		(0.050)	(0.049)	(0.050)	(0.099)
Export, No Reg × Migrant			0.109		
			(0.104)		
Export, Private × Migrant			0.010		
			(0.140)		
Export, State × Migrant			-0.056		
			(0.117)		
Local Market, State × Migrant			-0.011		
			(0.126)		
Export, No Reg × Variety: Important				-0.216	
				(0.132)	
Export, Private × Variety: Important				-0.167	
				(0.129)	
Export, State × Variety: Important				-0.177	
				(0.125)	
Local Market, State × Variety: Important				-0.333***	
				(0.099)	
Export, No Reg × Stability: Important					-0.215
					(0.161)
Export, Private × Stability: Important					-0.074
					(0.158)
Export, State × Stability: Important					0.100
					(0.121)
Local Market, State × Stability: Important					-0.139
					(0.138)
Constant	-0.146**	-0.308***	-0.306***	-0.395***	-0.358***
	(0.063)	(0.083)	(0.091)	(0.096)	(0.111)
Observations	2383	2383	2383	2383	2383

Bootstrapped cluster standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.01. The baseline categories for categorical variables are 'Local Market, No Regulation' and 'Not Very Important'. The lack of statistical significance of the interaction of 'Export, Private' with the confounding variables, suggests that the impact of the treatment is the same across various levels of the confounding variables.

Figure A1: Detailed Intensity Expectations

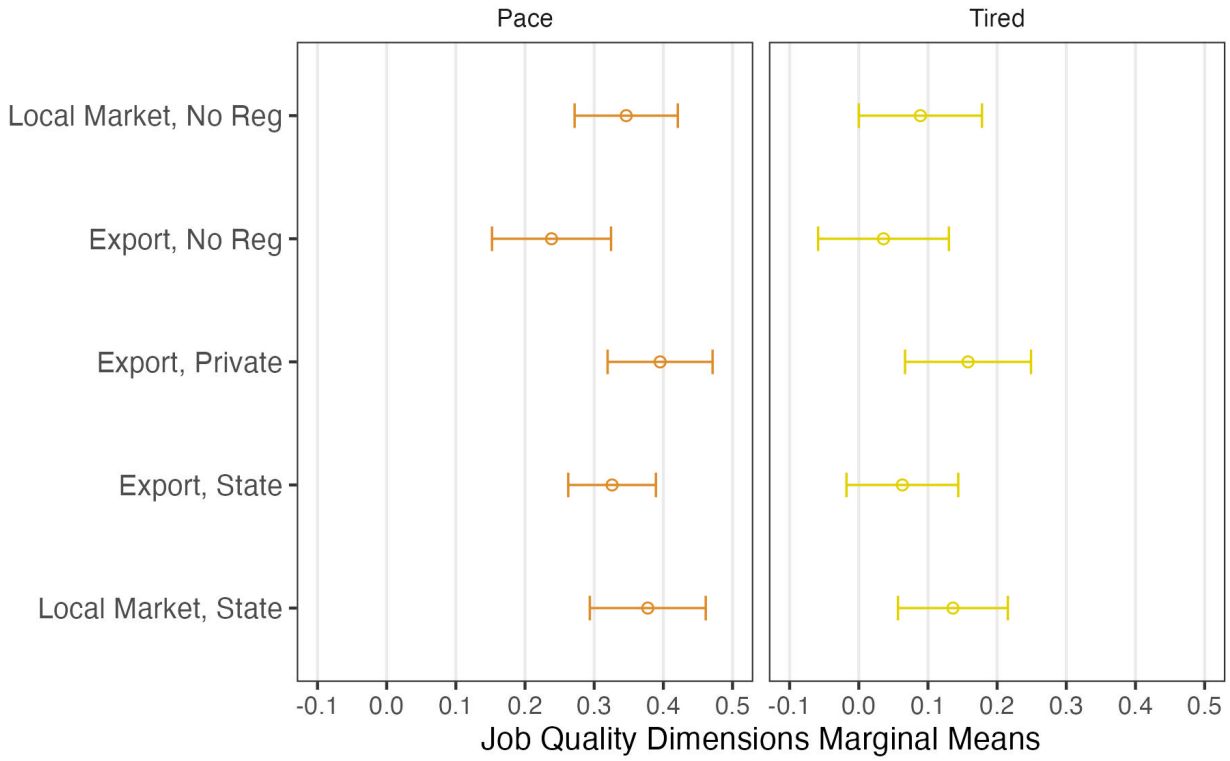


Figure A2: Detailed Remuneration Expectations

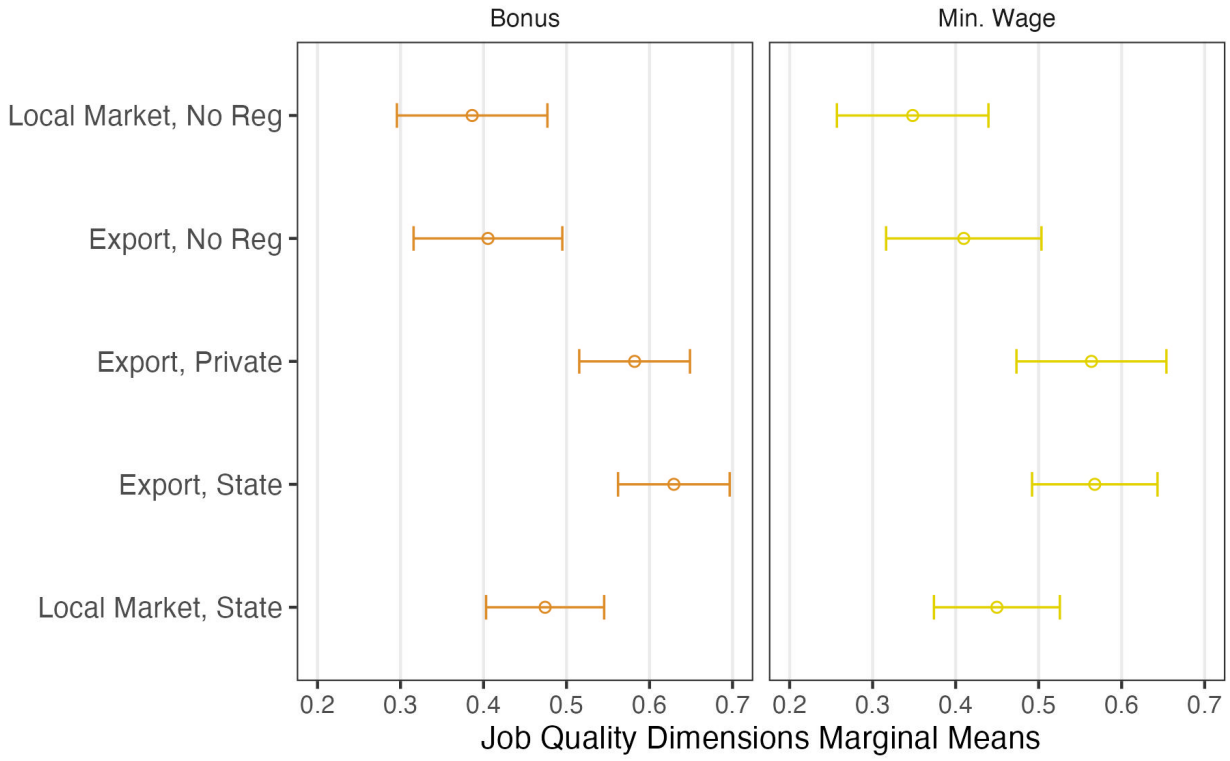
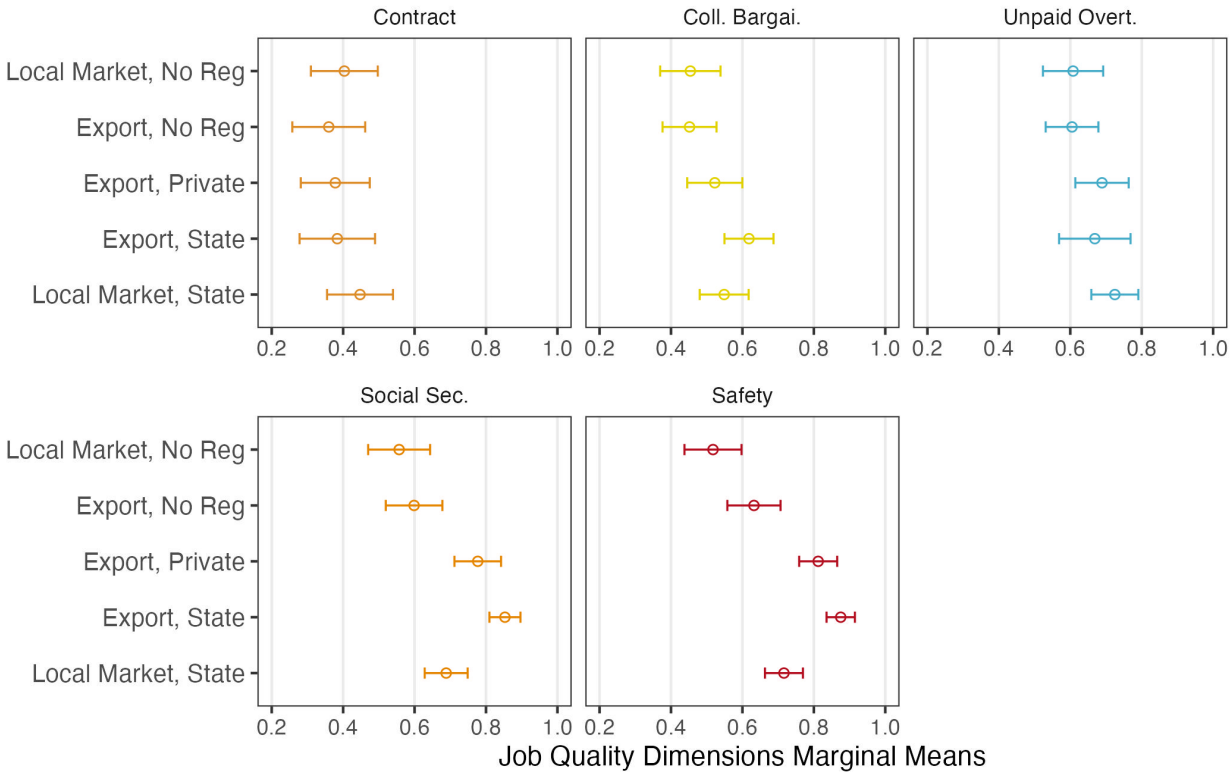


Figure A3: Detailed Compliance Expectations



Pre-registration

We posted an anonymized version of the pre-analysis online before fielding the survey. In our pre-registration, we committed to publish our survey results in two distinct research papers. We include the portions of our pre-analysis plan pertinent to the survey experiment and the analysis presented in ”Exporting, Firm-specific Institutions, and Labor Conditions: Evidence from Garment Industry Workers.”

Overview

We will field a survey focused on the preferences and views of workers in global value chains. The survey has two main sections. We plan on reporting the results in at least two separate research papers.

We first describe the sampling and implementation that is shared across the two parts. Then we describe the specific motivation and hypotheses for each analysis.

Survey Sampling, Implementation and Design Overview

Our sample will be drawn from workers in Moroccan factories that produce for a large apparel company, which we call the “buyer.” This buyer has facilitated access to its supplier factories. We intend to survey approximately 2,500 workers. To draw a representative sample of workers, we use a two-stage cluster sampling (2SCS) design. We have obtained a list of all factories that produce for the buyer in Morocco (sampling frame). Within this universe of factories, we focus on two cities—Casablanca and Tangier—because they have the largest concentrations of factories (82% of the all the factories). We will draw a sample of 50 factories from the sampling frame with probability proportional to size (PPS) approach. As a result, the sampling design is (approximately) self-weighting as all the workers in the final sample have the same probability of being selected. The PPS sampling is stratified by geography and size (measured by the number of workers) with allocation to each stratum proportional to size. We excluded from our sample factories with fewer than 60 workers.

Within each sampled factory, we will randomly sample production workers. We will not include employees whose primary work on the day of the survey is supervising other employees. The sample within each factory will be stratified by production area and gender.

The survey will be implemented face-to-face in Arabic by teams of local enumerators. The survey team will ask randomly sampled workers to participate using a recruitment script and then the enumerators will obtain respondents' consent. Enumerators will then proceed through the survey using a tablet to enter the responses.

In addition to the elements described below, the survey also includes a number of descriptive questions about worker preferences and worker's views of participation. We will use the answers to these questions to contextualize our findings and provide insight into policy debates. (Please see the attached survey in Arabic and English at the end of this document.)

Prior to designing the survey, we conducted fieldwork in Morocco (in 2019) that included open-ended interviews with workers and managers in garment factories. This fieldwork informed the survey design. We piloted a version of the survey in three factories (68 respondents) in April 2022. We used the pilot to inform sampling strategy within the factories, to test respondent ability to understand the questions, and to assess the time needed to complete the survey.

Part 1: Valuing Work Attributes in a Choice Experiment

We do not report this here as it is not relevant to this paper.

Part 2: Private and State Regulation

The second part of the survey examines how a factory's sales to domestic vs. foreign markets and regulation by either government or private firms (buyers) influences worker perceptions of job quality. We will include a survey experiment with a set of treatments regarding exporting, state regulation, and private regulation. The text of the experiment will be: *We want to ask you one more set of questions about an imaginary factory. Imagine you have a friend who is looking for a job in a factory. He/she received an offer from a factory here in Tanger/Casablanca. The factory is owned by a Moroccan company, has been operating for 2 years and employs 65 workers. Your friend heard that:*

Treatment 1: The factory produces garments for [the local market that are purchased by a Moroccan buyer]. The factory has [not been visited by any programs that verify factory compliance with labor standards.]

Treatment 2: The factory produces garments [for the local market that are purchased by a Moroccan a buyer]. The factory has [been visited as part of a Ministry of Labor program to verify factory compliance with labor standards in the industry].

Treatment 3: The factory produces garments for [export to Europe that are purchased by buyer from Germany]. The factory has [not been visited by any programs that verify factory compliance with labor standards].

Treatment 4: The factory produces garments [for export to Europe that are purchased by buyer from Germany]. The factory has [been visited as part of a Ministry of Labor's program to verify factory compliance with labor standards in the industry].

Treatment 5: The factory produces garments [for export to Europe purchased by buyer from Germany]. The factory has [been visited as part of a buyer's program to verify factory compliance with labor standards in its suppliers].

Your friend is seeking your advice. How much you would you agree or disagree with the following statements about likely aspects of the job? Please take your best guess given the information you have about the factory.

[NOTE: RANDOMIZED ORDER]

Attribute	**Disagree (-1)**	**Unsure (0)**	**Agree (1)**
The factory gives workers large bonuses	☐	☐	☐
The factory pays most workers more than the minimum wage.	☐	☐	☐
The factory always makes full social security payments for all workers	☐	☐	☐
The factory is very safe	☐	☐	☐
Workers sometimes are not paid for their extra time when they work late	☐	☐	☐
The factory does not provide a written contract to all workers	☐	☐	☐
Workers in the factory can negotiate their salaries with their employers as a group	☐	☐	☐
The pace of production is uncomfortably fast	☐	☐	☐
Workers are very tired at the end of the work day	☐	☐	☐

We will create a single index out of these variables called "job quality" by creating an inverse covariance weighted index from the responses to the questions in the block (reverse coding work without pay, written contract, uncomfortable production speed, and workers being tired). We will also create three subindices from the responses to the specific elements.

1. Renumeration ("pay" and "bonuses");
2. Compliance ("social security", "safety," "unpaid wages", "written contract", "collective bargaining");
3. Intensity ("pace", "tired")

We will test the following main hypothesis

H1	Respondents expect higher levels of job quality in factories that export to Europe than in factories that sell to the domestic market.
H2	Respondents expect higher levels of job quality in export factories that are visited by European buyers to verify labor standards than export factories that are not visited by such programs.
H3	Respondents expect higher levels of job quality in factories producing for the domestic market that are visited by government regulators than factories producing for domestic markets that are not visited by such programs.
H4	For exporting factories, the effect of being verified by the buyer is greater than the effect of being verified by the state.
H5	Respondents expect higher levels of job quality in export factories that are not visited by a state or private regulator than factories producing for the domestic market are visited by state regulators.

We will also test these hypotheses using the three subgroups of the index. These will be ancillary hypothesis tests. Our hypothesis tests with the lowest power will involve contrasting two means in the smallest cells. With a sample size of 2500 we have approximately 500 respondents in each treatment. With this number of respondents, we have a 0.8 power for a two-sample test with an effect size of 0.18.