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DISCUSSION
PAPER

Sexual Harassment: Causes and Remediation

Evidence from
Better Factories Cambodia

SEPTEMBER 2020

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Abstract

Sexual harassment in the workplace is common, with an estimated 40-60 percent of women and 10 percent of men being harassed at work. Empirical evidence from social psychology emphasizes social norms, power, accountability and organizational tolerance as the key determinants of sexual harassment. Economic theory indicates that misaligned incentives expose workers to *quid pro quo* sexual harassment. Low powered incentives for supervisors and high-powered incentives for workers increase sexual harassment.

In order to test these theories, we conduct a quasi-experiment with a social compliance program that induces exogenous variation in norms, power, organizational tolerance, reporting systems and worker pay. We measure the impact of the treatment effect of the program on the theoretical variables and the factory structure and how those variables impact sexual harassment.

The social compliance program is Better Factories Cambodia (BFC). BFC, introduced in 2001, is a program of the ILO and IFC that assesses factories against core labour standards and Cambodian labour law. Factories are additionally provided training and advisory services designed to improve the factory systems that determine compliance.

The study was conducted between 2015 and 2018 with 57 participating apparel and footwear factories. The study began with a baseline survey of workers, supervisors and managers. Factories were then stratified based on the number of completed annual assessments. To achieve identification, factories within each stratum were randomly assigned to one of seven data collection and survey timelines. As a results of random assignment, we surveyed pairs of factories with similar program histories except that one had just completed an assessment and the other had not. We also surveyed pairs of factories with similar program histories but with one that had just had an assessment and the other had several months elapse after an assessment before data collection. The first set of comparisons identify the effect of an assessment and the second set of comparisons identify program curing or decay.

Data was analysed using a difference in difference estimator to measure the reduced form treatment effect. SEM analysis was then employed to explore the theoretical links and identify the points of entry of the program into the determinants of sexual harassment.

We find a strong pattern of treatment effects on incentive pay for workers, the factory's HR manager's reported awareness of sexual harassment, incidences of sexual talking and touching and supervisors seeking a sexual relationship with workers.

We find strong evidence for the theory that incentives, power and organizational tolerance determine sexual harassment. Further, the main channel of the program on sexual harassment is through pay incentives. Enforcement of minimum wage laws reduces the fraction of worker

pay that is linked to productivity. Reducing productivity-linked pay, in turn, reduced vulnerability to *quid pro quo* sexual harassment.

Keywords: sexual harassment, apparel factories, pay incentives, social norms, Better Factories Cambodia

INTRODUCTION

Sexual harassment is a widespread phenomenon present in many workplaces. While figures on the prevalence of sexual harassment vary by context, country, and survey method, one overall estimate is that 40-60 percent of women and ten percent of men have experienced sexual harassment at work (Maas, Cadinu, & Galdi, 2013). Figures reported from garment factories in global supply chains vary widely, with only 2.4 percent of workers in factories in Vietnam but 84.4 percent of workers in factories in Indonesia reporting some concern with sexual harassment (Brown et al., 2016).¹

Negative effects of workplace abuse include lower job satisfaction and organizational commitment, and adverse psychological effects such as anxiety, fear, and sleep disturbance (Barling, Rogers, & Kelloway, 2001; Barling, VandenBos, & Bulatao, 1996; Fitzgerald, Drasgow, Hulin, Gelfand, & Magley, 1997; Lapierre, Spector, & Leck, 2005; O'Leary-Kelly, Paetzold, & Griffin, 2000). Organizations that tolerate sexual harassment are less productive and pay a compensating differential, rendering firms with abusive conditions less profitable (Lin et al., 2014; Cici, et al. 2019).

Workplace mistreatment necessarily takes place within an organizational and social context (Hershcovis & Reich, 2013). The structure of incentives and the extent to which the interests of employees, both workers and supervisors, are aligned with the organization affects the focus of supervisor attention and their strategies to incentivize effort by subordinates. The structure of incentives interacts with social factors such as organizational norms and dehumanization to determine worker experiences of sexual harassment.

The purpose of our research is to analyse how organizational practices, particularly related to pay, interact with social structures, including power, organizational norms, organizational tolerance and grievance procedures, to determine worker perceptions of sexual harassment at work and to explore how an intervention intended to improve pay practices and promote organizational norms deterring sexual harassment alter organizational processes determining abuse.

We conducted a randomized controlled trial of a workplace-based intervention, Better Factories Cambodia (BFC), in 57 apparel factories in Cambodia that was designed to monitor social compliance with core labour standards and Cambodian labour law. Cambodian apparel and footwear factories enrolled in BFC are subject to annual inspections or assessments by enterprise advisors and may select training and advisory services. Social audits introduced in an experimental context can introduce exogenous variation in factory management and social

¹ A recent study by CARE International found that 43.1 percent of garment workers in Vietnam reported one episode of violence or sexual harassment in the preceding year. <https://www.theguardian.com/global-development/2019/apr/07/violence-sexual-abuse-vietnam-garment-factory>

context that expose both the effectiveness of social audits and the process through which audits have their effect on sexual harassment.

Factories were randomly assigned to one of seven treatment and data collection timelines in order to achieve identification. Data were analysed using difference-in-difference calculations and structural equation modelling (SEM).

This type of analysis applied to data from a randomized control trial answers a call for alternatives to the cross-sectional surveys commonly utilized in the harassment literature (Neall & Tuckey, 2014). Using SEM allows us to characterize the empirical relationship between organizational and social structures and identify the points of entry of an intervention and the subsequent causal linkages that ultimately determine sexual harassment.

Our findings indicate that pay practices are a significant determinant of harassment at work. High-powered incentives for workers create a vulnerability to *quid pro quo* sexual harassment by supervisors and managers. *Quid pro quo* sexual harassment occurs when supervisors or managers reward sexual contact with pay, bonuses or promotions. Sexual harassment in all its forms is also deterred when workers have a sense of agency, but is more likely to occur in organizations in which sexual harassment is tolerated.

Sexual harassment declined with successive BFC assessments. One of the effects of BFC is to induce compliance with minimum wage payments on regular hours of work. This has the effect of reducing the proportion of pay that is incentive-based. The reduction in incentive pay reduces worker vulnerability specifically to *quid pro quo* sexual harassment. Thus, the treatment effect of BFC remediating sexual harassment appears to have been principally mediated by improved compliance with domestic labour law related to pay.

ANALYTICAL FRAMEWORK

Research from the fields of economics, organizational behaviour and social psychology has found that sexual harassment is predicted by a combination of organizational and personal factors (O'Leary-Kelly et al., 2000; Pina, Gannon, & Saunders, 2009; Pryor, Giedd, & Williams, 1995). Below, we explore the roles of a) factors around employee pay and productivity, such as incentive structures and pay clarity, b) organizational factors such as organizational tolerance of sexual harassment, outcome dependence, social norms, and accountability, and c) individual factors such as dehumanization and perceptions of power. The existing literature forms the basis of the theoretical model used to guide the analysis.

Definitions and relationships. According to ILO Convention 190, “‘violence and harassment’ in the world of work refers to a range of unacceptable behaviours and practices, or threats thereof, whether a single occurrence or repeated, that aim at, result in, or are likely to result in physical, psychological, sexual or economic harm, and includes gender-based violence

and harassment.” Further, “‘gender-based violence and harassment’ means violence and harassment directed at persons because of their sex or gender, or affecting persons of a particular sex or gender disproportionately, and includes sexual harassment.”² Academic researchers have proposed a three-factor model of sexual harassment consisting of sexual coercion (similar to *quid pro quo* harassment, and including sexual blackmail and threats), unwanted sexual attention (including touching and sexual comments), and gender harassment (including sexist remarks) (Fitzgerald, Gelfand, & Drasgow, 1995; Fitzgerald & Hesson-McInnis, 1989; but see Nye, Brummel, & Drasgow, 2014). Analysis below addresses all three forms of harassment.

Incentive pay. The structure of incentives in a firm affects not just productivity and profit (Freeman & Kleiner, 2005; Shearer, 2004), but the likelihood of sexual harassment as well. When the allocation of bonuses depends on a supervisor’s subjective determination rather than objective criteria, supervisors may engage in *quid pro quo* sexual harassment: The worker must provide sexual favours in return for having her production bonus approved (Lin et al., 2014). Indeed, Truskinovksy et al. (2013) found that sexual harassment was more likely when incentives were misaligned (i.e., workers were rewarded based on effort but supervisors were not) and supervisors determined whether workers received production bonuses. Building on this work with a formal theoretical model, Lin et al. (2014) found that workers who had a production target were more likely to report sexual harassment, presumably because this created a vulnerability to harassment from the supervisors who monitored and certified their productivity. Workers were also more likely to report harassment when supervisors received higher pay (either in terms of total compensation or incentives), indicating that power asymmetries may contribute to sexual harassment.

We hypothesize, then, that an intervention that emphasizes complying with laws regulating pay for regular hours would decrease incentive pay as a fraction of total pay. In turn, we also expected that these incentives might decrease sexual harassment by reducing vulnerability to *quid pro quo* harassment. To the extent that they exist, we also expected that incentive pay for supervisors would reduce sexual harassment (because supervisors who are rewarded for their workers’ productivity are motivated to let them work). Though it is a possibility that supervisors may use sexual harassment to create a hostile environment that intimidates workers into exerting more effort.

Social norms. People develop a sense of what is acceptable and normative within a setting based on the actions of other people in that environment. Through social learning (Bandura, 1978), people acquire a repertoire of behaviours that they expect will lead to a

² C190 - Violence and Harassment Convention, 2019 (No. 190).

desired outcome. For example, social norms that promote objectification of women predict sexual harassment (Maass et al., 2013). Social norms may vary by organization level such that there are strong norms against harassment at the upper levels of a firm but more tolerant norms at the worker or supervisor level (Murdoch, Pryor, Polusny, Gackstetter, & Ripley, 2009; O'Leary-Kelly, Tiedt, & Bowes-Sperry, 2004). We anticipated that permissive social norms would predict sexual harassment by creating an atmosphere in which these behaviours are not condemned.

Organizational tolerance of sexual harassment. Organizational tolerance is the extent to which employees perceive that perpetrators of sexual harassment will not face negative consequences, instead, those report harassing behaviour will be targeted. Organizational tolerance has long been a key part of the organizational context in models that predict the prevalence and responses to sexual harassment (Fitzgerald, et al., 1995; Nye et al., 2014). In a meta-analysis on the antecedents of sexual harassment, organizational tolerance consistently predicted sexual harassment, with effect sizes ranging from a Pearson r correlation of $r = 0.18$ for military settings to $r = 0.30$ for other occupational settings (Cantisano, Dominguez, & Depolo, 2008). It is worth noting that workers who have experienced sexual harassment and those who have not provide similar ratings of organizational tolerance (Pryor et al., 1995; Fitzgerald et al., 1997), indicating that it is not that experiencing sexual harassment makes workers perceive the organization as more tolerant of such behaviours, but rather that organizational tolerance increases the likelihood of sexual harassment. An intervention targeting discrimination, particularly based on gender, might increase awareness of the presence of sexual harassment and erode organizational tolerance of sexual harassment.

Accountability. Accountability in the workplace refers to an employee's expectation that their decisions or actions are subject to evaluation by a salient audience with the power to reward or punish (Frink & Klimoski, 2004; Hall & Ferris, 2011; Hall, Frink & Buckley, 2017). Accountability has many positive effects. For example, employees who were held accountable to supervisors based on their performance were more likely to pay attention to the needs of others in their work teams compared to employees who were not held accountable. They also reported greater satisfaction and success in their teams (Fandt, 1991). Although accountability has negative outcomes when workers are accountable to abusive supervisors (Breux, Perrewé, Hall, Frink, & Hochwarter, 2008), accountability reduces bias when supervisors are accountable to management for their decisions and behaviour toward lower-status individuals (Ford, Gambino, Mayo, & Ferguson, 2004). High organizational accountability is also associated with less sexual harassment (Fredericksen & McCorkle, 2013; O'Leary-Kelly et al., 2000), particularly when accountability is consistent and accompanied by clear and unambiguous guidelines for role and behaviour expectations (Maass et al., 2013; O'Leary-Kelly et al., 2004).

Power. Power can be defined as the relative control over another's desired outcomes, often due to the asymmetric distribution of resources and capacity of one party to evaluate performance and dispense rewards or penalties to another (Galinsky, Magee, Inesi, & Gruenfeld, 2006; Keltner, Gruenfeld, & Anderson, 2003). Higher levels of power predict a wide array of social behaviours, including disinhibited behaviour (Keltner et al., 2003), decreased perspective-taking (Galinsky et al., 2006), and dehumanization (Lammers & Stapel, 2011). For men with a high likelihood to sexually harass, there can be a mental association between the concepts of power and sex. When primed with the concept of power, these men reported finding a female subordinate more attractive compared to men who received a neutral prime or men with a low proclivity to harass (Bargh, Raymond, Pryor & Strack, 1995). Power is key to social dynamics in hierarchical workplaces like factories, and greater disparities in power are linked to higher rates of sexual harassment (Ilies, Hauserman, Schwochau, & Stibal, 2003). Therefore, we included power as a potential predictor of worker perceptions of social norms, accountability, dehumanization and organizational tolerance.

METHOD

Research Context. In order to explore whether sexual harassment is causally determined by pay incentives and organizational factors, we need to induce exogenous variation in these firm characteristics. We accomplished this objective by studying the introduction of an intervention in Cambodian apparel and footwear factories intended to improve social compliance with a number of factors related to pay practices and treatment of workers. To this end, we use data from the impact evaluation of Better Factories Cambodia (BFC).³

Better Factories Cambodia is a program jointly introduced in 2001 by the governments of Cambodia and the United States. All apparel and footwear factories in Cambodia seeking an export license must be enrolled. Enrolled factories are subject to annual assessments of working conditions by ILO enterprise advisors. Factories are assessed against core labour standards and national labour law. In addition, factories can optionally choose trainings and advisory services that develop capacity within the organization.

The impact evaluation data were collected from 57 factories between 2015 and 2018. At the beginning of the study, factories were already enrolled in BFC and most had either not had their first assessment or had one assessment. The study began with a baseline data collection of a random selection of workers and the human resource manager. Workers in this study are predominantly stitchers, packers or helpers. In the course of the data collection, workers were surveyed on a set of measures of sexual harassment experiences and organizational norms. The HR manager was also surveyed on indicators of social norms and pay practices with regard

³ Additional information is available at <https://betterwork.org/where-we-work/cambodia/>

to workers and supervisors. In particular, we were interested in the fraction of pay for each class of employees that is incentive based, as opposed to pay for regular hours.

After the baseline, factories participated in their next scheduled assessment. The exact timing of each assessment will be discussed below. The study concluded with an endline data collection in which we re-measured indicators of sexual harassment, organizational norms and pay practices.

Treatment. For the purposes of this study, an assessment cycle and the interactions between BFC and a factory between assessment cycles is taken as the treatment. During an assessment and in the period after an assessment, BFC and the factory collaborate to develop strategies to come into compliance on eight broad working conditions categories. Among these are pay practices, particularly compliance with the minimum wage, and non-discrimination, which includes sexual harassment.

Identification. Random assignment to treatment and control groups was not feasible given the legal requirement that factories seeking an export license must be enrolled in BFC. Thus, in order to achieve identification, we manipulate the timing of program exposure using a methodology similar to Miguel and Kramer (2004).

The study introduces two sources of exogenous variation. The first exogenous variation is achieved through randomizing the window between assessment cycles. BFC assesses factories approximately once per year. However, in practice, the time that elapses for any two assessment cycles may range between 11 and 15 months.

The study began with a baseline data collection in each participating factory. At the time of the baseline, the participating factories were stratified based on the number of previously completed assessment cycles. Within each stratum, factories were randomly assigned to one of two groups. The first group would receive the next assessment cycle around 11 months following their most recent previous assessment cycle. The second group would receive the next assessment cycle around 15 months after their previous one.

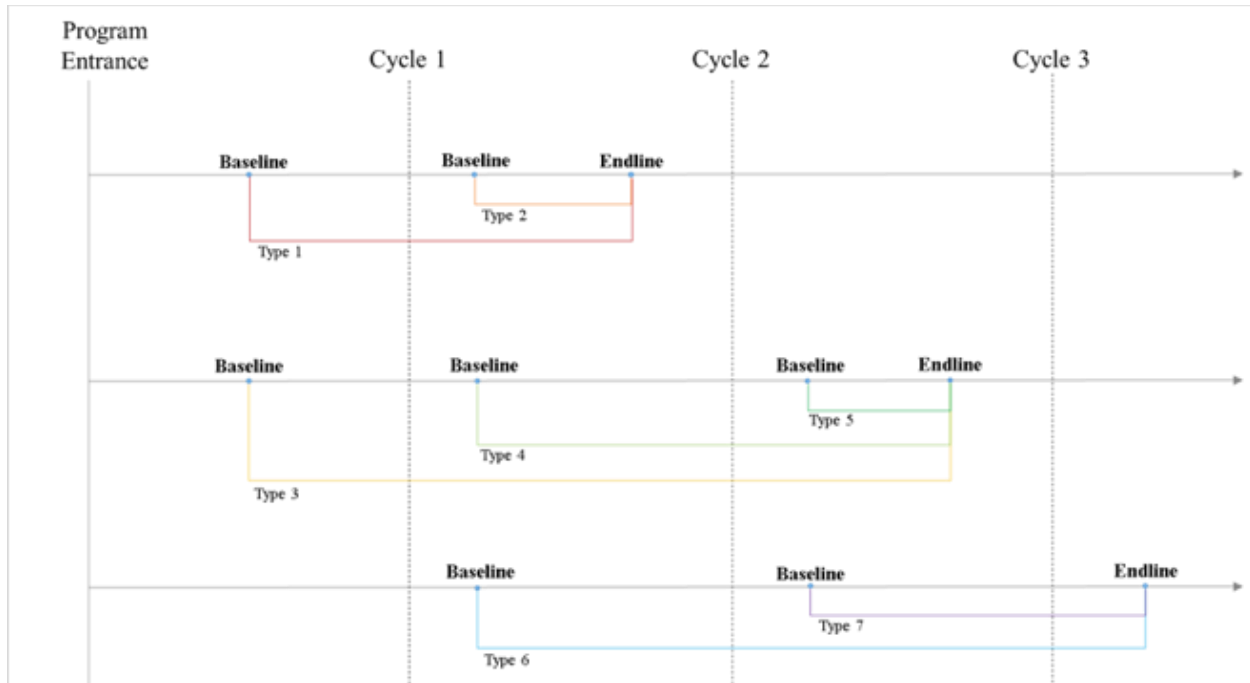
The second source of exogenous variation is achieved by randomly assigning factories to the elapsed time between data collections. The window between assessment cycles and survey data collection is randomly assigned to measure the possible curing or decay effect of an assessment cycle. Factories within each stratum were randomly assigned to have their next data collection two months before the next assessment cycle, two months after the next assessment cycle, six months after the next assessment cycle, eight months after the next assessment cycle or twelve months after the next assessment cycle.

As a consequence of randomizing the assessment cycle interval, we may have two factories that have their data collection at the same time but one has had their next assessment cycle while the other has not. For example, consider two factories that have had their i^{th}

assessment cycle. One of them is assigned to have their next assessment cycle at month 11 and their next data collection at month 13, two months after the assessment cycle. The other is assigned to have their next assessment cycle at month 15 and their data collection at month 13, two months before their next assessment cycle. That is, the data are collected at the same time but one just after the $i+1$ assessment cycle and the other just before the $i+1$ assessment cycle. A comparison of the two factories is the impact of the $i+1$ assessment cycle.

As a consequence of randomizing the data collection, we may have two factories that have had their i^{th} assessment cycle, but one has their data collection two months after the assessment and the other had their data collection eight months after the assessment cycle. A comparison of the two factories is the impact of six months of curing or decay after the i^{th} assessment cycle.

Figure 1: Experimental Design



As a consequence of the assignment to the assessment and data collection timeline, there are seven types of factory groups, as shown in Figure 1. Consider the first factories that had data collections around the time of assessment **Cycle 1** at the top left corner of the figure. Some of the factories in this stratum had their baseline just before the first assessment. These factories are indicated as Type 1. Other factories in this stratum had their baseline just after the first assessment. All factories then had an endline data collection about the same time but before the second assessment. A comparison of the endline to the baseline for Type 1 factories includes the first assessment and time elapsed to the endline. A comparison of the endline to

the baseline for Type 2 factories includes only time elapsed since the first assessment. Thus, the change between the baseline and the endline for Type 1 factories minus the change between the baseline and the endline for Type 2 factories provides a measure of the impact of the first assessment. The impact of the first assessment can also be obtained by comparing factory Types 3 to 4. The impact of assessment **Cycle 2** can similarly be obtained by comparing Types 4 and 5. The impact of assessment **Cycle 3** can be obtained by comparing Types 5 and 7.

Measures. Data collected from workers and the Human Resource Manager are collected to measure sexual harassment, organizational norms, accountability and incentive pay for workers and their supervisors. Each of the items and the construction of variables are described below.

Sexual Harassment. Sexual harassment is notoriously difficult to measure. We employ four different measures of sexual harassment, each slightly more probing than the next and most, though not all, addressing harassment by supervisors or managers. Workers are asked how often they experience the following interactions with managers, supervisors or co-workers. (C20) Is there flirting or joking in this factory that makes you uncomfortable? (C21) Do any of the supervisors or managers ever talk to you or touch you in a way that makes you uncomfortable? (C22) Do any of the supervisors or managers ever talk to you or touch you in a sexual way? (C23) Do any of the supervisors or managers ever try to have a sexual relationship with you? Workers make a selection on a 4-point scale ranging from “1=Yes, often” to “4=No, never.” The scale was recoded so that a higher score indicates more frequent harassment. Following the calculation of Cronbach’s alpha for these four items, C20 and C21 were averaged to create the variable *Flirting_Touch* and C22 and C23 were averaged to create the variable *Sexual_Talk_Touch*.

Sexual Harassment Norms. Social norms are measured from the perspective of the worker and the HR manager. For the worker, they are asked the extent to which they agree with the following statements. (H1) In this factory, it is common for supervisors to make sexual comments or try to sexually touch workers. (H2) In this factory, it’s seen as acceptable for supervisors to make sexual comments or to try to sexually touch workers. (H3) In this factory, when supervisors make sexual advances toward workers, it’s seen as the worker’s fault. Workers make a selection on a 5-point Likert scale ranging between “1=Strongly disagree” to “5=Strongly agree.” Following the calculation of Cronbach’s alpha for these three items, they were formed into a single index *SH_Norm* measuring worker perceptions of sexual harassment norms.

In the case of the HR manager, we are particularly interested in *quid pro quo* sexual harassment. The HR manager was asked to rate their agreement using a 5-point Likert scale with two questions about organizational tolerance of sexual harassment. (E37) In this factory, it’s common for supervisors to link treatment or pay to workers’ willingness to have sexual

relationships with them. (E38) In this factory, it's seen as acceptable for supervisors to link treatment or pay to workers' willingness to have sexual relationships with them. Following the calculation of Cronbach's alpha for these two items, they were aggregated to create a single organizational tolerance variable, *HR_SH_Tol2*.

Accountability. We measure the presence of an accountability system by asking workers the extent to which they agree with the statement, (C25) There is a clear and fair system for reporting sexual harassment in this factory. Responses are coded on a 5-point Likert scale.

Power or Agency. Worker perceptions of the power relationship with their supervisor were measured by asking workers the extent to which they agree with the statement, (I2) In this factory, I believe workers should obey their supervisor without question, even when they disagree. Coding was reversed to create the variable *I2_AgencyR*. A rise in the value of *I2_AgencyR* indicates that workers do not agree with the statement, reflecting a greater sense of agency or power.

Pay Incentives. The HR manager was asked two questions about the structure of incentives within the factory. These are, (D05B) What percentage of a typical supervisor's pay is based on the performance of the workers he or she supervises? (D05C) What fraction of a sewer's pay is based on her own production? Possible responses range from "1=None" to "11 = All." The variable was recoded so that "0=0 percent" up to "100 = 100 percent" to create the variables *Sup_Incentive_HR* and *Worker_Incentive_HR*.

Treatment. The treatment variables capture which assessment cycles a factory has completed and how many months had elapsed between the assessment and the data collection. The variable *cycleA* (A=1,2,3) is a binary variable equal to 1 if the Ath assessment has occurred by the time of the data collection and zero otherwise. *monthssincelast* is the number of months that have elapsed since the most recent previous assessment cycle.

Estimation. We conduct two types of statistical analyses. First, we simply test for a reduced form treatment effect on each of the variables of analysis. A panel estimator is used with individual worker fixed effects. The fixed effects estimator focuses attention on the variation within a participant over time. The equations are controlled for year fixed effects and time-varying individual characteristics. Standard errors are clustered by factory.

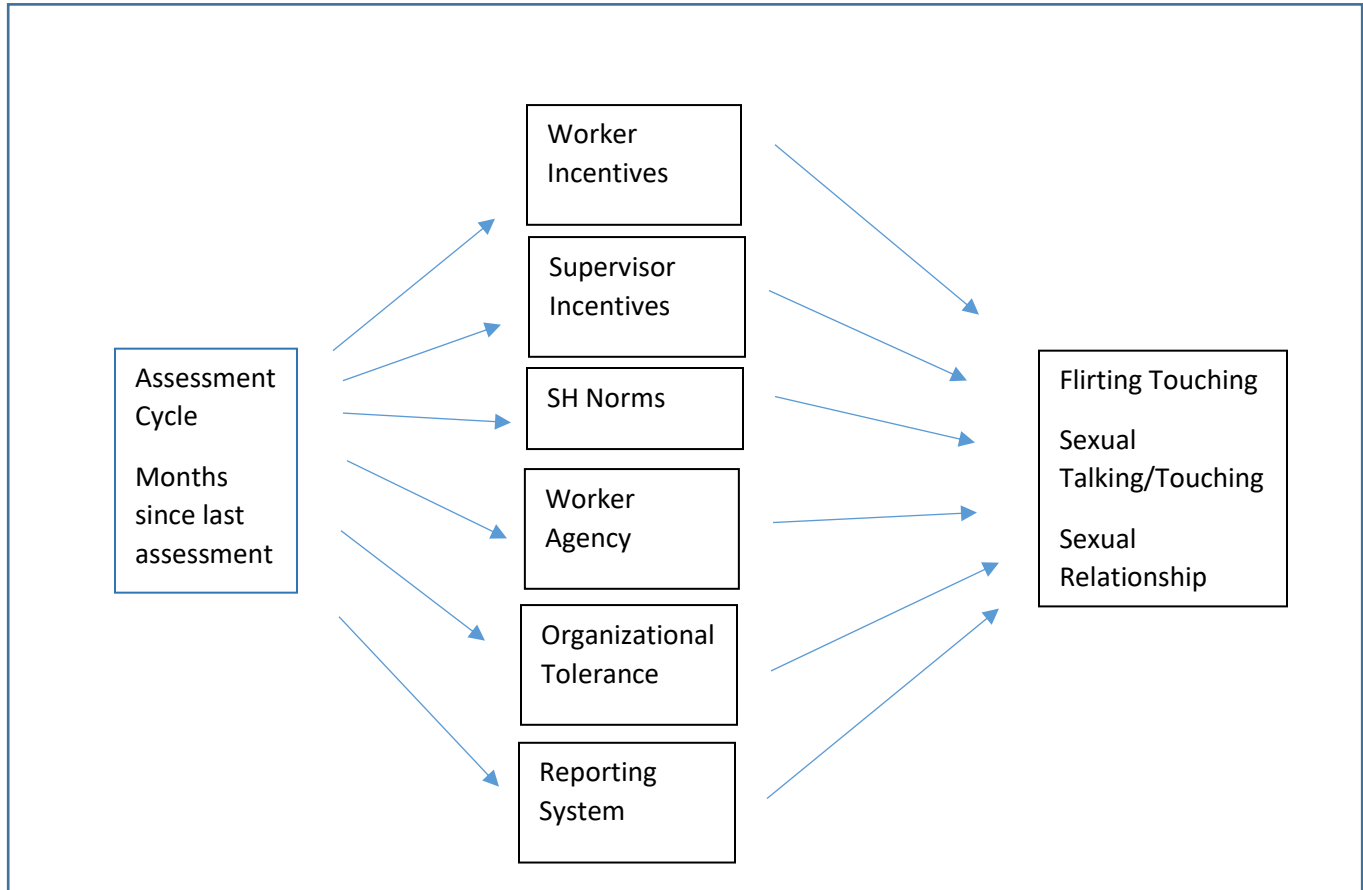
The estimation equation is given by

$$Y_{ijt} = \alpha_{ij} + \beta \mathbf{Cycle}_{jt} + \delta \text{monthssincelast}_{jt} + \gamma \mathbf{Z}_{ijt} + \theta \mathbf{T} + \varepsilon_{ijt}$$

where Y_{ijt} is reports of sexual harassment, worker incentives, supervisor incentives, organizational norms, organizational tolerance, worker agency and grievance procedures reported for/by individual i in factory j at time t , α_{ij} is the fixed effect for worker i in factory j , $\mathbf{Cycle}_{jt}$ is a vector of assessment cycle variables indicating whether factory j had had Cycle A by time t , $\mathbf{Z}_{ijt}$ is a vector of time varying individual characteristics for worker i in factory j at time t , $\mathbf{T}$ is a vector of binary year fixed effects and ε_{ijt} is an error term.

We then use simultaneous equation estimation to test for the predictions of the theoretical model. The structural model is depicted in *Figure 2*.

Figure 2 Structural Model



In particular, we are interested in two questions. First, do norms, power, organizational tolerance and the structure of incentives predict sexual harassment? Second, how does BFC affect the factory structure that determines sexual harassment? In particular, does BFC alter the power of incentives, norms, organizational tolerance, power, etc., in a manner that reduces sexual harassment?

All equations include factory fixed effects and year fixed effects. Standard errors are clustered by factory.

Descriptive Statistics. Summary statistics for the variables employed in the analysis are presented in Table 1. The continuous demographic characteristics, measured on a scale, are education (*edu*), age and work experience (*experience*). The binary variables are marital status

divorced widowed or separated (*marry_DW*) and currently married (*marry_yes*). The excluded group is *single*.

Mean education is between primary school and lower secondary school. The mean age is around 21 years old. Workers in the sample have, on average, been working in the factory for just under two years. 53 percent are currently married, 7 percent are divorced, widowed or separating and the remaining 40 percent are single. 81 percent of the sample is female.

At the time of each data collection, 92 percent of participants were in factories that had already had their first assessment, 50 percent had also had their second assessment and 14 percent had had their third assessment. Thus, eight percent of participants are from factories that had not yet had their first assessment.

There is significant evidence of sexual harassment. 56 percent report some teasing or joking, 45 percent report some uncomfortable talking or touching, 31 percent report sexualized talking and touching and 19 percent report that supervisors and managers sometimes try to have a sexual relationship with them. 71 percent of workers in the sample work in factories where the HR manager acknowledges that *quid pro quo* harassment occurs. 64 percent of workers in the sample work in factories where the HR manager acknowledges that *quid pro quo* harassment has some degree of acceptability.

On average, 27 percent of supervisor pay is based on the production of his or her own line. This figure is similar for workers. On average, workers have a neutral perception of their power relative to their supervisors. They also have a neutral view on whether there is an accountability system related to sexual harassment in their factory.

EMPIRICAL RESULTS

We begin the empirical analysis with reduced form estimation. The purpose of this first phase of the analysis is simply to determine whether there is a treatment effect on the variables of interest. We then turn to the SEM analysis to test the underlying theory and to determine where the points of entry are for the BFC program in the structure of the factory determining sexual harassment.

Reduced Form Results. Reduced form results for the sexual harassment measures are reported in Table 2. Results for the other variables in the system are reported in Table 3. Estimated coefficients for the demographic controls and time fixed effects are suppressed.

Note first, that we do not detect treatment effects for the variables when the word *sexual* is not included in the question, as is the case for questions C20 and C21. Neither the cycle nor monthssincelast treatment variables are significant in the individual question equation, *C21_UnCom_Talk_TouchR*, nor the aggregate equation, *Flirting_Touch*.

However, when the word “sexual” is added to the item, strong treatment effects emerge. After the second assessment, workers report a decline in sexualized talking or touching (C22). The estimated coefficient of cycle2 is $\beta = -0.844$, indicating that workers in factories that have had their second assessment report sexual harassment 0.844 lower on a 5-point scale than workers in factories that have not had their second assessment. Note also that there is no treatment effect for workers in factories that have only had the first assessment as the coefficient of cycle1 is not statistically significant. Nor is there a marginal additional impact for workers in factories that have had their third assessment, as the coefficient of cycle3 is not significant either.

Note also that there is curing in the months after an assessment ($\beta = -0.0605$). Similarly, workers report a reduction in supervisors seeking a sexual relationship (C23) after the second assessment ($\beta = -0.443$), the third assessment ($\beta = -0.185$) and months after an assessment ($\beta = -0.0459$). The pattern of reduced sexual harassment is particularly pronounced and statistically significant when the two items are aggregated to create the single variable *Sexual_Talk_Touch*, as can be seen in the last column of Table 2.

Turning to the other variables that are important to the theoretical model shown in Table 3, we estimate several significant treatment effects. At the time of the third assessment and in the months after each assessment, workers report that sexual harassment is less common (column 1). Workers are also reporting less tolerance for sexual harassment. The effect emerges after the first and third assessments (column 2). There do not appear to be treatment effects for power (column 3), worker perceptions of the presence of a reporting system (column 4) or supervisor pay incentives (column 5).

However, there is a very pronounced treatment effect on worker pay incentives. We estimate a treatment effect of $\beta = -65.71$. That is, there is a nearly 66 percentage points decline in the fraction of pay that is incentive-based. At the time of the first assessment, 28 percent of workers in the study have 100 percent of their pay based on productivity and 47 percent have none of their pay based on productivity. By the second assessment, only 8.7 percent have their pay solely determined by productivity and 67 percent have none of their pay based on productivity. By the third assessment, there is only one factory that appears to be using incentive pay. That is, there is a very large shift away from incentive pay for workers as a consequence of BFC.

A decline in the share of pay that is incentive-based is expected given the type of intervention we are studying. BFC requires factories to pay the minimum wage. The minimum wage, by law, must not depend on incentives. Indeed, Antolin et al. (2020) find that BFC reduces work hours and increases hourly pay without changing total pay. Thus, it is not surprising that incentive pay as a share of total pay is declining over the duration of the program.

Note curiously that the treatment effect on the HR managers' reports of organizational tolerance for sexual harassment is increasing after the first assessment ($\beta=1.030$) and the third assessment ($\beta=0.654$). We do not interpret this finding to mean that organizational tolerance is actually rising. Rather, such an effect is likely because BFC is making HR managers more aware of sexual harassment.

Simultaneous Equation Estimation. Turn now to consider the theoretical structure of the determinants of sexual harassment. Consider first, measures that do not include the word "sexual." Results are reported in Tables 4 and 5. In Table 4, organizational tolerance is measured from the worker perspective. In Table 5, organizational tolerance is measured from the HR manager's perspective.

Recall from the reduced form regressions that we did not detect a treatment effect when the word "sexual" is not included in the wording of the question. However, in the SEM, treatment effects emerge. A treatment effect will emerge in a SEM when there is treatment heterogeneity.

The process is easiest to understand when we include the HR manager's perception of organizational tolerance in Table 5. Note first, that as before, there is a treatment effect on worker incentives and a treatment effect on the HR manager's perception of sexual harassment tolerance.

Now, look at the *Flirting_Touch* measure of sexual harassment. The higher the HR manager's reports of organizational tolerance the more flirting and touching that workers report ($\beta=0.468$). For each one unit increase in the HR manager's report of organizational tolerance of sexual harassment, there is a 0.468 increase in worker reports of sexual harassment, both on a 5-point scale.

Such a finding is consistent with theory. Sexual harassment is more likely to occur in workplaces with a high organizational tolerance. When we control for organizational tolerance, a strong BFC treatment effect emerges on flirting and touching. The coefficients of the *cylce2* and *cyle3* treatment variables are both negative and significant at the 0.01 level.

What's happening here? Treatment is having an indirect effect of increasing HR manager awareness of organizational tolerance in factories where sexual harassment is a problem. Organizational tolerance is associated with high flirting and touching. But the direct treatment effect is negative. In the reduced form, we are averaging these two channels together and finding no treatment effect. But in the SEM, we are able to see both channels and understand that there is a treatment effect on flirting but the process works through both the organizational tolerance and the monitoring channels.

Note, though, that the incentive variables are not statistically significant. Flirting and uncomfortable touching do not appear to be sensitive to the structure of incentives. In

comparison, the structure of incentives is very important for sexual touching and sexual relations.

Results for sexual talking and touching are reported in Table 6 and results for a sexual relationship are reported in Table 7. Note that for both definitions of sexual harassment, there is, as before, a treatment effect on worker incentives. In the case of sexual talk and touching, the structure of incentives plays an important role in determining sexual harassment. As theory Lin et al. predict (2014), the more highly powered worker incentives, the more sexual harassment ($\beta=0.0148$); the more highly powered supervisor incentives, the less sexual harassment ($\beta=-0.0102$).

Note importantly that the beneficial treatment effects reported in Table 2 are now eliminated or reversed. There is an increase in sexual harassment after the first assessment ($\beta=0.764$) and the coefficients of cycle2 and cycle3 are now insignificant.

What's going on? BFC's main treatment channel on sexual harassment is through its impact on the use of pay incentives. Treatment reduces the use of pay incentives for workers. Thus, workers are less vulnerable to *quid pro quo* sexual harassment. This channel accounts for all of the treatment effects reported in Table 2, except for the curing that occurs in the months after an assessment. That curing effect is still present in Table 6. There is no treatment channel through the creation of a reporting system or increased worker empowerment.

We observe a similar pattern for sexual relations, as reported in Table 7. The only active channel from treatment to sexual harassment is through pay incentives for workers.

Other elements of the theory become relevant if we use other definitions of organizational tolerance. Results in Tables 6 and 7 only measure organizational tolerance and norms by the presence of a sexual harassment complaint system. In Table 8, we report results using the worker's perceptions of norms and in Table 9 we use the HR manager's perceptions of norms. When we use worker perceptions of social norms, the use of pay incentives remains the sole active treatment channel. Though, there is a direct treatment effect after the second assessment, which appears to be reversed after the third assessment. The interesting aspect of Table 8 is that power becomes relevant for determining sexual harassment. The greater the sense of agency possessed by a worker, the less frequent the sexual harassment. However, this is not a BFC treatment effect.

CONCLUSIONS

Sexual harassment in the workplace is common, with an estimated 40-60 percent of women and 10 percent of men being harassed at work (Maas, Cadinu, & Galdi, 2013). Empirical evidence from social psychology emphasizes social norms, power, accountability and organizational tolerance as the key determinants of sexual harassment. Economic theory indicates that misaligned incentives expose workers to *quid pro quo* sexual harassment. Low

powered incentives for supervisors and high powered incentives for workers increase sexual harassment.

In order to test these theories, we conduct a quasi-experiment with a social compliance program that induces exogenous variation in norms, power, organizational tolerance, reporting systems and worker pay. We measure the impact of the treatment effect of the program on the theoretical variables and the factory structure and how those variables impact sexual harassment.

The social compliance program is Better Factories Cambodia (BFC). BFC, introduced in 2001, is a program of the ILO and IFC that assesses factories against core labour standards and Cambodian labour law. Factories are additionally provided training and advisory services designed to improve the factory systems that determine compliance.

The study was conducted between 2015 and 2018 with 57 participating apparel and footwear factories. The study began with a baseline survey of workers, supervisors and managers. Factories were then stratified based on the number of completed annual assessments. To achieve identification, factories within each stratum were randomly assigned to one of seven data collection and survey timelines. As a result of random assignment, we surveyed pairs of factories with similar program histories except that one had just completed an assessment and the other had not. We also surveyed pairs of factories with similar program histories but with one that had just had an assessment and the other had several months elapse after an assessment before data collection. The first set of comparisons identify the effect of an assessment and the second set of comparisons identify program curing or decay.

Data were analysed using a difference in difference estimator to measure the reduced form treatment effect. SEM analysis was then employed to explore the theoretical links and identify the points of entry of the program into the determinants of sexual harassment.

We find a strong pattern of treatment effects on incentive pay for workers, the factory's HR manager's reported awareness of sexual harassment, the incidence of sexual talking and touching and supervisors seeking a sexual relationship with workers.

We find strong evidence for the theory that pay incentives such as piece rate and bonuses, power and organizational tolerance determine sexual harassment. Further, the main channel of the program on sexual harassment is through pay incentives. Enforcement of minimum wage laws reduces the fraction of worker pay that is linked to productivity. Reducing productivity-linked pay, in turn, reduced vulnerability to *quid pro quo* sexual harassment.

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Table 1 Summary Statistics

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
edu	2,482	3.458	1.056	1	6
age	2,615	2.946	1.343	1	6
experience	2,547	6.329	2.908	1	11
marry_DWS	2,426	0.0705	0.256	0	1
marry_yes	2,426	0.531	0.499	0	1
cycle1	2,760	0.916	0.278	0	1
cycle2	2,760	0.495	0.500	0	1
cycle3	2,760	0.140	0.347	0	1
monthssincelast	2,760	5.351	4.264	0	28
female	2,760	0.806	0.395	0	1
C21_UnCom_Talk_TouchR	2,313	1.757	0.953	1	4
C22_Sexual_Talk_TouchR	956	1.484	0.820	1	4
C23_Sexual_RelationR	937	1.282	0.670	1	4
C25_Report_System_SH	1,272	3.015	1.296	1	5
H1_SH_Common	1,471	2.236	1.188	1	5
Flirting_Touch	2,162	1.870	0.844	1	4
Sexual_Talk_Touch	903	1.370	0.646	1	4
SH_Norm	1,196	2.161	0.984	1	5
HR_SH_Tol2	1,928	1.718	0.764	1	5
Sup_Incentive_HR	2,022	27.81	39.37	0	100
Worker_Incentive_HR	1,491	27.76	40.27	0	100
I2_AgencyR	1,902	3.011	1.188	1	5
Number of uniqueID	1,617	1,617	1,617	1,617	1,617

Table 2 Reduced Form Sexual Harassment Indicators

VARIABLES	UnCom_Talk_TouchR	Sexual_Talk_TouchR	Sexual_RelationR	Flirting_Touch	Sexual_Talk_Touch
cycle1	0.00483 (0.181)	0.0683 (0.383)	0.243 (0.257)	-0.0961 (0.196)	0.0992 (0.209)
cycle2	-0.0801 (0.166)	-0.844*** (0.317)	-0.443* (0.254)	0.119 (0.189)	-0.663** (0.274)
cycle3	0.0478 (0.156)	-0.155 (0.262)	-0.185* (0.0953)	0.190 (0.128)	-0.176** (0.0785)
monthssincelast	-0.0188 (0.0137)	-0.0605** (0.0261)	-0.0459** (0.0201)	-0.0139 (0.0147)	-0.0518*** (0.0191)
Constant	0.616 (0.634)	2.177* (1.107)	0.696* (0.404)	1.548** (0.643)	1.235*** (0.323)
Observations	1,970	834	819	1,874	796
R-squared	0.047	0.198	0.136	0.064	0.197
Number of uniqueID	1,617	751	742	1,551	720

Robust standard errors in parentheses

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

Demographic Controls, Year and Participant Fixed Effects

Table 3 Reduced Form Organizational Norms, Agency and Pay Incentives

VARIABLES	SH_ Common	SH_Norm	I2_AgencyR	Report_ System_SH	Sup_Incentive _HR	Worker_Incentive _HR	HR_SH_Tol2
cycle1	-0.251 (0.232)	-0.618** (0.268)	-0.237 (0.244)	0.337 (0.445)	13.96 (32.38)	-39.80 (63.14)	1.030*** (0.335)
cycle2	-0.191 (0.206)	0.140 (0.246)	0.115 (0.253)	0.195 (0.259)	9.970 (15.13)	-1.222 (15.18)	-0.288 (0.173)
cycle3	-0.350* (0.183)	-0.297** (0.148)	0.00433 (0.178)	0.0985 (0.244)	-4.470 (27.26)	-65.71*** (9.375)	0.654** (0.264)
monthssincelast	-0.0656** (0.0249)	-0.0157 (0.0194)	-0.0208 (0.0199)	-0.00768 (0.0314)	-1.593 (2.835)	4.445 (4.502)	-0.0226 (0.0266)
Constant	6.608*** (0.853)	6.381*** (0.926)	2.815*** (0.802)	2.690** (1.218)	4.414 (20.33)	45.89 (27.53)	0.983*** (0.322)
Observations	1,295	1,076	1,670	1,095	2,022	1,491	1,928
R-squared	0.201	0.232	0.061	0.066	0.080	0.456	0.361
Number of uniqueID	1,134	955	1,404	966			
Number of factorycode					55	47	49

Robust standard errors in parentheses

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

Demographic Controls, Year and Participant Fixed Effects

Table 4 SEM 1 Flirting_Touching (C20, C21)

VARIABLES	Worker_Incentive_HR	Sup_Incentive_HR	SH_Norm	AgencyR	Flirting_Touch
cycle1	-39.80 (62.92)	13.96 (32.32)	0.174 (0.162)	-0.126 (0.149)	0.921*** (0.220)
cycle2	-1.222 (15.12)	9.970 (15.11)	0.122 (0.107)	0.00121 (0.110)	-0.349*** (0.135)
cycle3	-65.71*** (9.341)	-4.470 (27.22)	-0.0790 (0.137)	0.151 (0.138)	-0.445*** (0.153)
monthssincelast	4.445 (4.485)	-1.593 (2.831)	-0.0193 (0.0146)	-0.00808 (0.0123)	-0.100*** (0.0169)
Worker_Incentive_HR					-0.00134 (0.00290)
Sup_Incentive_HR					0.00245 (0.00244)
SH_Norm					0.0112 (0.0416)
I2_AgencyR					-0.0310 (0.0353)
Constant	76.03*** (26.43)	39.13 (33.38)	2.095*** (0.296)	2.794*** (0.287)	2.107*** (0.475)
Observations	2,567	2,567	2,567	2,567	2,567

Robust standard errors in parentheses

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

Demographic Controls, Year and Factory Fixed Effects

Table 5 SEM 2 Flirting Touching (C20, C21)

VARIABLES	Worker_Incentive_HR	Sup_Incentive_HR	HR_SH_Tol2	AgencyR	Flirting_Touch
cycle1	-39.80 (62.92)	13.96 (32.32)	1.030*** (0.334)	-0.126 (0.149)	0.402 (0.418)
cycle2	-1.222 (15.12)	9.970 (15.11)	-0.288* (0.172)	0.00121 (0.110)	-0.590*** (0.152)
cycle3	-65.71*** (9.341)	-4.470 (27.22)	0.654** (0.263)	0.151 (0.138)	-1.196*** (0.324)
monthssincelast	4.445 (4.485)	-1.593 (2.831)	-0.0226 (0.0265)	-0.00808 (0.0123)	-0.0391 (0.0275)
Worker_Incentive_HR					-0.00986 (0.00657)
Sup_Incentive_HR					0.00824 (0.00611)
HR_SH_Tol2					0.468*** (0.116)
I2_AgencyR					-0.0114 (0.0314)
	(26.43)	(33.38)	(0.459)	(0.287)	(0.702)
Observations	2,618	2,618	2,618	2,618	2,618

Robust standard errors in parentheses

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

Demographic Controls, Year and Factory and Fixed Effects

Table 6 SEM 3 Sexual Talk Touch (C22), Accountability

VARIABLES	Worker_Incentive_HR	Sup_Incentive_HR	Report_System_SH	AgencyR	Sexual_Talk_TouchR
cycle1	-39.80 (62.92)	13.96 (32.32)	0.0999 (0.200)	-0.126 (0.149)	0.764** (0.338)
cycle2	-1.222 (15.12)	9.970 (15.11)	-0.0798 (0.133)	0.00121 (0.110)	-0.191 (0.198)
cycle3	-65.71*** (9.341)	-4.470 (27.22)	0.0221 (0.159)	0.151 (0.138)	0.274 (0.250)
monthssincelast	4.445 (4.485)	-1.593 (2.831)	0.00956 (0.0189)	-0.00808 (0.0123)	-0.0485* (0.0278)
Worker_Incentive_HR					0.0148*** (0.00343)
Sup_Incentive_HR					-0.0102*** (0.00194)
C25_Report_System_SH					0.00200 (0.0606)
I2_AgencyR			-0.0183 (0.0503)		-0.0260 (0.0731)
Constant	76.03*** (26.43)	39.13 (33.38)	2.763*** (0.326)	2.794*** (0.287)	2.411*** (0.724)
Observations	2,563	2,563	2,563	2,563	2,563

Robust standard errors in parentheses

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

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Table 7 SEM 4 Sexual Relationship (C23), Accountability

VARIABLES	(1) Worker_Incentive_HR	(2) Sup_Incentive_HR	(3) Report_System_SH	(4) AgencyR	(5) Sexual_RelationR
cycle1	-39.80 (62.92)	13.96 (32.32)	0.179 (0.186)	-0.126 (0.149)	0.665 (0.472)
cycle2	-1.222 (15.12)	9.970 (15.11)	-0.0593 (0.111)	0.00121 (0.110)	-0.329 (0.295)
cycle3	-65.71*** (9.341)	-4.470 (27.22)	-0.0424 (0.142)	0.151 (0.138)	0.739 (0.480)
monthssincelast	4.445 (4.485)	-1.593 (2.831)	-0.0102 (0.0167)	-0.00808 (0.0123)	-0.00722 (0.0393)
Worker_Incentive_HR					0.0149** (0.00642)
Sup_Incentive_HR					-0.00377 (0.00596)
C25_Report_System_SH					-0.0172 (0.0610)
I2_AgencyR					-0.0798 (0.0584)
Constant	76.03*** (26.43)	39.13 (33.38)	3.006*** (0.216)	2.794*** (0.287)	0.988 (0.951)
Observations	2,608	2,608	2,608	2,608	2,608

Robust standard errors in parentheses

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

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Table 8 SEM 5 Sexual Relationship (C23), Worker Perceptions of SH Norms

VARIABLES	(1) Worker_Incentive_HR	(2) Sup_Incentive_HR	(3) SH_Norm	(4) AgencyR	(5) Sexual_RelationR
cycle1	-39.80 (62.92)	13.96 (32.32)	0.174 (0.162)	-0.126 (0.149)	0.359 (0.489)
cycle2	-1.222 (15.12)	9.970 (15.11)	0.122 (0.107)	0.00121 (0.110)	-0.559** (0.246)
cycle3	-65.71*** (9.341)	-4.470 (27.22)	-0.0790 (0.137)	0.151 (0.138)	0.878** (0.353)
monthssincelast	4.445 (4.485)	-1.593 (2.831)	-0.0193 (0.0146)	-0.00808 (0.0123)	-0.0230 (0.0408)
Worker_Incentive_HR					0.0185** (0.00784)
Sup_Incentive_HR					-0.00573 (0.00622)
SH_Norm					0.0408 (0.0470)
I2_AgencyR					-0.167** (0.0711)
Constant	76.03*** (26.43)	39.13 (33.38)	2.095*** (0.296)	2.794*** (0.287)	1.805** (0.801)
Observations	2,567	2,567	2,567	2,567	2,567

Robust standard errors in parentheses

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

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Table 9 SEM 6 Sexual Relationship (C23), HR Manager Perception SH Norms

VARIABLES	Worker_Incentive_HR	Sup_Incentive_HR	HR_SH_Tol2	AgencyR	Sexual_RelationR
cycle1	-39.80 (62.92)	13.96 (32.32)	1.030*** (0.334)	-0.126 (0.149)	0.0891 (0.418)
cycle2	-1.222 (15.12)	9.970 (15.11)	-0.288* (0.172)	0.00121 (0.110)	-0.217 (0.138)
cycle3	-65.71*** (9.341)	-4.470 (27.22)	0.654** (0.263)	0.151 (0.138)	0.325 (0.576)
monthssincelast	4.445 (4.485)	-1.593 (2.831)	-0.0226 (0.0265)	-0.00808 (0.0123)	0.0170 (0.0303)
Worker_Incentive_HR					0.00424 (0.00953)
Sup_Incentive_HR					0.00562 (0.00755)
HR_SH_Tol2					0.116 (0.180)
I2_AgencyR					-0.111** (0.0502)
Constant	76.03*** (26.43)	39.13 (33.38)	0.558 (0.459)	2.794*** (0.287)	0.450 (0.709)
Observations	2,618	2,618	2,618	2,618	2,618

Robust standard errors in parentheses

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

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