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Is There a Business Case Against Verbal Abuse? Incentive Structure, Verbal Abuse, Productivity and Profits in Garment Factories

Emily L. Rourke

September 2014



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INCENTIVE STRUCTURE, VERBAL ABUSE, PRODUCTIVITY
AND PROFITS IN GARMENT FACTORIES**

Emily L. Rourke

Tufts University

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ABSTRACT

This paper explores the economic determinants and consequences of verbal abuse in developing country garment factories. The first question addressed is if and how verbal abuse derives from firm incentive structures. The second question is whether abuse is a profitable incentive strategy. The purpose is to understand the hypothesized existence of a business case against verbal abuse. A theoretical model is developed to incorporate verbal abuse as an integral component of firm motivational structure wherein supervisors employ verbal exhortation to encourage higher production levels from the workforce. The proposed theory contends that, in the absence of an incentivizing piece-rate wage, workers will be subject to increased levels of verbal abuse to deter shirking behavior. If it is demonstrated that verbal exhortation leads to high levels of productivity from a worker, then it is possible that firms are profit-maximizing in their decision to pay workers hourly and take a tolerant stance toward verbal abuse (contingent on the degree of presumed disutility workers suffer from being abused). Alternately, if verbal abuse is found to have negative productivity implications, firms would be acting sub-optimally and would have a profit motivation to deter verbal abuse. Results from analysis of firm incentive structures confirm that supervisors do use verbal abuse as a supplementary motivational tool. However, results also refute the possibility for a business case, demonstrating that verbal abuse has detrimental implications for firm profits, both by negatively impacting worker productivity and generating a costly compensating differential.

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SECTION 1: INTRODUCTION AND LITERATURE SURVEY

According to the 2014 Workplace Bullying Institute national survey report, 27 percent of all workers in the United States are currently victims of workplace abuse or have been in the past. Defined as “abusive conduct that is threatening, intimidating, humiliating, work sabotage or verbal abuse,” workplace abuse pervades firms worldwide (Namie et al. 2014, 3). Specifically, survey data and reports collected from garment factories in developing countries reveal that textile workers are particularly vulnerable to myriad forms of workplace abuse. Although prior investigations document the existence and detrimental effects of abuse, very little economic research has been applied to understand the management characteristics that give rise to such behavior, or to consider the impact of abuse on firm operations and profitability.

One common manifestation of workplace abuse is verbal exhortation. Previous psychology literature explores the foundational characteristics of verbal abuse and the multitude of adverse repercussions for worker health and well-being. However, there is currently a gap in the academic literature when it comes to understanding workplace verbal abuse from the business viewpoint of firms. This paper seeks to build on prior verbal abuse research in the fields of psychology and sociology by expanding the analysis to include an economic perspective. More specifically, this paper explores the possibility that certain abusive behavior might be part of the incentive structure, and thus be actively tolerated by firms.

Exploring verbal abuse from an economic perspective involves two dimensions of analysis: the origin of abuse and its resulting impact on wages, productivity and firm performance. Beginning with the former, previous literature focuses on the psychological factors, such as cognitive load, power imbalance, or widespread stereotyping, as the foundational purveyors of verbally abusive behavior by supervisors. Cognitive load is defined as the time at which one reaches the limit of one’s mental capacity. Individuals experiencing high levels of cognitive load are more apt to display dehumanizing and stereotyping behavior and are less likely to explore positive solutions. Darley and Batson (1973) observed that rushed and harried individuals under strict time pressures were more likely to dismiss or ignore a man in an alleyway visibly in need of assistance. In an examination of workplace bullying, Mathisen et al. (2011) found that supervisor stress correlated strongly with bullying behavior, more so than any individual personality traits.

In addition to cognitive load, power is a natural consequence of the hierarchical structure of firms that is a documented predictor of abusive behaviors. A perception of power significantly increases

an individual's tendency to be action-focused, engage in stereotyping behavior, and generally disregard the interests of low-powered subordinates (see Galinsky et al. 2003; Kipnis 1972; Keltner et al. 2003). Galinsky et al. (2003) showed that perceived power in one context led individuals to take direct action in general, and also specifically to take action to achieve their own egocentric desires. Keltner et al. (2003), later linked power to an individual's likelihood to use others as a means to one's own end as well as the tendency to stereotype, resort to automatic social cognitive responses, and engage in socially inappropriate behaviors.

In addition to stress and power, positive reinforcement of aggressive acts also induces individuals to repeatedly resort to aggressive behavior (see O'Leary-Kelly et al. 1996). Organizations further contribute to aggressive tendencies through environmental factors such as crowding, overheating, and noise as well as cultural factors such as rewarding aggressive behavior or treating employees aversively.

However, in addition to the documented psychological and physical characteristics of firms that prime a workplace for abusive treatment, it could also be the case that supervisors with production-driven incentives actively employ verbal abuse as an instrument to stimulate worker effort. In this capacity, verbal abuse could arise in a context where supervisors are especially determined to extract additional productive effort from the workers they oversee, particularly as a strategy to motivate effort. If it is the case that verbal abuse is used to compensate for low effort, it would logically be intertwined with the incentive structures of the firm and the motivating forces that drive productive effort. As a foundation for understanding the integral components of incentives and motivation, the recently developed field of Personnel Economics concentrates on the application of economic theory to the human resource division of firms. A large portion of the literature deals with incentive schemes and motivation for workers and managers (see Lazear 2000; Banker 1996; Fernie et al. 1996).

All firms face the fundamental question of how to optimally determine wages and incentive structures. The cornerstone theory of Personnel Economics asserts that workers will respond to incentives. According to agency-theoretic models, agents (workers in this case) trade off a disutility for work effort and expected increase in compensation from output. The principal (the firm) must design incentive schemes to mediate the two. In a seminal study, Lazear (2000) evaluated data from Safelite Glass Corporation, a large automobile glass manufacturer and found that the adoption of a piece rate system led to a 44 percent increase in productivity for the company as a whole. A preponderance of evidence indicates that for industries where performance is easily measured and intrinsic motivation is less relevant, as is the case with sweatshops, performance-based incentive contracts are tied to higher

performance levels (Banker, et al. 1996; Bandiera 2009; Lazear 2000; Prendergast, 1999). The possibility therefore arises that, in the absence of a piece rate to motivate the workforce they oversee, supervisors may resort to alternative motivational measures such as verbal abuse.

Bandiera et al. (2007) expanded on the compensation-productivity link by extending the analysis to a hierarchically organized firm, where managerial compensation is contingent on the average productivity of the bottom-tier workforce. Through analysis of managerial compensation in a fruit-picking company, the study found that adding a daily performance bonus to the same level of managers' fixed wages induced average worker productivity to rise by 21 percent. These results provide strong evidence for the conclusion that as supervisor and manager incentives are tied directly to the productivity of the subordinates they oversee, their personal desire to motivate high effort increases. Production linked-incentives for supervisors and managers may, therefore, have important implication for the determinants of verbal exhortation of their subordinates.

While an economic analysis of verbal abuse might propose motivational intentions as a possible purveyor of the abusive behavior, firms would be remiss in tolerating verbal abuse without a careful consideration of the business impact on firm productivity and profitability. Previous literature focuses on the impact of verbal abuse on individuals, and catalogs a host of detrimental physical and mental health effects that plague victims. In a 2000 study, Tepper demonstrated that employees who perceived their supervisors as abusive suffered a multitude of mental and physical health problems, reported lower life satisfaction, and were more likely to quit their jobs. Rospenda (2009) showed that workplace abuses are strong predictors of negative job and health outcomes, and an increased risk for injury, illness, and assault. LeBlanc & Barling (2004) also found that victims of directed aggression tended to have reduced emotional and physical well-being and a low level of organizational commitment.

Research conducted in Lesotho, described in the 2012 Better Work Discussion Paper No. 7 offers further evidence of the direct impact felt by workers subjected to supervisory misconduct. The preponderance of concerns raised by workers regarding supervisor relations indicates the profound impact of abusive treatment and power dynamics on perceptions of work environment and personal well-being (Pike and Godfrey, 2012).

However, despite the severe ramifications of verbal exhortation for individual victims, firms could feasibly encourage the abuse if there was a perception of a positive profit potential. It is therefore necessary to consider verbal abuse in relation to broader firm profitability. To do so, the independent effects of verbal abuse on revenues and costs must be considered.

From the perspective of revenues, verbal abuse factors in to the business equation by way of its impact on worker productivity. As previously noted, verbal abuse may arise when supervisors seek to increase productive effort in the absence of other motivational options. If verbal abuse were indeed distinctly effectual at inducing productive efficiency, output and revenues would correspondingly increase.

However, from a cost perspective, firms necessarily must consider the impact of abuse on the well-being of victims, a phenomenon that could manifest in higher wages demanded by workers. A natural hypothesis given the myriad injurious effects to worker utility would be the existence of a compensating differential to counterbalance the disutility accrued to victims of verbal abuse. This would represent a cost to the firm, and would necessarily have to be offset by a large enough productivity boost for a business case to exist.

On the other hand, if verbal abuse were to significantly erode an individual's perception of his or her own power, wages may not in fact rise. Psychological studies suggest that a perceived lack of power can actively diminish an individual's perception of his or her own agency and capacity to act, which could manifest in the form of lower wage demands. Specifically, Galinsky et al. (2003) noted that study participants in a low power mindset were far less likely to take efficacious action toward achieving personal goals or desires. The link between power and action for the victim of abusive treatment could indicate that if verbal abuse were to induce a feeling of powerlessness in the victim, it could simultaneously have the result of lowering his or her own perceived abilities. This could result in a lower reservation utility, reduced propensity to quit, or a reluctance to make wage demands.

Ultimately, the separate implications for revenues and costs must be carefully considered when assessing the profit-maximizing possibilities of verbal abuse. In the case that verbal abuse either decreased workers' productive efficiency or sufficiently increased demanded wages by some compensating differential, firms would be mistaken in their tolerance of verbal abuse. However, if verbal abuse demonstrably increased individual efficiency without significantly driving wage costs, then firms would rationally encourage verbal abuse as a motivational strategy.

This paper investigates the previously unexplored economic determinants and implications of verbal abuse in the firm setting, and probes the underlying incentivizing mechanisms that motivate individually operating self-interested agents. To investigate the phenomenon of supervisor verbal abuse, the proceeding analysis focuses on survey data collected from workers and managers in garment sector factories in Jordan, Vietnam, and Indonesia. The analysis seeks to establish a more cohesive understanding of workplace verbal exhortation in the firm environment, the root of its existence, and its

impact on revenues, costs, and profits. The following section introduces a theoretical framework for understanding verbal abuse in a factory context, and explores the relative levels of abuse, production, and profitability that would exist under varying incentive conditions.

SECTION 2: THEORETICAL MODEL

Effort toward production on the part of a worker can be elicited through an array of strategies which may be pecuniary, such as incentive pay, or non-pecuniary, such as verbal exhortation. A supervisor's verbal interactions with workers may be positive or negative, and may be sufficiently negative so as to constitute verbal abuse. A theoretical framework is presented below in which verbal abuse is an inherent component of the motivational structure and is used as an alternative to, or in conjunction with, monetary compensation to induce worker productivity.

To consider the phenomenon of verbal abuse as it relates to the incentive structure and profitability of a firm, a three-agent model is employed to illustrate production decisions and working conditions. For simplicity sake, a firm is assumed to be composed of one manager, one supervisor, and one worker. The manager sets the incentive structure, the supervisor chooses verbal exhortation, and the worker chooses work effort subject to the incentive structure implemented by the manager and the verbal exhortations of the supervisor.

The worker is charged with the task of production, exerting a chosen effort level, e , toward generating output, q . The supervisor oversees the worker, and can opt to use verbal abuse to elicit work effort. The manager sets the compensation structure for the worker and supervisor, where compensation can come in the form of base rate or piece rate for both the worker and the supervisor. Worker wages are denoted as α and β and supervisor wages as δ and γ for base-rate and piece-rate respectively. In addition to rewarding work effort, the manager may punish verbal abuse that exceeds the profit-maximizing level. The manager seeks to implement the profit-maximizing wage and punishment structure of the firm, subject to supervisor choice of verbal abuse and its potential effects on profits.

Output of a given worker i is given by

$$(1) \quad q_i = \min\{e_i + \theta v_i, k\}$$

where e_i is the individual's level of effort, v_i is the amount of verbal abuse directed at the worker, θ is a measure of the relative effectiveness of verbal exhortation on output, and k is capital per worker. The sign of θ is theoretically ambiguous, however, the theory of the firm is predicated on the assumption

that θ is positive, implying that verbally abusing a worker will induce a larger output. The model additionally makes the simplifying assumption that shouting is the only motivational mechanism under the control of the supervisor. Additional motivational techniques are discussed below.

The structure of the firm is modeled as follows:

The worker's net pay is determined by a combined hourly wage, α , and piece rate salary, β . The worker is taken to have a utility function that depends positively on money income and negatively on work effort and verbal abuse. The firm must structure a configuration of monetary compensation and working conditions that yields a level of worker utility that exceeds a worker's reservation level.

The worker's participation constraint, then, is given by

$$(2) \quad (\alpha + \beta q)(\bar{e} - e) - v^d \geq \bar{u}_w,$$

where $(\alpha + \beta q)$ represents the worker's monetary earnings, $(\bar{e} - e)$ is a multiplier sensitive to the disutility caused by additional effort, v is the level of verbal abuse and d is a measure of the magnitude of disutility from being subjected to verbal abuse. \bar{u}_w is the worker's reservation utility which, if not met, will induce the worker to quit the firm. The worker chooses effort level, e , in order to maximize utility subject to the incentive structure.

The supervisor is also paid an hourly rate and a piece rate. Supervisor utility is positively related to money income and negatively related to effort utilized to motivate the worker. As with the worker, the firm must provide the supervisor a combination of pay and working conditions that yields a level of utility that exceeds a reservation level. The participation constraint for the supervisor, then, is

$$(3) \quad (\delta + \gamma q)(\psi_i \bar{v} - v) \geq \bar{u}_s,$$

where $(\delta + \gamma q)$ is the supervisor's monetary earnings, and $\bar{v} - v$ is a multiplier sensitive to the disutility incurred from engaging in verbal abuse, implying that the supervisor experiences a decline in utility as they abuse at higher levels of intensity. \bar{v} can be understood as a reference level of utility from which the disutility of engaging in verbally abusive behavior is detracted as v increases. However, some supervisors may be fundamentally less averse to the use of verbal exhortation, or the tolerance for verbal abuse may reflect a perceived norm within a particular firm or culture. ψ_i accounts for this heterogeneity by allowing individuals' baseline \bar{v} to vary based on factors ranging from cultural influences to enjoyment of power assertion. The relevance of this variability echoes research findings from factories in Lesotho, where workers expressed the opinion that supervisors were frequently

promoted based on “their ability to be tough on workers” (Pike and Godfrey, 2012). Supervisor selection on the basis of their level of severity would manifest in a higher value for Ψ_i , implying a lesser degree of disutility on the part of the supervisor, and consequently greater incidence of verbal abuse.

Additionally, the presence of a union could artificially restrict a supervisor’s ability or desire to apply verbal exhortation by imposing tighter restrictions or punishments on maltreatment of workers. Ψ_i could encapsulate this downward pressure by lowering the personal utility to be gained by a supervisor opting to verbally abuse, thereby also implying a lower optimal level of verbal abuse.

The manager seeks to maximize profits by optimally setting the compensation structure and punishing sub-optimally high levels of verbal abuse. The firm’s profit is given by

$$(4) \quad \pi = pq - (\alpha + \beta q) - (\delta + \gamma q) - rk,$$

where P is price and rk measures capital costs. The firm chooses α , β , δ , γ , and can control firm-wide v by regulating and punishing unwanted verbal exhortation on the part of supervisors. k is assumed to be fixed in the short run.

Backward induction is used to reason through each agent’s optimal choice. The optimizing choices provide insight as to how and why verbal abuse relates to the broader scheme of firm incentive structures, productivity, and profitability.

The first stage in solving the model involves an individual-level analysis of the impact of wages, incentives, and verbal abuse on worker and supervisor behavior. Monetary incentives affect an individual worker’s effort level, e , which has an impact on a supervisor’s choice of v , both of which are key determinants of output. It is therefore necessary first to understand the responses and relationships of the worker and supervisor equations before moving to a broader analysis of firm-wide profit implications.

In order to understand the circumstances under which supervisors would view verbal abuse as an attractive motivational mechanism, two polar cases are considered. Worker compensation is first assumed to depend only on base pay with no monetary incentives. Second, worker compensation is taken to depend exclusively on a piece rate linked to production.¹ Comparing outcomes under these two compensation structures yields insight regarding the impact of incentives on productivity and verbal abuse levels.

¹ The firm’s capacity to limit verbal abuse is temporarily ignored during this initial comparison, allowing supervisors the freedom to select a level of verbal abuse that maximizes personal utility independent of firm intervention.

If a worker's chosen effort level responds sensitively to monetary incentives but negligibly to verbal abuse, output per worker would be expected to have a high responsiveness to β , and firms would prefer a piece rate pay system for workers and strict monitoring of verbal abuse by the supervisor. If, however, it is the case that even in the absence of monetary incentives workers exert high effort levels and productivity is greatly enhanced by verbal exhortation, production could feasibly be augmented by removal of a piece rate and managerial tolerance of a high level of verbal abuse.

Beginning with worker choice, the worker takes as given the incentive structure, (α and β), as well as the level of verbal abuse (v) chosen by the supervisor. Under a purely piece-rate system, worker participation constraint is given by

$$(2a) \quad \beta q(\bar{e} - e) - v^d \geq \bar{u}_w$$

Substituting quantity from equation (1) into the worker participation constraint in equation (2a) yields

$$(2a') \quad \beta(e + \theta v)(\bar{e} - e) - v^d \geq \bar{u}_w$$

The worker is assumed to choose work effort e to maximize utility given in equation (2a'). Utility-maximizing work effort is easily found to be

$$(5a) \quad e^* = \frac{\bar{e}}{2} - \frac{\theta v}{2}$$

Under a system of flat rate compensation, a worker's participation constraint is given by

$$(2b) \quad \alpha(\bar{e} - e) - v^d \geq \bar{u}_w$$

The worker is assumed to believe that some minimal work effort is necessary to remain employed.

Thus, work effort choice is

$$(5b) \quad e^* = e_0,$$

where e_0 represents the baseline level of effort an individual worker would opt to exert in the absence of any motivation or incentives other than the implicit threat of termination. Baseline work effort is bounded above by the maximum tolerable effort level. That is, $e_0 < \bar{e}$. e_0 can be thought of as the minimum effort required of a worker to keep his or her position at the factory and can be assumed to be

less than the situation in which the worker is monetarily motivated $\left(e_0 < \frac{\bar{e}}{2} - \frac{\theta v}{2} \right)$. Substituting in optimal effort levels (equations 5a and 5b) into the output equation (equation 1) yields output as a function of verbal abuse under the two incentive structures:

$$(1a) \quad q = \frac{\bar{e}}{2} + \frac{\theta v}{2}$$

determines output for the piece rate scenario and

$$(1b) \quad q = e_0 + \theta v$$

determines output under a flat rate wage.

As can be seen from a comparison of equations (1a) and (1b), the definitive effect on q of the two incentive systems is ambiguous and depends on the relative values of \bar{e} , e_0 , θ and v . As a consequence, incorporating verbal abuse into the incentive structure determining worker effort counters the common assumption that pecuniary incentives are necessarily more effective than an hourly rate in determining worker productivity.

Moving to the supervisor's decision, the optimal choice of v is considered, taking as given effort choice e , and the incentive structure, δ and γ . Substituting quantity chosen by the worker under the worker piece-rate condition (equation 1a) into the supervisor's participation constraint (equation 3) yields

$$(3a) \quad \left(\delta + \gamma \left(\frac{\bar{e}}{2} + \frac{\theta v}{2} \right) \right) (\psi_i \bar{v} - v) \geq \bar{u}_s.$$

The model is degenerate if supervisor compensation depends exclusively on hourly compensation, and γ is therefore taken to be greater than 0. In addition, the relative level of hourly compensation is unconnected to a supervisor's choice of v , and δ is therefore assumed to be constant. For simplicity purposes and without loss of generality, δ is set to 0, implying that the supervisor is paid exclusively on a piece-rate basis. The implication is that the supervisor has a vested interest in the quantity being produced by the worker.² A supervisor's participation constraint is therefore given by

$$(3b) \quad \gamma \left(\frac{\bar{e}}{2} + \frac{\theta v}{2} \right) (\psi_i \bar{v} - v) \geq \bar{u}_s$$

Choosing v to maximize supervisor utility subject to this constraint yields

$$(6a) \quad v_\beta^* = \frac{\psi_i \bar{v}}{2} - \frac{\bar{e}}{2\theta}.$$

Alternately, under the condition that the worker is paid hourly (where quantity is given by equation 1b), the supervisor aims to maximize

² It can be shown that under a scenario where supervisor is paid both hourly and piece compensation, verbal abuse is increasing in γ (piece rate) and decreasing in δ (hourly wage)

$$(3b') \quad \gamma(e_0 + \theta v)(\psi_i \bar{v} - v) \geq \bar{u}_s$$

The utility maximizing level of v under this condition becomes

$$(6b) \quad v_\alpha^* = \frac{\psi_i \bar{v}}{2} - \frac{e_0}{2\theta}$$

Critically, it is evident by comparing (6a) and (6b) that verbal abuse is higher in the case where worker's compensation is not linked to output. Comparing verbal abuse in equations (6a) and (6b) yields

$$(7) \quad v_\alpha^* = \frac{\psi_i \bar{v}}{2} - \frac{e_0}{2\theta} > \frac{\psi_i \bar{v}}{2} - \frac{\bar{e}}{2\theta} = v_\beta^*$$

The implication of equation 7 is that in the absence of piece rate operating as a motivational device to generate worker output, supervisors with output-oriented motives will employ verbal abuse as an instrument to discourage the worker's tendency to shirk.

Combining these findings yields the following table:

Table 1

	v	e	q	$e, \text{ with } v \text{ substituted}$	$q, \text{ with } v \text{ substituted}$
β case:					
Piece Rate	$\frac{\psi_i \bar{v}}{2} - \frac{\bar{e}}{2\theta}$	$\frac{\bar{e}}{2} - \frac{\theta v}{2}$	$\frac{\bar{e}}{2} + \frac{\theta v}{2}$	$\frac{3\bar{e}}{4} - \frac{\theta \psi_i \bar{v}}{4}$	$\frac{\bar{e}}{4} + \frac{\theta \psi_i \bar{v}}{4}$
α case:					
Hourly rate	$\frac{\psi_i \bar{v}}{2} - \frac{e_0}{2\theta}$	e_0	$e_0 + \theta v$	e_0	$\frac{e_0}{2} + \frac{\theta \psi_i \bar{v}}{2}$

Notably, verbal abuse definitively rises in the presence of unaligned pecuniary incentives, where supervisor compensation is production based but worker compensation is a flat rate. Interestingly, however, the directional effects of e and q remain ambiguous and are subject to the relative values of model parameters ($\psi_i, \theta, \bar{v}, \bar{e}, e_0$). It is therefore possible for individual worker output to be higher under an hourly-wage system if it is the case that $q_\alpha \geq q_\beta$, where q_α is the quantity produced under conditions of misaligned incentives and q_β is the quantity under aligned, production-based incentives.

For $q_\alpha \geq q_\beta$, it must be the case that $e_0 + \theta v \geq \frac{\bar{e}}{2} + \frac{\theta v}{2}$, which simplifies to

$$(8) \quad e_0 \geq \frac{\bar{e}}{2} - \frac{\theta \psi_i \bar{v}}{2}$$

A similar analysis can be performed in consideration of effort under the different incentive structures. Given the assumption that $e_\alpha \leq e_\beta$ (monetarily incentivized worker effort is higher), a comparison of equations 5a and 5b implies that

$$(9) \quad e_0 \leq \frac{3\bar{e}}{4} - \frac{\theta\bar{\psi}_i\bar{v}}{4}$$

Comparing inequalities (8) and (9), it is clear that the restriction on e_0 that is necessary to guarantee that $e_\alpha \leq e_\beta$ may be consistent with $q_\alpha \geq q_\beta$. That is, it is possible for quantity to be higher with misaligned incentives even though work effort is lower.

Due to construction of quantity as a combination of effort and verbal abuse, a lower level of e could be counterbalanced by a high productivity boost from verbal abuse, θv . It is therefore theoretically plausible for production to increase under a low-powered pecuniary incentive structure supplemented by high levels of verbal abuse. A high level of baseline effort on the part of the worker (e_0), a large productivity effect from shouting (θ), and a high tolerance for verbal abusing or inflated perception of power on the part of the supervisor ($\bar{\psi}_i\bar{v}$) all increase the probability that quantity is higher when the worker is paid by a base rate rather than production-linked pay.

The preceding analysis has two basic implications for verbal abuse and effort at the individual worker level: i) holding all else constant, hourly pay for workers will induce supervisors to employ higher levels of verbal exhortation and ii) under certain conditions, verbal abuse can be more effective at increasing output than a production-linked wage.

However, in addition to an individual-level analysis, the case must also be considered from the broader firm profitability perspective. Despite the potential for inducing higher levels of production, verbal abuse also incurs additional costs to the firm in the form of worker and supervisor disutility. The balance of firm revenues and costs must therefore be considered when determining the firm's optimizing profit decisions.

Prior to a supervisor's choice of v and a worker's choice of e , factory managers make decisions with regard to worker wages (β, α) and supervisor wages (δ, γ). Before expanding the model to incorporate the firm's capacity to regulate abuse levels, profits are first considered under the preliminary condition that managerial control exists exclusively through the structuring of wages. That is, firms can manipulate the pecuniary incentive schemes, but take as given the consequent level of verbal exhortation that the supervisor opts to employ (v^*). Under the previously established conditions, the firm is again taken to make a binary decision between a fixed-rate wage and a piece-rate wage, subject to the participation

constraints of both workers and supervisors, and the level of verbal abuse, v_α^* or v_β^* chosen by the supervisor.

It is important to note that the presence of a union could also force firms to make wage structuring decisions that they would not otherwise employ and may not be profit-maximizing. Union presence in this case would register in the model by dictating the firm's binary wage decisions for workers and supervisors.

Considering instead that the firm is free to choose its payment schemes, wages for workers and supervisors can be obtained from their respective participation constraints under both an aligned and a misaligned wage structure. Beginning with the case where workers are monetarily incentivized, solving for β by substituting equation 5a (the expression for q) into equation 2a (the expression for worker utility) yields:

$$(10a) \quad \beta = \frac{\bar{u}_w + v^d}{\left(\frac{\bar{e}}{2} + \frac{\theta v}{2}\right)^2}$$

In the parallel case of misaligned incentives, solving for α by substituting equation 5a' into equation 2a' yields

$$(10a') \quad \alpha = \frac{\bar{u}_w + v^d}{(\bar{e} - e_0)}$$

Supervisor wages can similarly be obtained under each scenario. For the case where the worker is financially incentivized, solving for γ in equation 3b yields

$$(11a) \quad \gamma = \frac{\bar{u}_s}{\left(\frac{\bar{e}}{2} + \frac{\theta v}{2}\right)(\psi_i \bar{v} - v)}$$

Alternately, supervisor wages subject to an hourly worker wage are given by

$$(11a') \quad \gamma = \frac{\bar{u}_s}{(e_0 + \theta v)(\psi_i \bar{v} - v)}$$

Firm profits are defined as

$$(4) \quad \pi = pq - (\alpha + \beta q) - (\delta + \gamma q) - rk$$

and substituting wages, quantity, and verbal abuse from the piece rate and fixed rate conditions respectively (Table 1, Equations 10a, 10a', 11a, and 11a') gives firm profits as:

$$(4a) \quad \pi_{\beta} = p \left(\frac{\bar{e}}{4} + \frac{\theta \psi_i \bar{v}}{4} \right) - \frac{\bar{u}_s}{\left(\frac{\psi_i \bar{v}}{2} + \frac{\bar{e}}{2\theta} \right)} - \frac{\bar{u}_w + \left(\frac{\psi_i \bar{v}}{2} - \frac{\bar{e}}{2\theta} \right)^d}{\left(\frac{\bar{e}}{4} + \frac{\theta \psi_i \bar{v}}{4} \right)} - rk$$

$$(4a') \quad \pi_{\alpha} = p \left(\frac{e_0}{2} + \frac{\theta \psi_i \bar{v}}{2} \right) - \frac{\bar{u}_s}{\left(\frac{\psi_i \bar{v}}{2} + \frac{e_0}{2\theta} \right)} - \frac{\bar{u}_w + \left(\frac{\psi_i \bar{v}}{2} - \frac{e_0}{2\theta} \right)^d}{(\bar{e} - e_0)} - rk$$

Note, based on a comparison of (4a) and (4a'), that the relative magnitude of profits under the separate

wage structures is ambiguous ($\pi_{\alpha} > \pi_{\beta}$ or $\pi_{\alpha} < \pi_{\beta}$). The ambiguity arises in part from the indeterminate relationship between q_{α} and q_{β} and in part from the wage parameters. Profits could be higher or lower under either incentive structure. Considering each term in equations (4a) and (4a') yields the following insights:

- 1) The relative magnitude of revenue in the two cases depends on quantity under each condition, which in turn depends on model parameters. As price increases, the production differential becomes increasingly significant.
- 2) Supervisor wages are unambiguously higher in the case where workers are paid a flat rate wage. Supervisors require a compensating differential for the consequent increase in their use of verbal abuse given the assumed disutility from verbal exhortation.
- 3) The denominator of the term corresponding to the worker's wages is smaller in the piece rate scenario (implying an increase in cost) due to the fact that workers have to be compensated for the disutility accrued from higher effort levels in the presence of incentives. However, the numerator will likewise be smaller, due to the lower levels of verbal abuse and its resulting disutility. The relative effects of these factors is indeterminate and depends on parameter values, specifically d . The marginal disutility a worker perceives from additional effort versus additional verbal abuse dictates whether worker wages will be higher or lower under a flat rate structure.

Although the costs associated with supervisor compensation definitively rise under a flat-rate wage scheme for workers, the ambiguity of revenues and worker compensation results in ambiguous profit implications and firms will not unequivocally favor a piece rate or flat rate wage when supervisors have absolute control over verbal abuse levels. The manager's decision of how to structure incentives

would therefore involve analysis of the relative productivities under both scenarios, as well as the marginal disutility requiring a counterbalancing compensation.

Alternately, and perhaps more realistically, firms can be considered as having the additional capacity to monitor verbal abuse levels by regulating and punishing unwanted verbal exhortation (if v^* led to adverse profit effects). By imposing managerial standards, firms can actively choose the level of verbal abuse from a profitability perspective. Furthermore, in choosing v , firms also implicitly set the amount of output, q , that will be produced. Therefore, firm managers would be expected to control levels of verbal abuse to the point that maximizes profits by balancing the productivity increase with the additional compensating wage differential, subject to the income constraints of workers and supervisors.

Firms in this case seek to maximize π choosing β, α, γ , and v . If the manager's optimizing level of verbal abuse, v_π^* , is found to be lower than the supervisor's optimal choice of verbal abuse, v^* , then the firm has an incentive to curtail verbal abuse by imposing a tax or alternative monitoring and punishment procedure.

To solve for the optimizing level of verbal abuse from a firm-wide profitability perspective, profits are again considered subject to the participation constraints of workers and supervisors. However, rather than taking as given the supervisor's optimal level of verbal abuse, v^* , v is left as a choice variable for the firm to evaluate and set. As opposed to thinking of firms as designing an optimal punishment scheme, v can instead be modeled as wholly within the control of the firm, implying that managers have the power to "choose" an optimal level of verbal abuse in addition to wages for workers and supervisors.

Profits under a piece rate scenario are described as

$$(4b) \quad \pi_\beta = p \left(\frac{\bar{e}}{2} + \frac{\theta v}{2} \right) - \frac{\bar{u}_s}{(\psi_i \bar{v} - v)} - \frac{\bar{u}_w + v^d}{\left(\frac{\bar{e}}{2} + \frac{\theta v}{2} \right)} - rk$$

and under the flat-rate misaligned scenario:

$$(4b') \quad \pi_\alpha = p(e_0 + \theta v) - \frac{\bar{u}_s}{(\psi_i \bar{v} - v)} - \frac{\bar{u}_w + v^d}{(\bar{e} - e_0)} - rk$$

Taking the derivative with respect to v and setting equal to 0 yields the profit-maximizing choice of v . For the piece rate scenario this maximization is described by:

$$(12a) \quad \frac{d\pi_\alpha}{dv} = \frac{\theta p}{2} - \frac{\bar{u}_s}{(\psi_i \bar{v} - v)^2} - \frac{dv^{d-1}}{\left(\frac{\bar{e}}{2} + \frac{\theta v}{2}\right)} + \frac{\bar{u}_w + v^d}{2\left(\frac{\bar{e}}{2} + \frac{\theta v}{2}\right)^2} = 0$$

and, alternately, under that flat-rate scenario:

$$(12a') \quad \frac{d\pi_\beta}{dv} = \theta p - \frac{\bar{u}_s}{(\psi_i \bar{v} - v)^2} - \frac{dv^{d-1}}{(\bar{e} - e_0)} = 0$$

The firm's optimal choice of verbal abuse depends on a number of interrelated factors. To more clearly understand the mechanics of how verbal abuse affects the individual components of firm profits, it is helpful to consider the case from a marginal perspective, by comparing the marginal benefit (the increase in revenues) of an increase of verbal abuse against the marginal cost incurred by verbal abuse by generating worker and supervisor disutility.

Total revenue for the firm is simply P^*q , and total cost is worker and supervisor wages as well as capital costs. Given the assumption that quantity is linearly increasing in verbal abuse (see equation 1), holding all else constant, revenue is universally increasing as verbal abuse rises. Alternately, costs are almost universally increasing, as wages must rise to compensate workers and supervisors for the disutility associated with additional verbal abuse. The optimal level of verbal abuse from the firm's

perspective occurs at the point where the marginal increase in revenues subject to verbal abuse ($\frac{dTR}{dv}$)

is exactly equal to the marginal cost to the firm of additional verbal abuse ($\frac{dTC}{dv}$).

Beginning with revenues, substituting equations 1.1a and 1.1b as price and quantity yields

$$(13a) \quad TR_\beta = p\left(\frac{\bar{e}}{2} + \frac{\theta v}{2}\right)$$

in the case of aligned incentives and

$$(13a') \quad TR_\alpha = p(e_0 + \theta v)$$

in the case of misaligned incentives. The marginal effect of verbal abuse on total revenue in the aligned case is therefore

$$(14a) \quad \frac{dTR_\beta}{dv} = \frac{\theta p}{2}$$

and in the misaligned case

$$(14a') \quad \frac{dTR_\alpha}{dv} = \theta p.$$

Notably, revenues are consistently increasing in verbal abuse under both cases, but are twice as sensitive to increases in verbal abuse in the case where workers are not monetarily incentivized.

Shifting to cost considerations, total firm costs in the aligned wage scenario are

$$(15a) \quad TC_{\beta} = \frac{\bar{u}_s}{(\psi_i \bar{v} - v)} + \frac{\bar{u}_w + v^d}{\left(\frac{e}{2} + \frac{\theta v}{2}\right)} + rk.$$

and for the misaligned scenario are given as

$$(15a') \quad TC_{\alpha} = \frac{\bar{u}_s}{(\psi_i \bar{v} - v)} + \frac{\bar{u}_w + v^d}{(e - e_0)} + rk.$$

Marginal effects of verbal abuse on costs in the piece rate and fixed rate scenario respectively are given by

$$(16a) \quad \frac{dTC_{\beta}}{dv} = \frac{\bar{u}_s}{(\psi_i \bar{v} - v)^2} + \frac{dv^{d-1}}{\left(\frac{e}{2} + \frac{\theta v}{2}\right)} - \frac{\bar{u}_w + v^d}{2\left(\frac{e}{2} + \frac{\theta v}{2}\right)^2}$$

$$(16a') \quad \frac{dTC_{\alpha}}{dv} = \frac{\bar{u}_s}{(\psi_i \bar{v} - v)^2} + \frac{dv^{d-1}}{(e - e_0)}.$$

The firm optimally chooses the level of verbal abuse at which the expressions for $\frac{dTR}{dv}$ and $\frac{dTC}{dv}$ are equal. Graphically, two different renderings of this optimization can be seen in Appendix 1.

Several interesting conclusions come to light through a comparison of the profit implications of verbal abuse under the two polar incentive structures:

- 1) As previously noted, the marginal impact on revenues of an increase in verbal abuse under a fixed-rate wage structure is lower than that under a piece-rate scenario. The discrepancy arises from the interacting effects of motivational techniques. Under a piece-rate scenario workers choose a higher e than the minimum effort required due to a personally vested interest in the quantity produced. Therefore, when v is employed, the resulting increase in productivity allows workers to scale back their effort level without experiencing a resulting decline in quantity.
- 2) The marginal effect of verbal abuse on costs has an additional term in Equation 16a, the piece rate expression, which derives from an envelope theorem effect of verbal abuse that occurs when workers are both motivated by production-based pay as well as verbally exhorted. Under a fixed wage rate, verbal abuse channels in to the worker's utility function solely as disutility. Under a piece rate, workers' wages are linked to production, and verbal abuse in turn increases productivity, thereby generating a

feedback loop. Verbal abuse therefore has a simultaneous positive and negative effect on worker expenses from the firm perspective, both increasing worker disutility but also increasing quantity, in turn allowing for a lower wage.

3) It is not possible to deduce with certainty whether the optimizing choice of v from the firm's perspective will be definitively higher under either incentive structure. The ambiguity is due to the fact that, while verbal abuse is more efficient at increasing production when workers are not pecuniarily motivated, the abuse also has a more direct impact on costs, as it singularly factors in to workers' income constraints as disutility, and thereby requires higher pecuniary compensation.

4) The relative values of parameters are crucial in determining both the attractiveness of verbal exhortation from a profitability perspective under any circumstances as well as which incentive scheme will ultimately yield higher profits. Several observations include:

- i. A higher value of \bar{e} (threshold for effort) raises the profit-maximizing level of v in both cases.
- ii. A higher value of e_0 lowers the profit maximizing level of v in the flat-rate scenario. If workers have a high baseline level of e that they will exert without incentives, the use of verbal abuse is rendered less necessary.
- iii. A higher value of d lowers the profit maximizing level of v . If workers get high levels of disutility from verbal abuse it is more costly for the firm to compensate with wages.
- iv. A higher p raises the profit maximizing level of v . Production is monotonically increasing with verbal abuse, so a higher price per unit makes additional verbal abuse more attractive.

Ultimately, the model does not illustrate with certainty whether optimal verbal abuse from the firm's perspective is higher or lower under either wage structure. Profits are likewise ambiguous, and in either case dependent on optimal v (v_{π}^*). It therefore becomes necessary to turn to the data in order to derive values for the relevant parameters and develop a complete understanding of verbal abuse as it truly contributes or detracts from firm profitability.

Before concluding the theoretical section, the analysis closes with a brief discussion of certain relevant psychological factors. Verbal abuse has been shown to have extensive and significant links to psychological factors both in its origination as well as its negative effects. The following discussion briefly considers the social psychological factors that could have an impact on the model, both in contributing to the persistence of verbal abuse as well as its resulting ramifications for worker mental health.

Up to this point the model has assumed that the primary grounds for the existence of verbal abuse is a supervisor's determination to motivate the worker. However, this assumption ignores the

important possibility that there are alternative motivational options available to the supervisor to influence line productivity. Other factors, such as stress induced by the pressure to meet production quotas, could be an important contributing force that drives supervisors to revert to the impulsive use of verbal exhortation rather than rely on non-abusive options.

To consider accounting for stress and cognitive load, the theoretical framework can be adapted by designing the setup such that v is a subset of a , where a is defined as supervisory attention directed at the worker. The amount of managerial attention conveyed in the form of v is given by $f(a)$, where f is a function of the supervisor's stress level, cognitive load, and the prevailing factory culture. In other words, if supervisors were under significant performance pressure as a result of deadlines and production quotas or situated in a factory culture where verbal abuse was a cultural norm, prevailing literature suggests that a larger portion of a would be manifested in the form of verbal abuse. Under this framework, quantity is expressed as $q = e + \theta a$, and the supervisor has the ability to motivate workers via means other than verbal abuse. Since v is a subcomponent of a , it follows that $v \leq a$, implying that the amount of verbal abuse is less than or equal to the total cumulative motivational supervisory effort.

Under this setup, the worker's utility function is unchanged. However, under the assumption that supervisors get equal disutility from shouting and using an alternative motivational means, their utility function is now given by

$$(3c) \quad (\delta + \gamma q)(\psi_i \bar{a} - a) \geq \bar{u}_s.$$

Performing the equivalent backwards induction analysis as in the previous case yields the same results for workers' optimal choice of e and supervisors' optimal choice of a . The cases diverge when considering worker wages and the consequential implications for firm profits.

Under a system with alternative motivational techniques, profits under an aligned wage structure are given by:

$$(4c) \quad \pi_\beta = p \left(\frac{\bar{e}}{2} + \frac{\theta a}{2} \right) - \frac{\bar{u}_s}{(\psi_i \bar{a} - a)} - \frac{\bar{u}_w + (f(a))^d}{\left(\frac{\bar{e}}{2} + \frac{\theta v}{2} \right)} - rk$$

and under a misaligned structure:

$$(4c') \quad \pi_\alpha = p(e_0 + \theta a) - \frac{\bar{u}_s}{(\psi_i \bar{a} - a)} - \frac{\bar{u}_w + (f(a))^d}{(e - e_0)} - rk.$$

Notably, revenues are equivalent to those derived under the previous conditions, and supervisor compensation likewise remains unchanged.³ However, workers require less compensation due to the absence of the disutility incurred when all supervisory efforts are communicated in an abusive manner. Profits, therefore, will be higher when supervisors utilize positive motivational techniques as compared with abusive techniques. A further implication is that environmental factors that affect the social psychology of supervisors could predispose supervisors toward the use of verbal abuse in a manner that has sub-optimal profit implications.

Shifting focus to the adverse consequences of verbal abuse, in addition to causing disutility to workers, verbal abuse as an assertion of power could have meaningful psychological effects on a worker's mental health. The primary mechanism through which the exercise of power would occur would be by creating a feeling of powerlessness and lack of agency in victims of abuse.

If verbal abuse were to lower self-esteem and erode an individual's perception of self-efficacy, a worker's mindset toward empowerment and ability to take action could be manifested in a reduction of \bar{u}_w . Psychological studies demonstrate that individuals in low-powered mindsets have a diminished perception of their own agency and are less likely to take action. Consistently being subjected to verbal abuse could lead workers to lose sight of alternative options and to overlook alternate employment options. In this case, worker utility could be rewritten as:

$$(2c) \quad (\alpha + \beta q)(\bar{e} - e) - v^d \geq \bar{u}_w^{\phi v}$$

where $\phi \leq 0$ and \bar{u}_w is therefore decreasing in verbal abuse at a marginally diminishing rate. From an individual worker's perspective, the presence of a power channel implies a lower perceived reservation utility, and therefore lower wages and overall utility. From the firm's perspective, verbal abuse would have positive profit implications because workers would require less compensation to reach their threshold willingness to work. Holding all else constant, verbal abuse would also be higher, as workers would be willing to tolerate higher levels of abuse.

The preceding sections include a host of implications for productivity, profits and abuse levels, and provide an outline of the various interconnected relationships of incentives and their related parameters. At the heart of the matter lies the question of how firms choose to motivate and incentivize their workforce in the most efficient, profit-maximizing manner. This model offers a number of insights

³ Assuming that alternative motivational techniques are equally effective as verbal abuse and supervisors still get disutility from motivational efforts.

and hypotheses that, when turning to the actual data, will be useful in guiding the empirical analysis and testing:

Hypothesis 1: Verbal abuse is predicted to be higher when workers are paid a flat rate as compared to a piece rate.

Hypothesis 2: Verbal abuse is predicted to be lower when supervisors are paid a flat rate as compared to a piece rate.

Hypothesis 3: The disutility accrued to victims of verbal abuse would require a compensating wage differential unless it is the case that abuse lowers workers' sense of agency, which could result in the opposite effect of lowering required wages.

Hypothesis 4: For a business case to exist, verbal abuse would necessarily increase productive efficiency of workers by a greater margin than the required compensating differential.

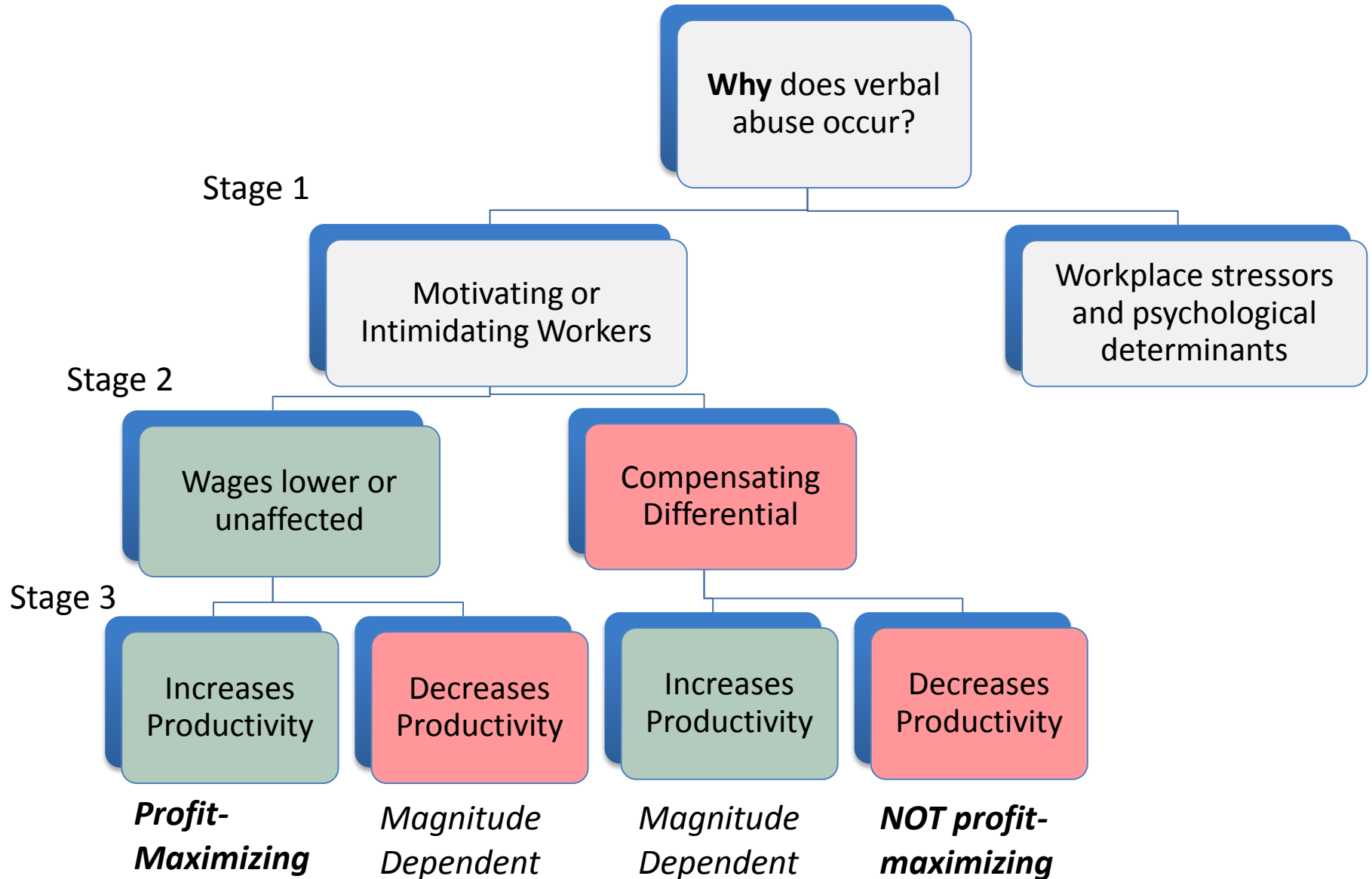
Hypothesis 5: The profit-maximizing level of verbal abuse occurs at the point at which the marginal revenue gain from an increase in verbal abuse equals the increase in marginal cost.

Hypothesis 6: Social psychological factors such as the supervisor stress level, cognitive load, or a prevailing factory culture favoring verbal abuse all have the potential to prompt supervisors to resort to verbal abuse.

SECTION 3: EMPIRICAL STRATEGY

Empirically testing the model developed in the Section 2 involves measuring the directional relationships between verbal abuse and the prevailing incentive structures, compensation, individual productivity, and profits. Obtaining evidence for the previously derived hypotheses necessitates several stages of analysis, which can be visually summarized by Chart 1:

Chart 1



Specific descriptions of the objectives and strategies of each of the individual stages of analysis are as follows:

- i. Assessing the impact of different incentive structures, both for the worker and the supervisor, on supervisors' chosen levels of verbal abuse (Hypotheses 1 and 2). To test these hypotheses, worker reports of verbal abuse are regressed as the dependent variable in the following form:

$$(17) \text{ Verbalabuse} = \beta_0 + \beta_1 \text{Sewer_Incentives} + \beta_2 \text{Sup_Incentives} + \beta_3 \text{Psych}_{ij} + \beta_4 \text{Demographics}_{ij} + \varepsilon$$

- ii. Assessing the impact of verbal abuse on individual worker wages to test the potential for a compensating differential for victims of verbal abuse (Hypothesis 3). To test the impact of abuse on wage rates, worker wages are regressed on levels of verbal abuse:

$$(18) \text{ Wages} = \beta_0 + \beta_1 \text{Verbalabuse} + \beta_2 \text{Ind_Capital}_{ij} + \beta_3 \text{Demographics}_{ij} + \varepsilon$$

- iii. Assessing the impact of verbal abuse on individual worker-level productivity to determine whether verbal abuse is an effective means for supervisors to extract additional productive output from workers (Hypothesis 4). The model predicts that for verbal abuse to be a part of a profit-maximizing strategy, the relationship would be positive. To test the hypotheses relating to efficiency, individual worker productivity is regressed on worker reports of verbal abuse:

$$(19) \text{ Ind_Productivity} = \beta_0 + \beta_1 \text{Verbalabuse} + \beta_2 \text{Ind_Capital}_{ij} + \beta_3 \text{Demographics}_{ij} + \varepsilon$$

- iv. Assessing the comprehensive impact of verbal abuse on firm profitability to determine the factory-level implications of pervasive verbal abuse. Unfortunately, data limitations preclude a regression analysis of profits on verbal abuse. The relevant data is presented and preliminary relationships are discussed, as well as steps for future analysis pertaining to the question of profitability.

SECTION 4: DATA

Analysis is performed on survey data collected by the Better Work Impact Evaluation. Better Work is a program targeting labor standard improvements in the garment sector of developing countries (Better Work, 2012). Established in 2007 and beginning operations in 2009, Better Work is a partnership between the International Labour Organization and the International Finance Corporation aimed at enforcing factory compliance with local labor law and core labor standards as well as improving the business competitiveness of producing countries (International Labor Organization: Better Work 2014). The Better Work program involves factory audits, labor standards improvement, and stakeholder involvement (International Labor Organization: Better Work, 2014). The assessment service involves

data collection by Enterprise Advisors to evaluate factory compliance with a wide array of labor standards and labor law. A separate Impact Evaluation program organized by researchers at Tufts University conducts surveys of workers and managers in each factory. Surveys and enterprise assessments are the source of the data for the following analyses, and will be discussed in further depth below.

The analyses presented in Section 5 rely primarily on data from the Impact Evaluation surveys. Surveys comprise in-depth questionnaires of factory workers and managers to ascertain working conditions and employee perspectives. Each factory survey incorporates five instruments, four of which are individually surveyed managers and the fifth of which includes a random selection of factory workers. The manager surveys include the Financial Manager, General Manager, Human Resources Manager, and Industrial Engineer, and topics range from unit output to total employment. The worker survey portion consists of a maximum of 30 randomly selected workers, not to exceed five percent of the total workforce.

Participation is voluntary, randomized within the factory, and workers are stratified by position. The worker surveys cover a wide array of topics, including basic demographics and information such as wages, hours, health, family life, and contracts.

The Enterprise Assessments use a checklist approach to determine noncompliance on each sub-point of surveyed labor issues. Each country assessment includes a common section covering core international labor standards that derive from the ILO Declaration on Fundamental Principles and Rights at Work. The fundamental rights are freedom from exploitive child labor, discrimination, and forced labor and the rights to freedom of association and collective bargaining. Country assessments also include a second section of questions related to working conditions tailored to assess compliance with country-specific national labor laws. Such topics include compensation, occupational safety, and working time (Better Work, 2012).

Survey data ranges from 2010 to 2013 and the total number of surveyed factories varies by country. Table 2 describes the number of factories surveyed each year for each respective country. Due to low numbers of total observations, Haiti and Nicaragua are excluded from the analysis, and tests are run on factory data taken from Jordan, Vietnam, and Indonesia.

The following four subsections include summary tables and descriptive statistics of the utilized variables for each of the four empirical components. Additionally, an index of all variables, corresponding survey questions, and response options can be found in Appendix 2.

Table 2**Number of Factories Surveyed per Year by Country**

	2010	2011	2012	2013
Jordan	13	15	6	24
Vietnam	43	46	49	50
Haiti	-	23	7	-
Indonesia	-	35	29	17
Nicaragua	-	-	6	4

4.1: Verbal Abuse Regression Data Descriptions

As specified in Section 3, to test the hypothesized theories regarding the determinants of workplace verbal exhortation, verbal abuse is regressed on measures of incentive structures, psychological factors, and demographic control variables (see Equation 17).

The dependent variable measuring verbal abuse comes from individuals' responses to a worker survey question that queries "Is verbal abuse such as yelling or vulgar language a concern for workers in your factory?" Workers had a binary choice to respond negatively ("Not a concern") or affirmatively ("Yes"). A positive response would prompt a follow-up set of options for the worker to indicate how he or she chose to respond to the existing concern, such as "Yes, discussed with a supervisor."⁴ Workers could alternately respond with "Do not know" (coded as -8) or "Do not want to answer" (coded as -9). For purposes of the empirical analysis, *Verbalabuse* is treated as a dummy variable, where 0 corresponds to a worker who answered that verbal abuse is not a concern, and 1 corresponds to a worker who reported concern. Missing observations were not included in the analysis. Workers who declined to respond ("Do not know" or "Do not want to answer") were excluded from initial analyses. Supplemental tests in Vietnam and Jordan were performed in which actively declined responses (-8 or -9) were recoded as positive reports of verbal abuse to consider the possibility that respondents who chose not to answer could be reluctant victims fearing retribution.⁵ Results before and after this adjustment are included in the results section and appendices. Table 3 shows the tabulations for *Verbalabuse* in each country, alongside the corresponding observations after applying the recoding for voicing reluctance.

Additionally, to further address the issue of individual respondents fearing identification as informants, *Avg_VA* is constructed to measure the average verbal abuse a typical worker could expect in a given factory based on aggregate responses of workers per firm. Positive responses are summed and divided

⁴ For a complete list of survey options, see Appendix 2

⁵ Note: these adjustments are not applied to Indonesian observations due to an already very high positive response rate that seems to indicate a lack of reluctance in reporting grievances.

by the number of total respondents per factory. Table 4 includes summary statistics for the dependent variable, *Avg_VA*, as well as the dummy variable *Verbalabuse*. Charts 2a, 2b, and 2c are histograms of the *Avg_VA* distribution prior to inclusion of declined responses.

Table 3

Tabulation of Verbal Abuse Responses before and after Voice Adjustment

	Jordan		Vietnam		Indonesia
	Original Responses	Voice Adjusted	Original Responses	Voice Adjusted	Original Responses
<i>"Is verbal abuse a concern for workers in your factory?"</i>					
<i>No</i>	366	366	4,718	4,718	242
<i>Yes</i>	307	438	377	418	890
Total	673	804	5,095	5,136	1132

Note 1: Responses were adjusted by coding "Do not want to respond" and "Do not know" as "Yes"

Note 2: The voicing adjustment was not applied in Indonesia due to very high report levels

Table 4

Summary Statistics for *Avg_VA* and *Verbalabuse*

		Mean	Median	SD	Min	Max	Count
Jordan	<i>Avg_VA</i>	0.45	0.4	0.2	0.0	1.0	1468
	<i>Verbalabuse</i>	0.46	0.0	0.5	0.0	1.0	673
Indonesia	<i>Avg_VA</i>	0.78	0.8	0.2	0.0	1.0	2241
	<i>Verbalabuse</i>	0.79	1.0	0.4	0.0	1.0	1132
Vietnam	<i>Avg_VA</i>	0.07	0.0	0.1	0.0	0.6	5136
	<i>Verbalabuse</i>	0.07	0.0	0.3	0.0	1.0	5095

Measures for the independent variables of interest, *Sewer_Incentives* and *Sup_Incentives* derive from questions posed to the Human Resources Manager that ask "What fraction of a sewer's pay is based on her own production?" and "What percentage of a typical supervisor's pay is based on the performance of the workers he or she supervises?" respectively.

Chart 2a

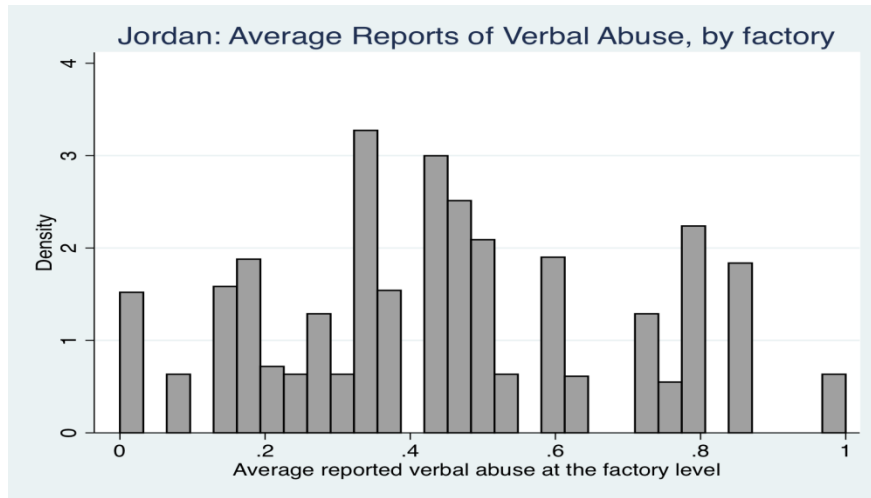


Chart 2b

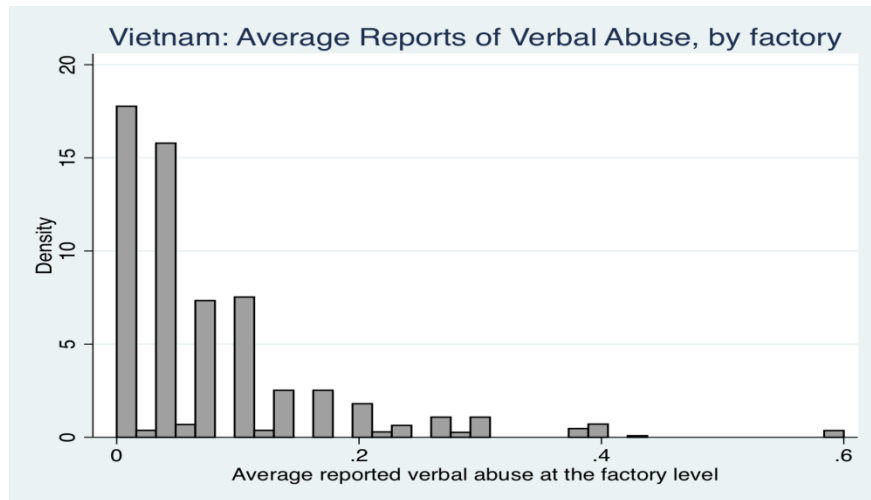
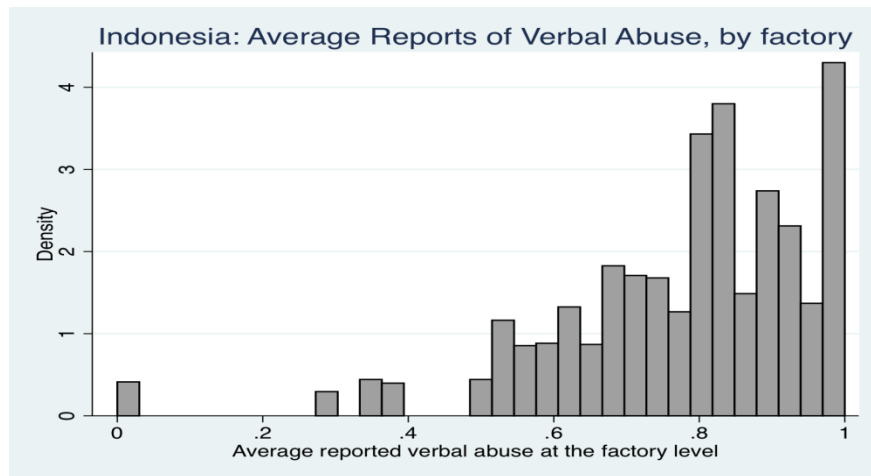


Chart 2c



Answer options range from 0 to 11, with 0 coding for “none” and 11 coding for “all,” and the mid-range values representing to 10 percentage point increments of aggregate pay. Table 5 includes a breakdown of the key dependent variables *Sewer_Incentives* and *Sup_Incentives* for each country.

For demographic control variables, Jordan is the only survey to inquire after each respondent’s country of origin (due to the large contingency of migrant workers), and a variable *Birthplace* is therefore included to account for possible ethnicity biases. For all countries, a variable *Female* is included, coded 0 for male respondents and 1 for female respondents.

Table 5

Tab of Incentive Schemes for Workers and Supervisors

Variable Coding		Jordan		Indonesia		Vietnam	
		Count	Percent	Count	Percent	Count	Percent
0	None	683	71.7%	1028	71.6%	2218	57.3%
1	Less than 10 percent	41	4.3%	171	11.9%	30	0.8%
2	10 to 20 percent	89	9.3%	53	3.7%	120	3.1%
3	20 to 30 percent	20	2.1%	30	2.1%	61	1.6%
4	30 to 40 percent	58	6.1%	28	1.9%	13	0.3%
5	40 to 50 percent	-	-	28	1.9%	21	0.5%
6	50 to 60 percent	-	-	26	1.8%	60	1.5%
7	60 to 70 percent	58	6.1%	-	-	30	0.8%
8	70 to 80 percent	-	-	44	3.1%	120	3.1%
9	80 to 90 percent	4	0.4%	-	-	256	6.6%
10	All of a sewer’s pay depends on her number of pieces completed	-	-	28	1.9%	944	24.4%
Total		953		1436		3873	

Variable Coding	What percentage of a typical supervisor’s pay is based on the performance of the workers he or she supervises?	Jordan		Indonesia		Vietnam	
		Count	Percent	Count	Percent	Count	Percent
0	None. Supervisor pay does not depend on line production.	683	68.4%	506	39.3%	2286	59.3%
1	Less than 10 percent	20	2.0%	56	4.3%	347	9.0%
2	10 to 20 percent	61	6.1%	83	6.4%	90	2.3%
3	20 to 30 percent	58	5.8%	58	4.5%	-	-
4	30 to 40 percent	-	-	-	-	90	2.3%
5	40 to 50 percent	29	2.9%	121	9.4%	60	1.6%
6	50 to 60 percent	30	3.0%	-	-	33	0.9%
7	60 to 70 percent	58	5.8%	30	2.3%	30	0.8%
8	70 to 80 percent	-	-	45	3.5%	120	3.1%
9	80 to 90 percent	-	-	49	3.8%	195	5.1%
10	A supervisor’s pay depends only on line production	60	6.0%	341	26.5%	604	15.7%
Total		999		1289		3855	

Measures of psychological factors, specifically cognitive load and power, varied in availability for each country, and a range of variables are therefore used in the analyses. All country regressions include a measure of managerial perception of supervisor stress levels and worker-reported comfort levels with supervisors. The variable *Sup_Stress* comes from questions posed to General Managers regarding top problems within the factory. The survey asks managers to rate the problematic degree of "stress level of supervisors" on a scale of 1 to 4, with a response of 1 corresponding to a "Serious Problem" and a response of 4 corresponding to "Not a Problem." The variable *Sup_Comfort* is constructed from responses to a question posed to workers that asks, “If you were having a problem at your factory, how comfortable would you feel seeking help from your supervisor?” Responses are coded

on a scale of 1 to 5, with 1 corresponding to “very comfortable” and 5 corresponding to “not comfortable at all.”⁶

In addition to *Sup_Stress*, a supplemental measure of factory chaos is included for each country to control for environmental contribution to cognitive load and stress. For Indonesia and Vietnam a variable *Rush_Orders* derives from the same set of “problem” variables posed to General Managers, and asks the degree to which “Too many rush orders” is perceived as a major factory issue with the answers again being scalar from 1 to 4. For Jordan, a variable *Late_Penalty* derives from the General Managers’ rating the level of “Customer penalties for late deliver” on the same 1 to 4 scale.

According to relevant literature, concern with low wages is an important contributor to verbal abuse levels. The variable *LowWageConcern* is a dummy constructed from worker responses to the question “Are low wages a concern for workers in your factory?” and the control is used for the Vietnam analysis. Very low response rates by surveyed workers in Indonesia and Jordan precluded the variable’s inclusion in the primary analysis, but supplementary regression tables in Appendix 6 demonstrate its relevance.

The most relevant available data pertaining to the theorized role of trade unions is a question posed to the General Manager asking “Does this factory have a trade union representative?” Table 6 describes the breakdown of factories with and without trade union representative by country, as reported by general managers. In Vietnam, 4,513 out of the 4,575 surveyed factories reported the presence of a representative, while Jordan and Indonesia encompassed a more even divide. The lack of variability in the Vietnam observations led the variable to be omitted from the analysis. For Jordan and Indonesia, the variable was excluded from the final analyses due to lack of significance, but regression analyses with a union control variable included are presented in Appendix 11 as a point of comparison.

Finally, measures to control for potential supervisor biases that could contribute to the frequency and magnitude of abuse also differed for each country according to applicability and availability. For Jordan, the widespread existence of migrant labor instills an inherent opportunity for ethnicity bias, measured in part by the previously described Birthplace variable and is supplemented by *Sup_Language*, a dummy variable that indicates workers’ responses to the question “Does your supervisor speak your language?” For Indonesia, potential biases are measured by a variable constructed from a question regarding obstacles to promotion: workers are asked, “Are there any barriers you face getting promoted in your factory?” and the variable *Promotion_Bias* is coded as 1 for all respondents who answered “Ethnic Minority” and 0 otherwise. Additionally, to proxy for individual

factory initiatives toward enforcing fair working conditions, a dummy variable *Ind_CBA* is included which relates whether a given worker is a member of a Collective Bargaining Agreement. The same variable is used for Vietnamese workers. Appendix 4 includes a breakdown of all factor variables, including the previously mentioned *Birthplace*, *Sup_Comfort*, *Sup_Stress*, *Rush_Orders*, and *Late_Penalty*.

Table 6

Does this factory have a trade union representative?

	Jordan	Vietnam	Indonesia
No	632	62	813
Yes	579	4513	914
Total	1211	4575	1727

Several notes on data limitations:

1) In Vietnam, a large number of workers responded negatively when asked if verbal abuse is a factory problem. This comparatively low level of recorded concern could either stem from a fear of reporting or the reality that Vietnamese supervisors' management practices involve less verbal abuse. However, low levels of variation in the primary dependent variable make it difficult to draw conclusive results with regard to the link between verbal abuse and incentive structures.

2) Relative to the size of the dataset, Indonesia has a very low response rate for individuals who answered the question regarding verbal abuse (roughly 50%), which greatly reduces the dataset. Manager responses to the question of incentive schemes are likewise missing many observations, and also generally lack variation, with almost all workers paid solely by the hour.

3) For Jordanian workers, ethnicity seems to play a major role in the decision to report grievances, with ethnic Jordanians far more likely to report positive instances of verbal abuse than migrant workers, as can be observed below in Table 6. This problem is corrected for partially by using averages per factory, and by including birthplace dummy variables in the regression with verbal abuse as the dependent variable of interest.

Table 6**Jordan: Cross Tabulation of Verbal Abuse Reports and Migrant Workers**

Ethnicity	Verbal abuse concern		Total
	No	Yes	
Jordanian Worker	61	179	240
Migrant Worker	305	128	433
Total	366	307	673

4.2: Wages Regression Data Descriptions

The second step outlined in Section 4 involves testing the relationship between earnings and verbal abuse by running a regression with individual wage rate as the dependent variable to test for a potential compensating differential (Equation 18).

The data for wages comes from worker-reported standard payment figures, adjusted for pay frequency and converted into hourly dollar values. Workers are first asked “How often are you paid?” with options including weekly, biweekly, etc. and next asked “How much money did you receive the last time you were paid?” with answers recorded in respective national currencies. The numerically reported salaries are first adjusted according to pay frequency to determine average weekly pay, then divided by an individual’s total weekly work hours,⁷ and lastly converted to US dollars according to approximated current prevailing exchange rates.⁸ Additional adjustments are made to correct for clear instances of misreporting where workers entered wage values in thousands or millions. Respondents who lacked pay regularity are omitted. Charts 3a, 3b, and 3c depict wage distributions for each country.

For the Jordan dataset, observations exceeding \$6 per hour (greater than the 99th percentile) are excluded from the analysis. For the Indonesia dataset, observations below \$0.05 are excluded from the analysis (less than the 1st percentile). The log of wages is calculated as the dependent variable of interest for all countries to allow for a logarithmic distribution.

The variable *Promoted* represents workers’ responses to the question “Have you been promoted since you entered the factory?” with observations reflecting the number of promotions obtained, capped at a maximum of 3.⁹ To measure training in Indonesia and Vietnam the variable *BasicSkillsTraining* is a dummy variable for workers’ responses to the query “Did you receive training on basic skills when you first started working in this factory?” For Jordan, the variable *Days_Training* is

⁷ Total weekly hours are calculated separately for each worker according to responses to questions regarding weekly workdays, average start times, and average end times. Additional adjustments are made for clear instances of mistaken usage of AM versus PM. Summary statistics for weekly total hours are included in Appendix 3I.

⁸ Applied rates are 21,000 Vietnamese Dong to the US dollar, 0.71 Jordanian Dinar to the US dollar, and 12,000 Indonesian Rupiah to the US dollar. Current rates were rounded to the nearest \$1,000 within 5 percent.

⁹ 0= no promotions, 1=one promotion, 2= two promotions, 3= three or more promotions.

constructed from the Human Resources Manager survey question that asks, “How much time is spent on basic skills training for a typical new employee?” and responses were recoded to make all observations in units of days.

Chart 3a

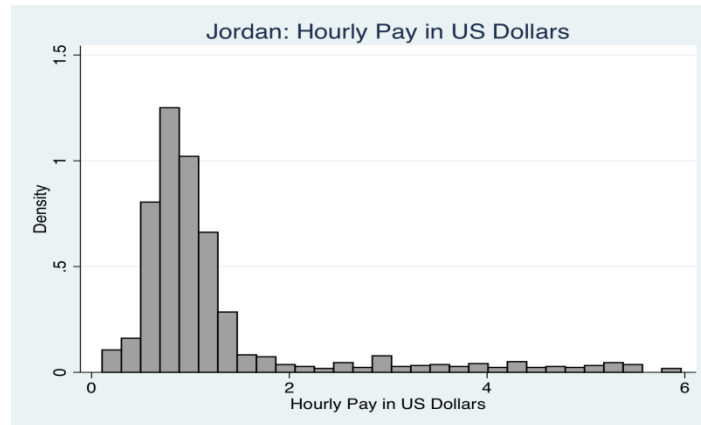


Chart 3b

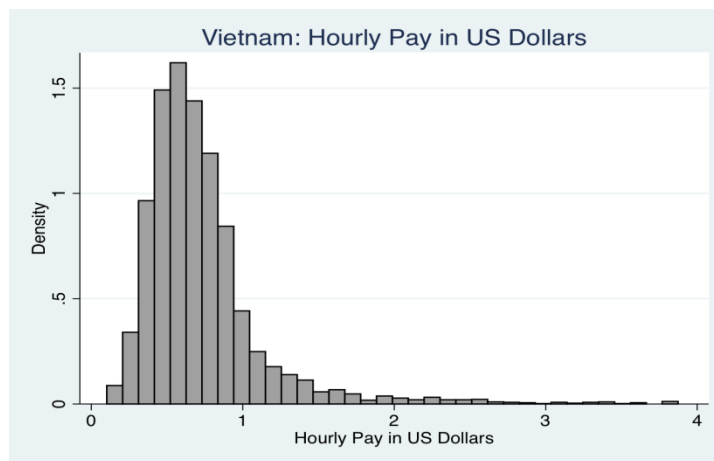


Chart 3c



Additional control variables include individual contract specifications as well as job titles. The variable *Contract_Type* is regressed as a factor variable to control for distinct contract types. Options include “Training,” “Subcontract,” “Bonded,” and “Fixed Time,” among others. All options are listed and summarized in detail in Appendix 3. Workers are additionally asked “What is your job in the factory,” and dummy variables, *Job_[type]* are included to control for position-based pay discrepancies. Individuals who identified as “Supervisor” are excluded from all regressions. Appendix 4 includes an exhaustive list of job types and observation counts. Appendix 3 contains a breakdown of all factor variables, including *Education* and *Contract_Type*.

4.3: Productivity Regression Data Descriptions

The third stage, as outlined in Section 4, involves testing the directional effect of verbal abuse on an individual’s productive efficiency by regressing productivity on verbal abuse and controls for individual capital and demographic characteristics (Equation 19).

Due to data availability limitations for the dependent variable, the third stage of analysis is run exclusively on data from Vietnamese factories. The key dependent variable, *Time_to_Target*, is constructed from worker reports of the time of day he or she typically completes the production target set by his or her supervisor. The question was posed both for Monday and Friday completion times, and each was subtracted from reported start times on the corresponding day, to yield a measure for hours to completion. Adjustments are made for clear instances of mistaken usage of AM versus PM. Table 8 provides summary statistics for the variables *Time_to_TargetM* and *Time_to_TargetF*, and Chart 4a and 4b illustrate the corresponding histograms.

Table 8

Vietnam: Summary Statistics for Dependent Variable in Productivity Regression Analysis

<i>Standard time needed to reach daily production target</i>	Mean	Std. Dev.	Min	Max	Obs
<i>Monday</i>	10.01	1.56	3.5	16	1581
<i>Friday</i>	10.064	1.56	3.5	16.5	1543

Chart 4a

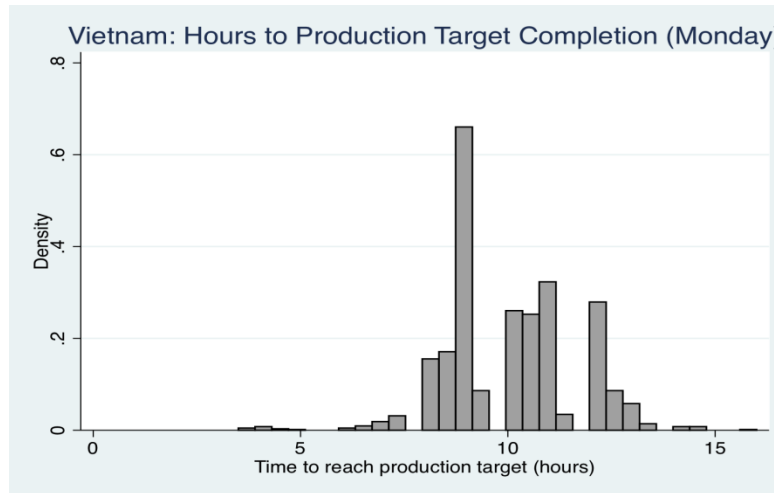
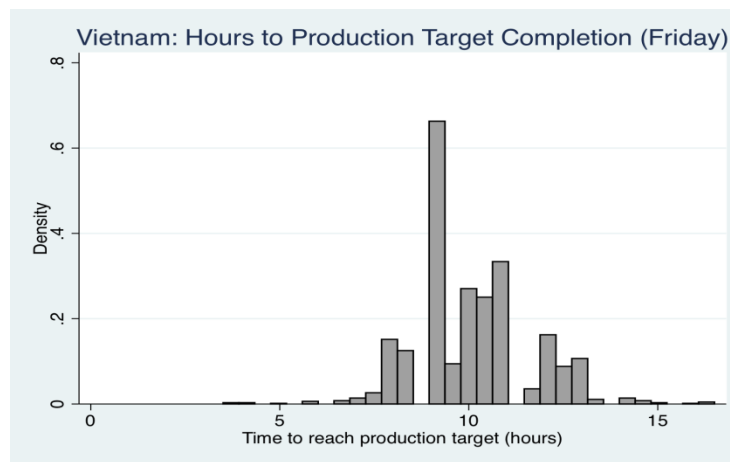


Chart 4b



Measures of verbal abuse as the key independent variable are equivalent to those utilized in stages 1 and 2. The analyses are performed both with individually reported grievances as well as factory averages to measure the likelihood of abuse risk. Additional versions are also estimated to allow for recoding of declined responses to address the voicing concern.

Measures of individual capital include education, years of experience, and training, as previously described. Demographic controls include age and gender. In accordance with the literature asserting that fairness and equity affect worker productivity, *Ind_CBA* is included to proxy for the existence of worker rights systems. *Rush_Orders* is again included to control for organizational chaos and stress that could detract from individual productive efficiency.

To control for probable correlation between the key dependent variable and the error term, a two stage least squared regression is employed with two instrumental variables used as predictors of verbal abuse. The first utilized instrumental variable is the previously discussed *Sup_Comfort*, measuring the reported comfort level a worker feels in approaching his or her supervisor with a concern. The second, *Bullying_Compliance*, comes from the Vietnam Enterprise Assessment, representing an external Better Work source’s judgment of factory compliance with the question “Have any workers been bullied, harassed, or subjected to humiliating treatment?”

4.4: Profits Discussion Data Descriptions

Although limited observations at the factory level inhibit a full regression analysis of firm profits on verbal abuse, preliminary findings with regard to directional correlation are briefly addressed. Data from Vietnam Financial Manager reports of costs and revenues is used to construct a measure of firm profits. A single observation for average verbal abuse is used to measure factory-wide verbal abuse. Chart 5 depicts a histogram of firm profits, measured in US dollars, and Table 9 provides summary statistics for the measures of revenues and costs used in the construction of the profit variable, as well as for the profit variable itself. Revenue and Cost figures exceeding \$30,000,000 are dropped, and profits calculated below -\$200,000 (less than the 5th percentile) were excluded due to errors in reporting and missing values.

Chart 5

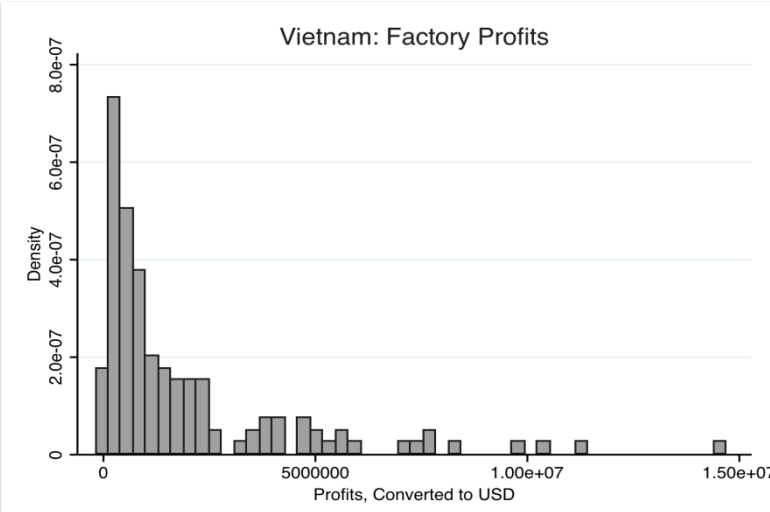


Table 9**Vietnam: Profit Analysis Summary Statistics**

Prior to Data Adjustments						
	Mean	Median	SD	Min	Max	Count
<i>CostsUSD</i>	1,569,420.40	250,381.00	3,808,550.20	3,095.20	24,748,714.00	177
<i>Revenue</i>	3,948,816.30	1,274,247.00	7,482,034.20	120,000.00	50,000,000.00	146
<i>Profits</i>	2,341,433.70	928,203.70	4,995,117.10	-7,048,857.00	41,690,332.00	142
Post-Data Adjustments						
	Mean	Median	SD	Min	Max	Count
<i>CostsUSD</i>	1,013,985.00	203,047.60	25,111,284.00	14,057.14	18,244,000.00	137
<i>Revenue</i>	2,962,904.00	1,155,000.00	4,386,485.00	120,000.00	27,000,000.00	137
<i>Profits</i>	1,952,840.00	958,785.70	2,534,239.00	-172,702.10	14,712,857.00	133

SECTION 5: RESULTS AND DISCUSSION

Four tiers of analysis are executed to parse out the role of verbal abuse in factory operations. Verbal abuse is first considered from the perspective of its origination, followed by its resulting impact. Discussions of the results for each stage follow.

5.1: Verbal Abuse Regression Results

The dependent variable *Avg_VA* is regressed on the key independent variables *Sewer_Incentives* and *Sup_Incentives* as well as hypothesized psychological factors and additional control variables for each of the three countries. Clustered standard errors are used by factory ID to control for factory fixed effects. Tables 10a, 10b, and 10c display the regression results, and asterisks correspond to significance levels of 5, 10, and 15 percent. For Jordan and Vietnam, results are presented with the voice-adjusted dependent variable, where declined responses are counted as positive reports. Original runs prior to the recoding are displayed in Appendix 5.

Table 10a

Jordan: Average Verbal Abuse, Adjusted for Declined Responses

VARIABLES	(1) Avg_VA	(2) Avg_VA	(3) Avg_VA	(4) Avg_VA
<i>Worker_Production_Pay</i>	-0.052*** (0.030)	-0.052*** (0.027)	-0.064*** (0.021)	-0.045** (0.070)
<i>Sup_PerformancePay</i>	0.039*** (0.001)	0.036*** (0.001)	0.035*** (0.000)	0.025*** (0.001)
<i>Female</i>		0.088*** (0.010)	0.069*** (0.010)	0.047*** (0.024)
<i>Sup_Language</i>			-0.023 (0.368)	0.010 (0.707)
<i>Late_Penalty: Modest Problem</i>			-0.142 (0.158)	-0.049 (0.582)
<i>Late_Penalty: Minor Problem</i>			-0.230*** (0.035)	-0.159** (0.099)
<i>Sup_Stress: Modest Problem</i>			0.210* (0.128)	0.168 (0.167)
<i>Sup_Stress: Minor Problem</i>			0.170 (0.207)	0.149 (0.231)
<i>Sup_Stress: Not a Problem</i>			0.012 (0.933)	-0.009 (0.946)
<i>Sup_comfort</i>				0.010** (0.061)
<i>Birthplace_Bangladesh</i>				-0.165*** (0.002)
<i>Birthplace_Sri_Lanka</i>				-0.139*** (0.006)
<i>Birthplace_Pakistan</i>				-0.058 (0.309)
<i>Birthplace_China</i>				0.055 (0.406)
<i>Birthplace_Other</i>				-0.099** (0.076)
<i>Constant</i>	0.510*** (0.000)	0.452*** (0.000)	0.517*** (0.000)	0.533*** (0.000)
Observations	817	817	716	708
R-squared	0.154	0.185	0.374	0.458

Robust pval in parentheses
 *** p<0.05, ** p<0.1, * p<0.15

The results from Jordan offer a strong confirmation of the theoretically derived relationship between firm incentive structures and verbal abuse. *Worker_Production_Pay* is statistically significant at

the 10% level and has a negative coefficient, implying that as workers are more monetarily incentivized, their probability of being subjected to verbal abuse declines. *Sup_Performance_Pay* is significant at the 1% level, and has a positive coefficient, indicating that incentivizing supervisors monetarily will predispose them to use additional measures, such as verbal abuse, to augment the productivity of workers on which their pay depends.

The coefficients on factor variables *Late_Penalty* and *Sup_Stress* can be interpreted as a relative comparison of abuse to the level predicted when the response was “serious problem.” Versions 3 and 4 from Jordan therefore indicate that as management perceives customer penalties for late deliveries as a lesser problem within a factory, the existence of verbal abuse correspondingly declines.

The coefficients on supervisor stress levels are not significant, but the effect of supervisors’ cognitive load could be reflected in the variable measuring concerns with late penalties, a likely contributor to supervisor cognitive load and stress. Lack of statistical significance in the variable *Sup_Stress* could also be a result of skewed managerial perspective, or due to the masking effects of such variables as *Late_Penalty* or *Sup_PerformancePay*.¹⁰

The coefficient for *Female* is positive and statistically significant at the 5% level, indicating that women are more likely to be victims of verbal abuse than men. As previously noted, birthplace is closely related to reports of verbal abuse, and significantly decreases an individual’s likelihood to report abusive treatment. This could be a result of cultural influences, a generalized sense of intimidation, or a lack of agency on the part of migrant workers.

Overall however, the results in Jordan provide strong support for the argument that verbal abuse is interconnected with firm incentive structures and arises when supervisors desire additional productive effort. When workers are minimally incentivized, effort and efficiency are likely to decline, prompting supervisors to supplement with verbal exhortation. Additionally, when supervisors have high-powered incentives, they have a personally vested interest in production levels, and are more likely to employ additional measures to stimulate output.

¹⁰ *Sup_Stress* and *Late_Penalty* have a positive correlation of 0.23 and *Sup_Stress* and *Sup_PerformancePay* have a positive correlation of 0.19.

Table 10b

Vietnam: Average Verbal Abuse, Adjusted for Declined Responses				
VARIABLES	(1)	(2)	(3)	(4)
	<i>Avg_VA</i>	<i>Avg_VA</i>	<i>Avg_VA</i>	<i>Avg_VA</i>
<i>Worker_Production_Pay</i>	0.005 (0.235)	0.005 (0.231)	0.003 (0.357)	0.003 (0.344)
<i>Sup_PerformancePay</i>	-0.005 (0.199)	-0.005 (0.198)	-0.003 (0.360)	-0.004 (0.271)
<i>Female</i>		0.008 (0.275)	0.005 (0.400)	0.004 (0.509)
<i>LowWageConcern</i>			0.060*** (0.000)	0.059*** (0.000)
<i>Rush_Orders: Modest Problem</i>			-0.031** (0.051)	-0.033** (0.065)
<i>Rush_Orders: Minor Problem</i>			-0.019 (0.439)	-0.016 (0.577)
<i>Rush_Orders: Not a Problem</i>			-0.039* (0.112)	-0.037 (0.225)
<i>Sup_comfort</i>			0.026*** (0.000)	0.025*** (0.000)
<i>Ind_CBA</i>				-0.008* (0.107)
<i>Sup_Stress: Modest Problem</i>				0.023 (0.326)
<i>Sup_Stress: Minor Problem</i>				0.013 (0.661)
<i>Sup_Stress: Not a Problem</i>				0.004 (0.888)
<i>Constant</i>	0.087*** (0.000)	0.080*** (0.000)	0.055*** (0.000)	0.053*** (0.016)
Observations	3,439	3,439	3,067	2,893
R-squared	0.033	0.034	0.154	0.163

Robust pval in parentheses
 *** p<0.05, ** p<0.1, * p<0.15

The analysis for Vietnam and Indonesia provide less conclusive results with regard to incentive structure interactions, likely due to country-specific data limitations. Vietnam observations lack variation in the dependent variable, with very low reports of verbal abuse. The scarcity of positive responses suggests the potential for a widespread reluctance to report abuses. Rather, one of the strongest predictors of verbal abuse is *Sup_Comfort*. The positive coefficient indicates that workers who report discomfort approaching their supervisor are also more likely to be in an environment with prevalent levels of verbal abuse.

Other interesting and relevant features of the Vietnam analysis include the high level of statistical significance on the first factor variable of *Rush_Orders*, indicating that factories with rush order deliveries reported as a “serious problem” are more likely to foster a verbally abusive environment than those in which the problem is less severe. Prior to the inclusion of supervisor stress, the third factor variable for *Rush_Orders* corresponding to “not a problem,” likewise predicts a lower level of verbal abuse.¹¹ The coefficient for *LowWageConcern* is extremely significant and positive, indicating that concern with low wages increases the likelihood of verbal abuse, as was suggested by surveyed psychological literature.

Table 10c

Indonesia: Average Verbal Abuse				
VARIABLES	(1)	(2)	(3)	(4)
	Avg_VA	Avg_VA	Avg_VA	Avg_VA
<i>Worker_Production_Pay</i>	-0.010 (0.480)	-0.010 (0.481)	0.000 (0.973)	0.001 (0.907)
<i>Sup_PerformancePay</i>	-0.013 (0.193)	-0.013 (0.185)	-0.001 (0.931)	0.001 (0.921)
<i>Female</i>		-0.041 (0.296)	-0.027 (0.441)	-0.014 (0.627)
<i>2.Rush_Orders</i>			0.084 (0.187)	0.086 (0.224)
<i>3.Rush_Orders</i>			0.023 (0.722)	0.047 (0.596)
<i>4.Rush_Orders</i>			0.178* (0.116)	0.173 (0.272)
<i>2.Sup_Stress</i>				-0.033 (0.668)
<i>3.Sup_Stress</i>				-0.065 (0.504)
<i>4.Sup_Stress</i>				-0.017 (0.903)
<i>Promotion_Bias</i>				0.027** (0.073)
<i>Sup_comfort</i>			0.056*** (0.003)	0.069*** (0.001)
<i>Constant</i>	0.836*** (0.000)	0.873*** (0.000)	0.622*** (0.000)	0.597*** (0.000)
Observations	1,164	1,164	753	577
R-squared	0.072	0.076	0.162	0.193

Robust pval in parentheses
 *** p<0.05, ** p<0.1, * p<0.15

¹¹ *Rush_Orders* and *Sup_Stress* have a positive correlation of 0.42.

The Indonesian dataset is greatly limited by a very low response rate for the key dependent variable. Observations also steeply attenuate across variants due to missing responses for many of the dependent variables, resulting in a heavily diminished dataset.¹² Additionally, Indonesia has the reverse problem of Vietnam with regard to reporting reluctance, with nearly 80 percent of respondents citing verbal abuse as a concern.¹³ The high quantity of grievance reports suggests either a widespread dissatisfaction among workers, or highly widespread verbal abuse across factories. Minimal variation in the dependent variable coupled with low variation in worker pay schemes (72 percent are paid exclusively by the hour) and large data loss due to missing observations combine to make the analysis significantly less robust.

Similar to Vietnam, the variables that persist in significance for their effects on verbal abuse are measures of bias and supervisory comfort levels. Reported discomfort with the respondent's supervisor has a positive relationship with verbal abuse, significant at the 1% level, and *Promotion_Bias* is positively related to verbal abuse, significant at the 10% level.

Overall, the preceding analysis of stage 1 provides persuasive evidence in support of the psychology literature relating to verbal abuse. Results indicate that stress levels, organizational chaos, biases and stereotyping all contribute positively to the likelihood and persistence of workplace verbal abuse. Vietnam results additionally demonstrate that low wages contribute positively to the occurrence of verbal abuse. This finding is corroborated by including *LowWageConcern* in the final Jordan and Indonesia regressions, and results are displayed in Appendix 6. Although observation counts drop drastically, the variable is strongly statistically significant (below the 5% level for each) and positive in both cases, indicating the key relevancy of low wages in contributing to verbal abuse.

Additionally, results from Jordan offer persuasive evidence in support of the theoretical model, demonstrating that firm incentive structures also play a significant role in encouraging supervisors to apply verbal exhortation as a supplementary motivational mechanism.

The subsequent steps of the analysis aim to obtain an understanding of the effects of verbal abuse on factory productivity and costs, with the ultimate goal of determining whether or not verbal abuse could be a profit-maximizing strategy.

¹² Of the original 2,257 observations, only 577 remain by the final run of the regression.

¹³ Of total workers surveyed, only 50% responded to the question regarding verbal abuse, 80% of whom reported a positive concern.

5.2: Wages Regression Results

The dependent variable log of hourly pay measured in US dollars is regressed on the key independent variable verbal abuse, as well as measures of individual capital and demographic characteristics (Equation 18). Clustered standard errors are used by factory ID numbers to control for factory fixed effects. Table 11a shows regression results from Jordan using within-factory averages to control for potential voicing concern and low observation count. Results from Jordan using individual reports of verbal abuse can be found in Appendix 7. Table 11b reports results for Indonesia.¹⁴ Vietnam analysis was less conclusive, with low levels of abuse reports seeming to impede statistical significance. However, the directional effects of verbal abuse are similar to those observed in the Jordan and Indonesia analysis, and the full Vietnam regression analysis results can be found in Appendix 7.

Beginning with results from Jordan, verbal abuse is a positive and significant predictor of wages, increasing wages by an estimated 29 cents. Verbal abuse is significant at the 1% level for average reports, and at the 5% level for individual reporting (see Appendix 7).¹⁵

The coefficient on *Female* is negative and statistically significant at the 1% level, indicating that being a woman meaningfully detracts from one's earning potential. *Years_at_factory* has a positive coefficient, implying increasing wages as employment tenure accumulates, however statistical significance diminishes as additional control variables are added to the analysis. *Promoted* has a positive coefficient and is highly statistically significant, implying that an individual's wages grow with the number of promotions he or she is granted. *Days_Training* also has a positive coefficient and is significant at the 5% level, indicating that the length of time a factory commits to training new employees results in higher earning potential.

Education dummy variables are compared to the omitted case of "no formal education," Long-term technical training is associated with the highest predicted wages followed by professional secondary school, junior college diploma, and upper secondary school. Lower educational tiers for the most part are not statistically significant.

Coefficients on contract dummy variables are measured in relation to a "training" contract, and all significant contract types are associated with lower hourly rates. Workers with a "Home Work" contract are predicted to have the lowest earnings, followed by "Subcontract," "Probationary," "Fixed time," and "Unlimited Time." Coefficients for temporary and apprentice contracts are not statistically significant.

¹⁴ Note: Controls for job type and years are included in the analyses, but are omitted from Tables 6.2a, 6.2b and 6.2c for purposes of space. Relevant job types are discussed below.

¹⁵ Observations for individual reporting are limited, so the results are more easily analyzed using average reports.

Job type coefficients are measured relative to the omitted group of sewers, and the only titles that are statistically significant are packers and cutters. Packers are predicted to earn higher wages than sewers and cutters are predicted to earn less.

Table 11a

Jordan: Hourly Wages, using Factory Averages for Verbal Abuse			
VARIABLES	(1)	(2)	(3)
	<i>logHourlyPayUS</i>	<i>logHourlyPayUS</i>	<i>logHourlyPayUS</i>
	<i>D</i>	<i>D</i>	<i>D</i>
<i>Avg_VA</i>	0.175*	0.256***	0.291***
	(0.112)	(0.011)	(0.008)
<i>Female</i>		-0.099**	-0.129***
		(0.073)	(0.011)
<i>Education: Primary School</i>		0.099	0.077
		(0.461)	(0.606)
<i>Education: Lower Secondary School</i>		0.157	0.151
		(0.187)	(0.209)
<i>Education: Upper Secondary School</i>		0.179**	0.160*
		(0.076)	(0.139)
<i>Education: Short-Term Technical Training</i>		-0.062	-0.050
		(0.634)	(0.754)
<i>Education: Long-Term Technical Training</i>		0.696***	0.724***
		(0.013)	(0.006)
<i>Education: Professional Secondary School</i>		0.203**	0.216**
		(0.067)	(0.079)
<i>Education: Junior College Diploma</i>		0.243***	0.213***
		(0.013)	(0.043)
<i>Education: Bachelor's Degree</i>		-0.013	-0.006
		(0.962)	(0.984)
<i>Years_atfactory_Adj</i>		0.015*	0.019
		(0.122)	(0.150)
<i>Promoted</i>		0.087***	0.090***
		(0.008)	(0.011)
<i>Days_Training</i>		0.001***	0.001***
		(0.041)	(0.031)
<i>Contract_Type: Apprentice</i>			-0.143
			(0.287)
<i>Contract_Type: Home Work</i>			-0.432***
			(0.018)
<i>Contract_Type: Subcontract</i>			-0.330***
			(0.005)
<i>Contract_Type: Bonded</i>			0.209
			(0.488)
<i>Contract_Type: Probationary</i>			-0.295**
			(0.053)
<i>Contract_Type: Temporary</i>			-0.181
			(0.319)
<i>Contract_Type: Fixed Time</i>			-0.205***
			(0.028)
<i>Contract_Type: Unlimited Time</i>			-0.155**

<i>Constant</i>	-0.148** (0.051)	-0.362** (0.058)	(0.093) -0.183 (0.343)
Observations	1,055	830	771
R-squared	0.028	0.090	0.123

Robust pval in parentheses

*** p<0.05, ** p<0.1, * p<0.15

An important note regarding the Jordan wage analysis for verbal abuse is the potential for omitted variable bias due to the exclusion of birthplace from the analysis. A worker's decision to report on verbal abuse is heavily influenced by whether he or she is a migrant worker, and foreign-born workers also tend to earn slightly lower wages. This bias is controlled for somewhat by including variables for different contract types and job descriptions. Variables describing birthplace are so closely related to reports of verbal abuse that their inclusion overshadows the key independent variable, and they are therefore excluded from the regression analysis.

For Indonesia, due to high positive reports of verbal abuse, analysis is performed using individual reports of verbal abuse as the dependent variable, rather than factory averages. Verbal abuse positively increases predicted wages by an estimated 7 cents, and the coefficient is significant at the 10% level. This result confirms the finding in Jordan that workers who are verbally abused require a compensating differential to counterbalance the disutility incurred by being verbally abused.

A surprisingly few number of other variables are statistically significant for the Indonesia regression, possibly due to the large reduction in observation count. University-level education relates positively to hourly wages and is significant at the 1% level. Receiving basic skills training also increases a worker's expected earnings by approximately 6 cents, although statistical significance drops slightly after the addition of job type control variables. In version 3 of the analysis, subcontracted workers are predicted to earn lower wages than workers operating on a training contract, and in both versions 3 and 4, unlimited time contracts have negative, statistically significant coefficients. Cutter is the only job type to register statistical significance, and is negative in comparison to sewers, statistically significant at the 5% level.

Table 11b

Indonesia: Hourly Wages				
VARIABLES	(1)	(2)	(3)	(4)
	<i>logHourlyPayUS</i>	<i>logHourlyPayUS</i>	<i>logHourlyPayUS</i>	<i>logHourlyPayUS</i>
	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>
<i>Verbalabuse</i>	0.070** (0.063)	0.067** (0.077)	0.076** (0.091)	0.077** (0.092)
<i>Female</i>		0.045 (0.559)	0.047 (0.536)	0.019 (0.812)
<i>Education: Junior High</i>		0.038 (0.501)	0.054 (0.368)	0.063 (0.293)
<i>Education: High School</i>		0.049 (0.404)	0.065 (0.332)	0.096 (0.200)
<i>Education: University</i>		0.361*** (0.000)	0.349*** (0.000)	0.414*** (0.002)
<i>Years_atfactory_Adj</i>			-0.002 (0.780)	-0.001 (0.883)
<i>BasicSkillsTraining</i>			0.081*** (0.041)	0.064* (0.109)
<i>Contract_Type: Apprentice</i>			-0.184 (0.358)	-0.162 (0.346)
<i>Contract_Type: Home Work</i>			-0.327 (0.175)	-0.294 (0.279)
<i>Contract_Type: Subcontract</i>			-0.108* (0.137)	-0.093 (0.231)
<i>Contract_Type: Bonded</i>			-0.016 (0.841)	-0.028 (0.746)
<i>Contract_Type: Probationary</i>			-0.116 (0.373)	-0.111 (0.401)
<i>Contract_Type: Temporary</i>			-0.036 (0.747)	-0.044 (0.704)
<i>Contract_Type: Fixed Time</i>			-0.084 (0.272)	-0.075 (0.348)
<i>Contract_Type: Unlimited Time</i>			-0.154*** (0.032)	-0.146** (0.050)
<i>Constant</i>	-0.693*** (0.000)	-0.776*** (0.000)	-0.713*** (0.000)	-0.699*** (0.000)
Observations	801	801	665	665
R-squared	0.005	0.009	0.025	0.044

Robust pval in parentheses

*** p<0.05, ** p<0.1, * p<0.15

In Vietnam, the minimal positive reports of verbal abuse seem to detract from statistical significance, although the estimated coefficient for verbal abuse is positive, and very similar in magnitude to that found in the Jordan analysis. All other variables behave in the manner that would be

expected based on human capital theory. Measures of individual human capital, including education, years worked at the factory, and number of promotions all meaningfully increase an individual's predicted earnings. Job types and contract types also affect wages with statistical significance, as does gender. Expected earnings rise with extreme statistical significance every year, reflecting the increasing minimum wage laws in Vietnam.

In sum, although the precise relationship between wages and verbal abuse is difficult to decipher, the preceding analysis supports the existence of a hypothesized compensating differential that requires firms to pay higher wages to appease abused workers. Results also discredit the hypothesis that verbal abuse greatly erodes a worker's sense of agency, allowing firms to pay lower wages. Overall however, the analysis implies that firms are not using verbal abuse as a profitable intimidation tactic, or are doing so mistakenly. Results demonstrate that verbal abuse is costly to firms in the form of additional wage expenses. To complete the picture of verbal abuse in its profit interactions, the next stage of analysis involves investigating the role verbal exhortation plays in motivating workers, its impact on productivity, output, and revenues.

5.3: Productivity Regression Results

A Two Stage Least Squared regression is performed in which the dependent variable *Time_to_Target* is regressed on instrumented measures of verbal abuse as the key independent variable. The instrumental variables *Sup_Comfort* and *Bullying_Compliance* are used to control for endogeneity in the key independent variable due to correlation between the error term for a worker's productivity and the existence of verbal abuse. Data restrictions limit the analysis exclusively to Vietnam. Clustered standard errors are used by factory ID to control for factory fixed effects. Tables 12a and 12b display the regression results, using time taken to reach a production target on Fridays and Mondays as the respective dependent variables, and individual reports of verbal abuse as the key independent variable of interest. Reporting reluctance was accounted for by coding declined responses as positive reports of abuse in both cases. Additional regressions performed prior to the voice recoding can be found in Appendix 8, and an equivalent analysis performed using factory-level averages of verbal abuse can be found in Appendix 9. Asterisks correspond to significance levels of 5, 10, and 15 percent.

Individual accounts of verbal abuse are used to allow for a closer link between the abuse perceived by a given individual as it relates to his or her own productive efficiency. Note that as previously discussed, counts of positive reports in Vietnam are very low, possibly reflecting instances of

underreporting. If cases of verbal abuse are greater in reality than those reported, statistical significance would likely be higher than indicated by the presented analysis.

Table 12a

Vietnam: Time to Production Target (Friday), with Individual Reports and Voice Adjusted

VARIABLES	(1) <i>Time_to_Target</i> <i>F</i>	(2) <i>Time_to_Target</i> <i>F</i>	(3) <i>Time_to_Target</i> <i>F</i>	(4) <i>Time_to_Target</i> <i>F</i>
<i>Verbalabuse</i>	0.822* (0.111)	0.885** (0.092)	0.859* (0.114)	0.933* (0.119)
<i>Age</i>	-0.007 (0.338)	-0.008 (0.294)	-0.009 (0.275)	-0.015** (0.073)
<i>Female</i>	-0.075 (0.710)	-0.097 (0.616)	-0.095 (0.624)	-0.088 (0.674)
<i>Education: Primary School</i>		-1.008 (0.191)	-0.870 (0.272)	-1.058 (0.300)
<i>Education: Lower Secondary School</i>		-0.937 (0.229)	-0.871 (0.277)	-1.038 (0.316)
<i>Education: Upper Secondary School</i>		-1.041 (0.188)	-0.936 (0.251)	-1.155 (0.273)
<i>Education: Short-Term Technical Training</i>		-0.920 (0.388)	-0.737 (0.498)	-0.972 (0.448)
<i>Education: Long-Term Technical Training</i>		-1.228* (0.135)	-1.160 (0.166)	-1.249 (0.229)
<i>Education: Professional Secondary School</i>		-1.760*** (0.035)	-1.683*** (0.048)	-1.756* (0.102)
<i>Education: Junior College Diploma</i>		-1.091 (0.175)	-1.163 (0.159)	-1.296 (0.213)
<i>Education: Bachelor's Degree</i>		-1.909** (0.072)	-1.742* (0.108)	-2.304** (0.085)
<i>Years_atfactory</i>		0.003 (0.863)	0.001 (0.945)	-0.000 (0.982)
<i>Weeks_Training</i>			-0.009 (0.595)	-0.014 (0.355)
<i>BasicSkillsTraining</i>			-0.183* (0.109)	-0.229** (0.051)
<i>Ind_CBA</i>				0.082 (0.654)
<i>Rush_Orders</i>				-0.019 (0.816)
<i>Constant</i>	10.223*** (0.000)	11.267*** (0.000)	11.364*** (0.000)	11.771*** (0.000)
Observations	1,233	1,232	1,084	971
R-squared		0.003	0.017	0.021

Robust pval in parentheses

*** p<0.05, ** p<0.1, * p<0.15

Table 12b**Vietnam: Time to Production Target (Monday), with Individual Reports and Voice Adjusted**

VARIABLES	(1)	(2)	(3)	(4)
	<i>Time_to_TargetM</i>	<i>Time_to_TargetM</i>	<i>Time_to_TargetM</i>	<i>Time_to_TargetM</i>
<i>Verbalabuse</i>	0.483 (0.286)	0.534 (0.255)	0.499 (0.283)	0.925** (0.085)
<i>Age</i>	0.001 (0.892)	0.000 (0.955)	0.003 (0.762)	-0.001 (0.928)
<i>Female</i>	0.025 (0.874)	-0.015 (0.921)	-0.051 (0.751)	-0.060 (0.717)
<i>Education: Primary School</i>		-0.007 (0.987)	0.169 (0.706)	0.271 (0.580)
<i>Education: Lower Secondary School</i>		0.014 (0.973)	0.136 (0.749)	0.203 (0.673)
<i>Education: Upper Secondary School</i>		-0.114 (0.785)	0.064 (0.883)	0.025 (0.961)
<i>Education: Short-Term Technical Training</i>		-0.508 (0.377)	-0.230 (0.701)	-0.415 (0.482)
<i>Education: Long-Term Technical Training</i>		0.011 (0.987)	0.152 (0.830)	0.406 (0.554)
<i>Education: Professional Secondary School</i>		-0.912**	-0.731*	-0.732
<i>Education: Junior College Diploma</i>		(0.068) 0.163 (0.769)	(0.146) 0.204 (0.751)	(0.184) 0.261 (0.712)
<i>Education: Bachelor's Degree</i>		-1.798*** (0.000)	-1.507*** (0.007)	-1.645*** (0.013)
<i>Years_atfactory</i>		0.005 (0.760)	0.005 (0.773)	0.000 (0.986)
<i>Weeks_Training</i>			-0.022* (0.128)	-0.028*** (0.044)
<i>BasicSkillsTraining</i>			-0.177** (0.083)	-0.181** (0.090)
<i>Ind_CBA</i>				0.329* (0.147)
<i>Rush_Orders</i>				0.020 (0.759)
<i>Constant</i>	9.884*** (0.000)	9.974*** (0.000)	9.978*** (0.000)	9.755*** (0.000)
Observations	1,265	1,264	1,106	984
R-squared		0.013	0.025	0.024

Robust pval in parentheses

*** p<0.05, ** p<0.1, * p<0.15

Notably, verbal abuse increases the predicted time an individual requires for completion of his or her daily production by approximately one hour, significant at the 10% level in both cases. A positive coefficient implies that individuals subjected to verbal abuse are less efficient at completing a given level of production than they are if they are not subjected to verbal exhortation. This finding runs contrary to the proposal that verbal abuse could be an effective motivational tool to substitute for incentivizing wages. Rather, verbal abuse has the opposite effect, diminishing a worker's productive efficiency.

Regression results of the preceding productivity analyses prior to the inclusion of instrumental estimation can be found in Appendix 10. The coefficients on the primary independent variables are positive, and have higher associated significance levels than those in the Two Stage Least Squares version. The predicted coefficients for verbal abuse are lower in magnitude than their instrumented counterparts. Higher coefficients in the 2SLS version are likely due to a tighter distribution for the instrumented variable that arises from the predicted measure taking values between 0 and 1 rather than the strict binary values of the raw data.

Higher education levels, specifically professional secondary school, junior college diploma and a bachelors degree, are all associated with faster time to production target by one or two hours (negative coefficients). Receiving basic skills training also makes one more likely to have a shorter completion time in both cases (by an estimated .18 hours). Additionally, in the Monday runs, length of training time also increases productive efficiency, significant at the 5% level.

There are several important notes to bear in mind with regard to the preceding efficiency analysis. The first is that the sample represents a severely reduced dataset due to high counts of missing observations for the key dependent variables. Only 1,581 and 1,543 observations remain for Monday and Friday production target completion times respectively, out of an original 5,441 Vietnamese survey respondents. The low response rate for other independent variables further attenuates the analyzed pool.

The second qualification to the above analysis is that the production time measure does not take into account variation in production targets. If data had been available, time to production target would be adjusted according to magnitude of target quantity, but the dataset unfortunately did not include a complete enough measure. The preceding analysis instead assumes that targets are randomly distributed, and the primary analysis is performed using individual reports of verbal abuse to allow for variation within a single factory, assuming targets are generally similar within a given factory

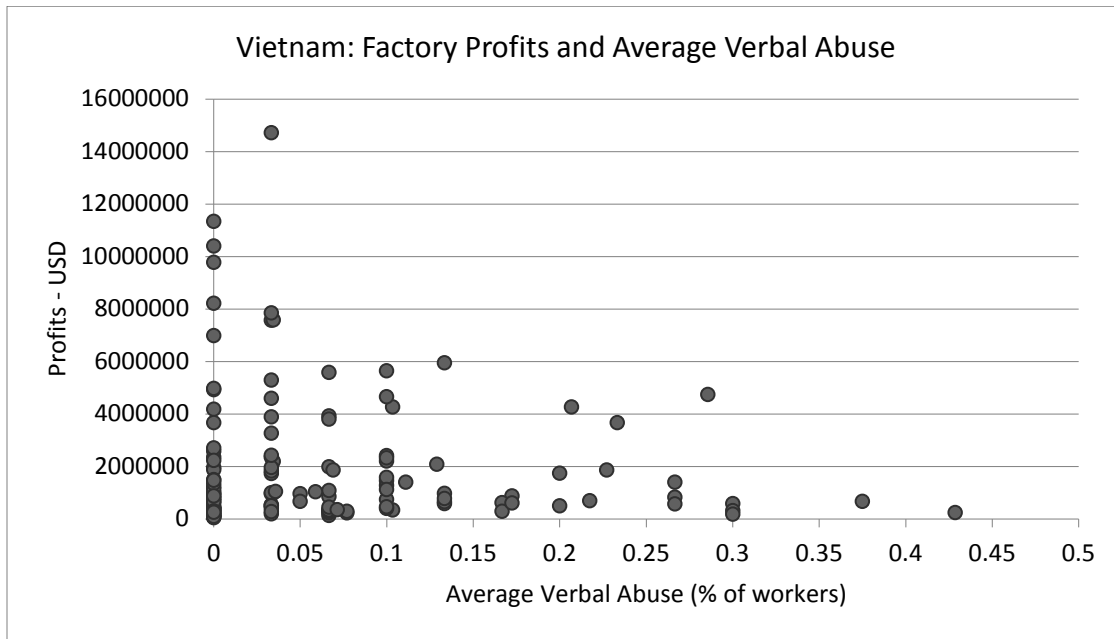
Overall however, results provide preliminary support for the conclusion that verbal abuse impedes individual efficiency, thus decreasing individual output and hindering firm production.

5.4: Preliminary Profit Analysis

The current size of the datasets unfortunately precludes a full factory-level regression analysis of the impact of verbal abuse on profits. However, a preliminary examination of the basic relationship between the two seems indicative of a negative link. Chart 6 shows a scatter plot of factory profits and corresponding factory-wide averages of verbal abuse.

Simply observing a negative trend between verbal abuse and profits does not necessarily imply a causal relationship as it is likely the case that factories suffering from low production levels may possess many characteristics that predispose a factory to verbal abuse, rather than the reverse causal relationship. However, the individual-level analysis demonstrating an increase in costs (in the form of worker wages) and decrease in revenues (in the form of diminished worker productivity) coupled with this trend serves as a solid foundation for an argument against workplace verbal abuse.

Chart 6



5.5: Discussion

The preceding analysis began with an examination of the determinants of workplace verbal abuse. Results confirm the previous literature that psychological factors within a firm contribute positively to fostering an environment primed for verbal abuse. Specifically, measures of stress and cognitive load, power, and stereotyping all predict higher levels of verbal abuse.

Additionally, the Jordan analysis offers strong verification of the theoretically modeled relationship between incentive structures and verbal abuse. This finding further substantiates the hypothesized role of verbal abuse as a motivational mechanism employed by supervisors to induce additional output on the part of underperforming workers. If workers are paid by the piece, they are less likely to be personally invested in the quantity of pieces produced, thereby lowering output, and inducing supervisors to instead resort to verbally abusive techniques. Alternately, if supervisors are monetarily incentivized according to line production, their personal desire for pecuniary reward leads them to use a familiar means of motivation to increase production levels on the part of the workers they oversee.

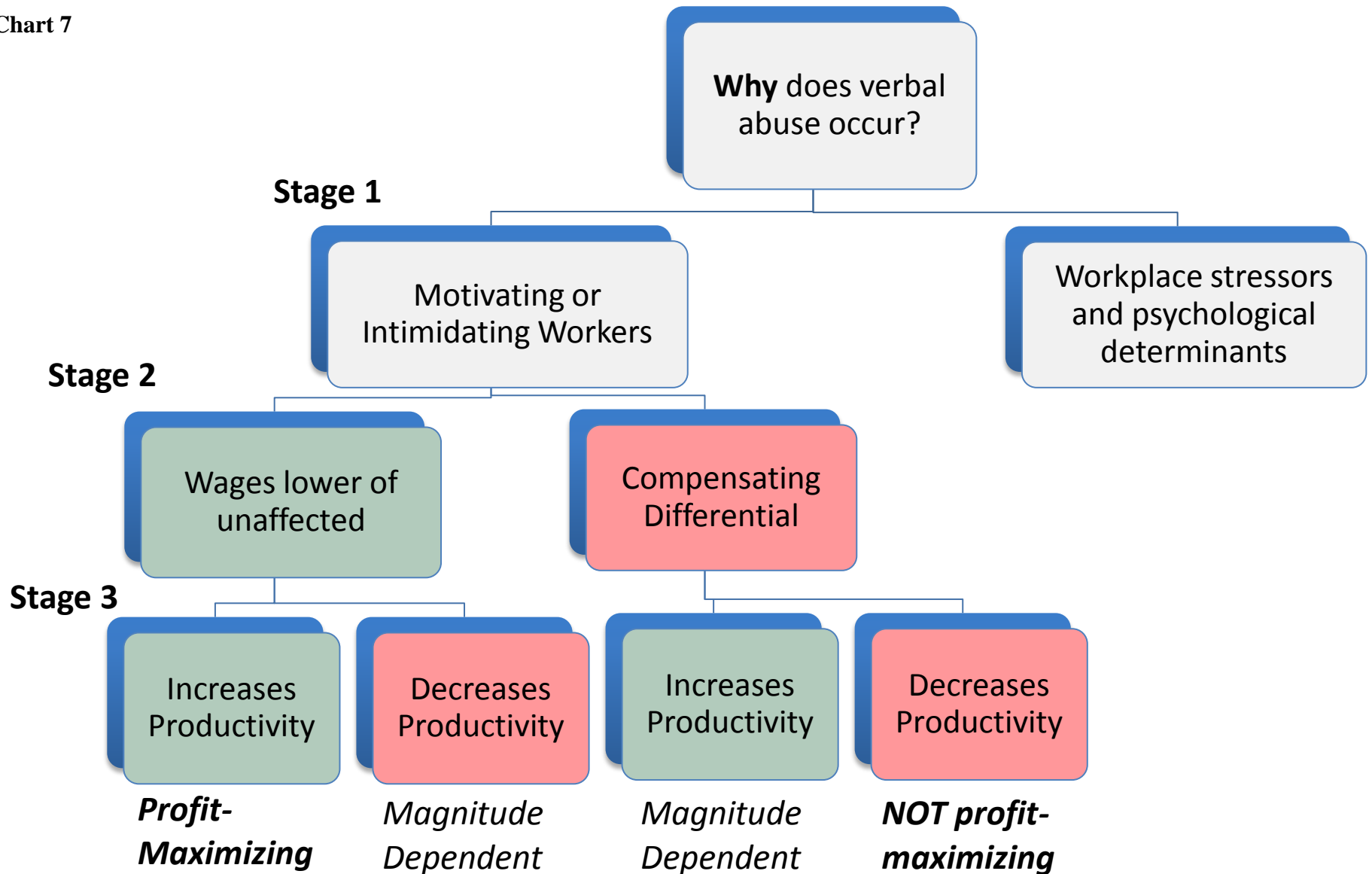
The latter portion of the analysis probed the relationship between verbal abuse and the costs and benefits to firms. Analysis of worker wages as they relate to verbal abuse demonstrates a strong link between worker reports of verbal abuse and higher hourly wages. Higher payment to victims suggests a positive compensating differential, which would represent a loss to firms.

An analysis of worker productivity as it relates to verbal abuse offers preliminary evidence in support of the proposition that verbal exhortation actually diminishes individual efficiency, thereby lowering quantity produced as well as revenues. This finding, coupled with the stage 1 analysis demonstrating the integral role of verbal abuse in firm incentive structures indicates that verbal abuse has the opposite of its intended motivational effect.

Finally, initial examinations of the relationship between firm profits and verbal abuse levels indicate a negative link. Although the causality has yet to be statistically established, this observed relationship in tandem with the preceding analyses provides a convincing foundation toward the conclusion that verbal abuse is definitively not profit-maximizing.

This sequence of analysis, culminating in the conclusion discrediting the potential for a business case, is depicted below in Chart 7:

Chart 7



5.6: Next Steps

This paper offers an analytical basis for a business case against verbal abuse. Future steps toward a deeper analysis of verbal abuse as an economic operator in the workplace setting would include the following:

- 1) An analysis of verbal abuse on a more varied range of pay schemes to allow for a clearer understanding of the causal link between incentive structures and verbal abuse. Running separated regressions for hourly rate and piece rate workers to allow for a coefficient comparison in the wages and productivity regression (hypothesized in the theoretical model).
- 2) Fine-tuning the variable specifications for psychological determinants of verbal abuse to allow for a subtler, multifaceted understanding of how each component operates independently and in interaction with one another.
- 3) Parceling out the individual operands in the wage regression to determine the portion of wage differential that comes from disutility compensation versus a loss of agency.
- 4) Performing productivity analysis on additional countries, and executing robustness checks by testing alternate measures of productivity and using a range of instrumental variables.
- 5) Performing multiple regression analysis of firm profits on verbal abuse and controlling for error term correlation to ascertain the causal relationship rather than mere correlation.

SECTION 6: CONCLUSION

The 2013 Better Work Impact Brief for Vietnam notes that better working conditions are statistically correlated with higher firm profits. Specifically, the report cites that a one percent increase in worker perceptions of verbal and physical abuse and sexual harassment correlates to a 1.14 percent increase in profits (Impact Brief: Better Work Vietnam 2013). However, this negative relationship does not by itself imply a causal link between verbal abuse and firm profitability. It could be the case that low productivity is itself the basis for supervisors' use of verbal abuse, and that the resulting exhortation serves to incite a productive drive on the part of underperforming workers. Firms might therefore perceive verbal abuse as a necessary and effective tool for motivating workers who are performing inefficiently and could be actively tolerant of the abusive techniques should they perceive them to be profit-maximizing.

However, the preceding findings effectively discredit the possibility that verbal abuse is a profit-maximizing strategy for firms. Not only does a negative working environment lay the foundation for

verbal abuse, but verbal abuse also detracts from firm profitability both by eroding individual worker efficiency and generating a compensating differential that requires higher wages paid to victims. The fact that verbal abuse continues to persist at pervasive rates indicates either mistaken perceptions on the part of firms or a lack of organizational awareness.

Profit-maximizing firms should prioritize the prevention of verbal abuse of workers. The Workplace Bullying Institute emphasizes the positive reward cycle of bullying, whereby unpunished bullies adopt the invincible perception that they can carry on their abusive treatment unchecked forever. Suggestions to reduce levels of workplace bullying include punishments of perpetrators, as well as a shift in factory culture from tolerance to discipline (WBI - The Workplace Bullying Institute, 2014). Mitigating the psychological contributors such as stress levels, power differentials and stereotyping would also cut back on abuse levels.

Additionally, results demonstrate that incentive structures also play an integral role in encouraging supervisors to use verbal abuse, both in the absence of monetary incentives for workers as well as through supervisor pay structures that are overly dependent on line production. Management could therefore reduce verbal abuse levels by monetarily incentivizing workers based on individual production as well as ensuring that supervisor salary does not depend exclusively on the physical output of the workers he or she oversees. Alternately, instructing supervisors on positive motivational strategies rather than verbal exhortation would ensure that productive efforts continued while removing the detrimental emotional and profitability impacts of verbal abuse.

In short, there is no business case for verbal abuse. Rather, the profit-maximizing strategy would be an effective and sustained program toward alleviating and monitoring factory-wide verbal abuse.

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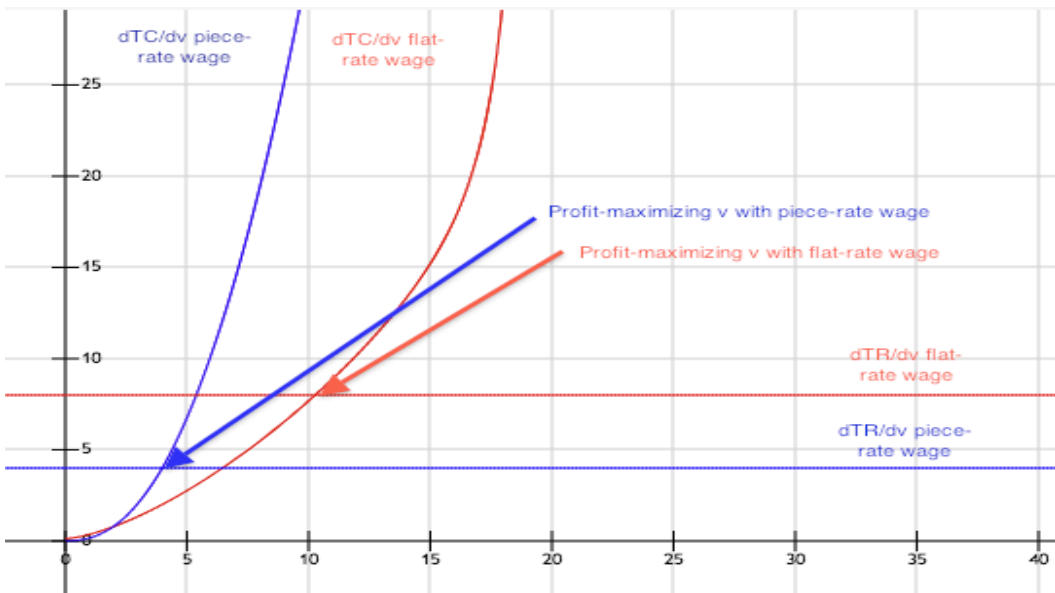
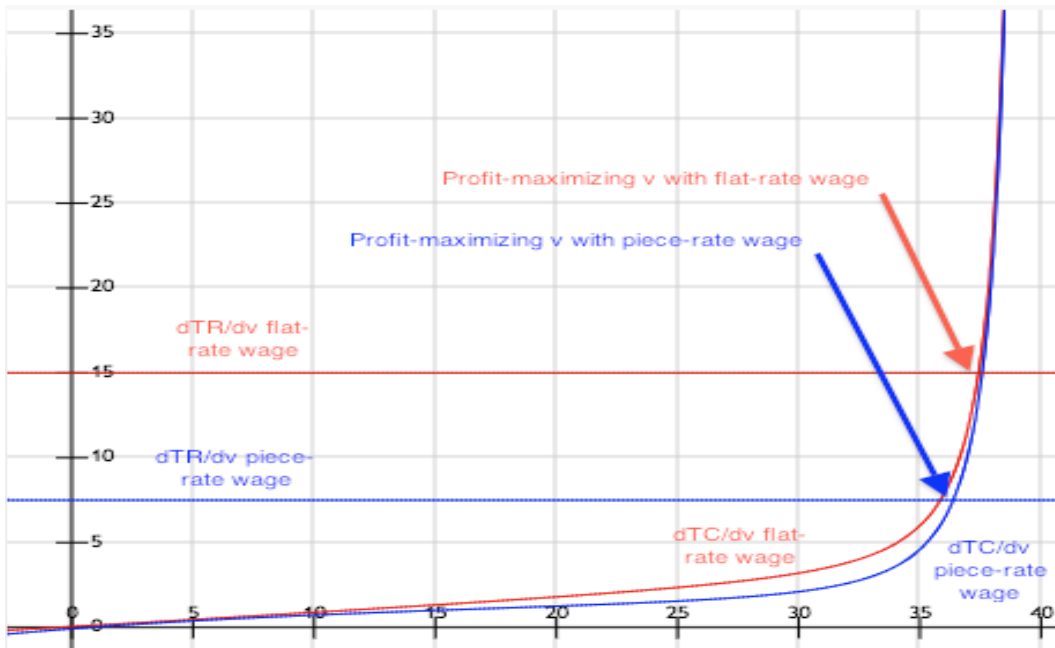
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APPENDIX 1



APPENDIX 2

Index of all variables used in analysis

Variable Name	Survey Question Wording	Range of Possible Answers	Respondent	Notes
<i>Avg_VA</i>	"Is verbal abuse such as yelling or vulgar language a concern for workers in your factory?"	1: No, not a concern 2: Yes, discussed with co-workers 3: Yes, discussed with supervisor or manager 4: Yes, discussed with the trade union representative 5: Yes, considered quitting 6: Yes, threatened a strike 7: Yes, caused a strike -7: Not asked -8: Do not know -9: Do not want to answer	Worker	Variable is first coded as a dummy in the same manner as Verbalabuse. Observations are then averaged across workers within a single factory to give a measure of the perceived likelihood any given worker would have of being verbally abused. Partially accounts for reluctance to report abuse.
<i>BasicSkillsTraining</i> (Indonesia and Vietnam)	"Did you receive training on basic skills when you first started working in this factory?"	0: No 1: Yes	Worker	
<i>Birthplace</i>	"Where were you born?"	1: Jordan 2: Bangladesh 3: Sri Lanka 4: Pakistan 5: China 6: Other	Worker	
<i>Bullying_Compliance</i>	"Have any workers been bullied, harassed, or subjected to humiliating treatment?"	0: No 1: Yes	Compliance Data	
<i>Days_Training</i> (Jordan)	"How much time is spent on basic skills training for a typical new employee?"	0: Less than 10 minutes 1: 10 to 30 minutes 2: 30 to 60 minutes 3: 1 to 2 hours 4: 3 to 4 hours 5: 5 to 8 hours 6: 1 to 3 days 7: 4 to 6 days 8: 1 to 2 weeks 9: 3 to 4 weeks 10: 1 to 2 months 11: 3 to 4 months 12: 5 to 6 months 13: More than 6 months	Worker	Variable was recoded such that all responses were converted to units of days and as the median value of the selected range. E.g. if a worker responded "6" (1 to 3 days), the variable was coded as "2."
<i>Education</i> (Indonesia)	"What is your highest level of education?"	1: no formal education 2: Playground 3: Elementary 4: Junior High 5: High School 6: University	Worker	
<i>Education</i> (Jordan and Vietnam)	"What is your highest level of education?"	1: no formal education 2: primary school 3: lower secondary school 4: upper secondary school 5: short-term technical training 6: long-term technical training 7: professional secondary school 8: junior college diploma 9: bachelor's degree	Worker	
<i>Female</i>	"Are you Female or Male?"	1: Female 2: Male	Worker	Variable is coded such that 0 corresponds to male respondents and 1 corresponds to female respondents
<i>HourlyPayUSD</i> (calculated from the following survey questions)				
<i>-LastPay</i>	"How much money did you receive the last time you were paid?"	Monetary entry reported in the national currency of the respondent	Worker	
<i>-PayPeriod</i>	"How often are you paid"	1: Once each week 2: Once every two weeks 3: Once each month 4: Once every two months 5: I do not get paid regularly 6: I will get paid when I return home	Worker	Respondents who answered "Once every two months," "I do not get paid regularly" or "I will get paid when I return home" were omitted from the analysis
<i>-TotalHours</i> (calculated from the following survey questions)				
<i>-DaysWorked</i>	"What days do you usually work in your factory?"	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday Sunday	Worker	
<i>-HoursStart</i>	"What time do you usually being work on [Sunday]"	Time value in increments of half hours	Worker	
<i>-HoursEnd</i>	"What time do you usually end work on [Sunday]"	Time value in increments of half hours	Worker	

<i>Ind_CBA</i>	"Are you represented by a collective bargaining agreement?"	1: Yes 2: No	Worker	Variable is recoded such that it is a standard dummy, whereby 0 corresponds to "no" and 1 corresponds to "yes." Variable only used in Jordan regressions
<i>Late_Penalty</i>	"What are the biggest production management problems that are obstacles to your business success? Please rate each issue. Customer penalties for late delivery"	1: Serious Problem 2: Modest Problem 3: Minor Problem 4: Not a Problem	General Manager	Vairable is regressed as a factor variable to allow differences in multiple choice responses to correspond to different statistical implications. Avriable only used in Jordan regressions
<i>LowWageConcern</i>	"Are low wages a concern for workers in this factory?"	1: No, not a concern 2: Yes, discussed with co-workers 3: Yes, discussed with supervisor or manager 4: Yes, discussed with the trade union representative 5: Yes, considered quitting 6: Yes, threatened a strike 7: Yes, caused a strike -7: Not asked -8: Do not know -9: Do not want to answer	Worker	Variable coded as a dummy, with 0 being a response denying any concern and 1 being a positive concern response (2 through 7). In some secondary runs, responses of 8 and -9 are coded as positive accounts of verbal abuse, with the assumption that a decision not to respond indicates a reluctance to report abusive treatment.
<i>Promoted</i>	"Have you ever been promoted since you entered the factory?"	1: Once 2: Twice 3: More than twice 4: No	Worker	Responses of 4 were recoded as 0, so that responses corresponded to the number of promotions awarded to a given individual.
<i>Promotion_Bias</i>	"Do you face any barriers to being promoted?" Check all that apply. Option 4: Ethnic Minority	0: No 1: Yes	Worker	Variable is only used in Indonesia regressions
<i>Rush_Orders</i>	"What are the biggest production management problems that are obstacles to your business success? Please rate each issue. Too many rush orders"	1: Serious Problem 2: Modest Problem 3: Minor Problem 4: Not a Problem	General Manager	Vairable is regressed as a factor variable to allow differences in multiple choice responses to correspond to different statistical implications
<i>Sewers_per_Sup</i>	"On average, how many workers report to a single supervisor in the sewing department?"	Numerical entry	Industrial Engineer	
<i>Sup_Comfort</i>	"If you were having a problem at your factory, how comfortable would you feel seeking help from your supervisor?"	1: Very comfortable 2: Comfortable 3: Uncomfortable 4: Very uncomfortable 5: Not comfortable at all	Worker	
<i>Sup_Language</i>	"Does your supervisor speak your language?"	1: Yes 2: No	Worker	Variable is recoded such that it is a standard dummy, whereby 0 corresponds to "no" and 1 corresponds to "yes." Variable only used in Jordan regressions
<i>Sup_PerformancePay</i>	"What percentage of a typical supervisor's pay is based on the performance of the workers he or she supervises?"	1: None 2: Less than 10 percent 3: 10 to 20 percent 4: 20 to 30 percent 5: 30 to 40 percent 6: 40 to 50 percent 7: 50 to 60 percent 8: 60 to 70 percent 9: 70 to 80 percent 10: 80 to 90 percent 11: A supervisor's pay depends only on line production	Human Resources Manager	
<i>Sup_Stress</i>	"What are the biggest production management problems that are obstacles to your business success? Please rate each issue. Stress level of supervisors"	1: Serious Problem 2: Modest Problem 3: Minor Problem 4: Not a Problem	General Manager	Vairable is regressed as a factor variable to allow differences in multiple choice responses to correspond to different statistical implications
<i>Time_to_Target</i> (Vietnam, calculated from the following survey questions)				
- <i>FinishTargetTime</i>	"What time do you usually finish your production target on [Monday]?"	Time value in increments of half hours	Worker	
- <i>HoursStart</i>	"What time do you usually begin work on [Monday]?"	Time value in increments of half hours	Worker	
<i>Verbalabuse</i>	"Is verbal abuse such as yelling or vulgar language a concern for workers in your factory?"	1: No, not a concern 2: Yes, discussed with co-workers 3: Yes, discussed with supervisor or manager 4: Yes, discussed with the trade union representative 5: Yes, considered quitting 6: Yes, threatened a strike 7: Yes, caused a strike -7: Not asked -8: Do not know -9: Do not want to answer	Worker	Variable coded as a dummy, with 0 being a response denying any concern and 1 being a positive concern response (2 through 7). In some secondary runs, responses of 8 and -9 are coded as positive accounts of verbal abuse, with the assumption that a decision not to respond indicates a reluctance to report abusive treatment.

<i>Worker_Production_Pay</i>	"What fraction of a sewer's pay is based on her own production?"	1: None 2: Less than 10 percent 3: 10 to 20 percent 4: 20 to 30 percent 5: 30 to 40 percent 6: 40 to 50 percent 7: 50 to 60 percent 8: 60 to 70 percent 9: 70 to 80 percent 10: 80 to 90 percent 11: All of a sewer's pay depends on her number of pieces completed	Human Resources Manager	
<i>Years_atFactory</i> (Vietnam, calculated from the following survey questions)	"How long have you been working in this factory (years)?"	Numerical value of years	Worker	
<i>-Fac_OveraYear</i>	"Have you been working in this factory for more than one year?" (If responded answers "yes," they then input the numerical value of years, if "no," then the numerical value of months)	0: No 1: Yes	Worker	
<i>-Months_atFactory</i>	"How long have you been working in this factory (months)?"	Numerical value of months	Worker	
<i>Years_atFactory_adj</i> (Indonesia and Jordan)	"How long have you been working in your factory?"	1: 0-3 months 2: 4-6 months 3: 7-9 months 4: 10-12 months 5: 13-18 months 6: 19-23 months 7: 2 years 8: 3 years 9: 4 years 10: 5 years 11: 5 to 8 years 12: 9 or more years	Worker	Variable was recoded such that all responses were in years, and took the value of the median of the selected range. E.g. if a worker responded "5" (13-18 months), the variable took the value of 1.29

APPENDIX 3

Jordan : Basic Summary Statistics for All Variables

	Mean	Median	SD	Min	Max	Count
<i>Avg_VA</i>	0.45	0.4	0.2	0.0	1.0	1468
<i>Birthplace</i>	2.49	2.0	1.6	1.0	6.0	1440
<i>Contract_Type</i>	6.57	8.0	2.9	1.0	9.0	1333
<i>Days_Training</i>	53.91	24.5	57.3	0.0	165.0	1232
<i>Education</i>	4.31	4.0	2.1	1.0	9.0	1458
<i>Female</i>	0.69	1.0	0.5	0.0	1.0	1473
<i>HourlyPayUSD</i>	1.33	0.9	1.2	0.1	6.7	1126
<i>LastPay</i>	224.61	160.0	454.9	1.0	8118.0	1362
<i>Late_Penalty</i>	2.01	2.0	1.0	1.0	4.0	1216
<i>LowWageConcern</i>	0.61	1.0	0.5	0.0	1.0	716
<i>PayPeriod</i>	2.92	3.0	0.4	1.0	3.0	1325
<i>Promoted</i>	0.49	0.0	0.8	0.0	3.0	1455
<i>Sup_comfort</i>	1.96	2.0	1.1	1.0	5.0	1427
<i>Sup_Language</i>	0.84	1.0	0.4	0.0	1.0	1447
<i>Sup_PerformancePay</i>	2.65	1.0	3.0	1.0	11.0	999
<i>Sup_Stress</i>	2.32	2.0	1.0	1.0	4.0	1245
<i>TotalHours</i>	57.77	60.0	19.4	1.0	131.0	1272
<i>Verbalabuse</i>	0.46	0.0	0.5	0.0	1.0	673
<i>Worker_Production_Pay</i>	2.00	1.0	2.0	1.0	10.0	953
<i>Years_atfactory_Adj</i>	3.09	2.0	2.6	0.2	9.0	1408

Indonesia: Basic Summary Statistics for All Variables

	Mean	Median	SD	Min	Max	Count
<i>Avg_VA</i>	0.78	0.8	0.2	0.0	1.0	2241
<i>BasicSkillsTraining</i>	0.17	0.0	0.4	0.0	1.0	2241
<i>Contract_Type</i>	6.93	8.0	2.3	1.0	9.0	1719
<i>Education</i>	4.14	4.0	0.7	1.0	6.0	2238
<i>Female</i>	0.88	1.0	0.3	0.0	1.0	2241
<i>HourlyPayUSD</i>	0.56	0.6	0.2	0.0	1.0	1438
<i>Ind_CBA</i>	0.49	0.0	0.5	0.0	1.0	1508
<i>LastPay</i>	1797.61	1290.0	1878.9	1.0	9999.0	1658
<i>LowWageConcern</i>	0.86	1.0	0.3	0.0	1.0	446
<i>PayPeriod</i>	2.68	3.0	0.5	1.0	3.0	2092
<i>Promotion_Bias</i>	0.28	0.0	0.5	0.0	1.0	1649
<i>Rush_Orders</i>	2.08	2.0	0.9	1.0	4.0	1667
<i>Sup_comfort</i>	1.83	2.0	0.6	1.0	5.0	1751
<i>Sup_PerformancePay</i>	5.21	3.0	4.3	1.0	11.0	1289
<i>Sup_Stress</i>	2.19	2.0	0.9	1.0	4.0	1726
<i>TotalHours</i>	48.97	45.5	8.4	5.0	78.0	1880
<i>Verbalabuse</i>	0.79	1.0	0.4	0.0	1.0	1132
<i>Worker_Production_Pay</i>	1.98	1.0	2.2	1.0	11.0	1436
<i>Years_atfactory</i>	6.65	7.0	3.5	1.0	12.0	2223
<i>Years_atfactory_Adj</i>	3.12	2.0	2.9	0.2	9.0	2142

Vietnam: Basic Summary Statistics for All Variables

	Mean	Median	SD	Min	Max	Count
<i>Age</i>	30.64	29.0	7.1	19.0	66.0	5132
<i>Avg_VA</i>	0.07	0.0	0.1	0.0	0.6	5136
<i>BasicSkillsTraining</i>	0.62	1.0	0.5	0.0	1.0	5136
<i>Bullying_Compliance</i>	0.01	0.0	0.1	0.0	1.0	4485
<i>Contract_Type</i>	4.41	5.0	0.8	1.0	6.0	5095
<i>Education</i>	3.29	3.0	1.0	1.0	9.0	5135
<i>Female</i>	0.81	1.0	0.4	0.0	1.0	5136
<i>HourlyPayUSD</i>	0.73	0.6	0.4	0.1	3.9	4795
<i>Ind_CBA</i>	0.90	1.0	0.3	0.0	1.0	4923
<i>LastPay</i>	3466516.15	3200000.0	3349634.0	0.0	88888888.0	5034
<i>LowWageConcern</i>	0.13	0.0	0.3	0.0	1.0	5049
<i>PayPeriod</i>	2.94	3.0	0.2	1.0	3.0	5109
<i>Promoted</i>	0.21	0.0	0.6	0.0	3.0	5093
<i>Rush_Orders</i>	2.01	2.0	1.0	1.0	4.0	4524
<i>Sup_comfort</i>	1.24	1.0	0.6	1.0	4.0	5105
<i>Sup_PerformancePay</i>	3.68	1.0	4.0	1.0	11.0	3855
<i>Sup_Stress</i>	2.18	2.0	0.8	1.0	4.0	4760
<i>Time_to_TargetF</i>	10.06	10.0	1.6	3.5	16.5	1543
<i>Time_to_TargetM</i>	10.01	10.0	1.6	3.5	16.0	1581
<i>TotalHours</i>	58.30	59.0	10.1	8.0	120.0	4978
<i>Verbalabuse</i>	0.07	0.0	0.3	0.0	1.0	5095
<i>Weeks_Training</i>	4.96	2.0	6.1	0.0	25.2	4336
<i>Worker_Production_Pay</i>	4.58	1.0	4.5	1.0	11.0	3873
<i>Years_atfactory</i>	3.49	3.0	3.4	0.0	20.0	5129

APPENDIX 4

Jordan Verbal Abuse Regression: Coding Breakdown for Factor Variables

Stress level of supervisors		No.
1	Serious Problem	310
2	Modest Problem	452
3	Minor Problem	254
4	Not a Problem	229
Total		1245

Customer penalties for late delivery		No.
1	Serious Problem	489
2	Modest Problem	285
3	Minor Problem	384
4	Not a Problem	58
Total		1216

Birthplace		No.
1	Jordan	520
2	Bangladesh	265
3	Sri Lanka	451
4	Pakistan	3
5	China	30
6	Other	171
Total		1440

If you were having a problem at your factory, how comfortable would you feel seeking help from your supervisor?		No.
1	Very comfortable	558
2	Comfortable	584
3	Uncomfortable	144
4	Very uncomfortable	63
5	Not comfortable at all	78
Total		1427

Jordan: Coding Breakdown for Education and Contract_Type

Education	No.
1 no formal education	70
2 primary school	202
3 lower secondary school	270
4 upper secondary school	490
5 short-term technical training	37
6 long-term technical training	48
7 professional secondary school	199
8 junior college diploma	98
9 bachelor's degree	44
Total	1,458

What type of contract do you have	No.
1 Training	182
2 Apprentice	67
3 Home Work	47
4 Subcontract	32
5 Bonded	22
6 Probationary	45
7 Temporary	71
8 Fixed Time	501
9 Unlimited Time	366
Total	1,333

Vietnam Verbal Abuse Regression: Coding Breakdown for Factor Variables

Stress level of supervisors		No.
1	Serious Problem	796
2	Modest Problem	2686
3	Minor Problem	883
4	Not a Problem	395
Total		4760

Too many rush orders		No.
1	Serious Problem	1790
2	Modest Problem	1539
3	Minor Problem	536
4	Not a Problem	659
Total		4524

If you were having a problem at your factory, how comfortable would you feel seeking help from your supervisor?		No.
1	Very comfortable	4216
2	Comfortable	618
3	Uncomfortable	221
4	Very uncomfortable	50
Total		5105

Vietnam: Coding Breakdown for Education and Contract_Type

What type of contract do you have?		No.
1	No Contract	53
2	Training or Probationary Contract	147
3	Less than one year temporary contract	210
4	1 to 3 year contract	2075
5	Indefinite Contract	2485
6	Do not Know	125
Total		5,095

Education		No.
1	no formal education	28
2	primary school	614
3	lower secondary school	3023
4	upper secondary school	1242
5	short-term technical training	13
6	long-term technical training	49
7	professional secondary school	96
8	junior college diploma	39
9	bachelor's degree	31
Total		5,135

Indonesia Verbal Abuse Regression: Coding Breakdown for Factor Variables

Stress level of supervisors		No.
1	Serious Problem	455
2	Modest Problem	626
3	Minor Problem	500
4	Not a Problem	145
Total		1726

Too many rush orders		No.
1	Serious Problem	519
2	Modest Problem	656
3	Minor Problem	334
4	Not a Problem	158
Total		1667

If you were having a problem at your factory, how comfortable would you feel seeking help from your supervisor?		No.
1	Very comfortable	483
2	Comfortable	1122
3	Uncomfortable	116
4	Very uncomfortable	17
	Not comfortable at all	13
Total		1751

Indonesia: Coding Breakdown for Education and Contract_Type

What type of contract do you No.		
1	Training	106
2	Apprentice	17
3	Home Work	25
4	Subcontract	188
5	Bonded	34
6	Probationary	196
7	Temporary	33
8	Fixed Time	716
9	Unlimited Time	404
Total		1,719

Education		No.
1	No Formal Education	3
2	Elementary	463
3	Junior High	997
4	High School	765
5	University	10
Total		2,238

Job Description Breakdown, by Country

Job Title	Jordan		Vietnam		Indonesia	
	Count	Percentage	Count	Percentage	Count	Percentage
Sewer	695	45.0%	2546	49.1%	1130	50.6%
Cutter	93	6.0%	156	3.0%	144	6.5%
Spreader	33	2.1%	109	2.1%	14	0.6%
Checker	62	4.0%	408	7.9%	61	2.7%
Mechanic	26	1.7%	3	0.1%	16	0.7%
Packer	88	5.7%	289	5.6%	83	3.7%
Quality Control	98	6.3%	65	1.3%	196	8.8%
Helper	149	9.6%	402	7.8%	236	10.6%
Other	234	15.1%	1076	20.7%	328	14.7%
Supervisor	67	4.3%	132	2.5%	24	1.1%
Total	1,545		5,186		2,232	

APPENDIX 5

Jordan: Average Verbal Abuse

VARIABLES	(1) Avg_VA	(2) Avg_VA	(3) Avg_VA	(4) Avg_VA
<i>Worker_Production_Pay</i>	-0.051*** (0.032)	-0.050*** (0.029)	-0.065*** (0.029)	-0.044** (0.095)
<i>Sup_PerformancePay</i>	0.043*** (0.000)	0.041*** (0.000)	0.038*** (0.000)	0.028*** (0.004)
<i>Female</i>		0.079*** (0.033)	0.055** (0.088)	0.032 (0.209)
<i>Sup_Language</i>			-0.022 (0.288)	0.017 (0.462)
<i>Late_Penalty: Modest Problem</i>			-0.174* (0.107)	-0.074 (0.425)
<i>Late_Penalty: Minor Problem</i>			-0.243*** (0.041)	-0.167* (0.103)
<i>Sup_Stress: Modest Problem</i>			0.268*** (0.039)	0.231*** (0.041)
<i>Sup_Stress: Minor Problem</i>			0.251** (0.054)	0.225** (0.070)
<i>Sup_Stress: Not a Problem</i>			0.069 (0.618)	0.055 (0.651)
<i>Sup_comfort</i>				0.004 (0.425)
<i>Birthplace_Bangladesh</i>				-0.157*** (0.005)
<i>Birthplace_Sri_Lanka</i>				-0.173*** (0.006)
<i>Birthplace_Pakistan</i>				-0.029 (0.679)
<i>Birthplace_China</i>				-0.007 (0.913)
<i>Birthplace_Other</i>				-0.116** (0.060)
<i>Constant</i>	0.419*** (0.000)	0.366*** (0.000)	0.405*** (0.000)	0.433*** (0.000)
Observations	817	817	716	708
R-squared	0.148	0.171	0.382	0.464

Robust pval in parentheses
 *** p<0.05, ** p<0.1, * p<0.15

Vietnam: Average Verbal Abuse

VARIABLES	(1) Avg_VA	(2) Avg_VA	(3) Avg_VA	(4) Avg_VA
<i>Worker_Production_Pay</i>	0.004 (0.273)	0.004 (0.267)	0.002 (0.401)	0.003 (0.342)
<i>Sup_PerformancePay</i>	-0.004 (0.252)	-0.004 (0.250)	-0.002 (0.466)	-0.003 (0.314)
<i>Female</i>		0.009 (0.159)	0.006 (0.203)	0.006 (0.290)
<i>LowWageConcern</i>			0.058*** (0.000)	0.057*** (0.000)
<i>Rush_Orders: Modest Problem</i>			-0.030*** (0.041)	-0.034*** (0.039)
<i>Rush_Orders: Minor Problem</i>			-0.018 (0.489)	-0.015 (0.620)
<i>Rush_Orders: Not a Problem</i>			-0.034* (0.112)	-0.034 (0.213)
<i>Sup_comfort</i>			0.026*** (0.000)	0.025*** (0.000)
<i>Ind_CBA</i>				-0.010** (0.061)
<i>Sup_Stress: Modest Problem</i>				0.027 (0.214)
<i>Sup_Stress: Minor Problem</i>				0.017 (0.538)
<i>Sup_Stress: Not a Problem</i>				0.005 (0.839)
<i>Constant</i>	0.079*** (0.000)	0.071*** (0.000)	0.044*** (0.002)	0.041*** (0.046)
Observations	3,439	3,439	3,067	2,893
R-squared	0.025	0.026	0.159	0.173

Robust pval in parentheses
 *** p<0.05, ** p<0.1, * p<0.15

APPENDIX 6

Jordan: Average Verbal Abuse with Low Wage Concern

VARIABLES	Avg_VA
<i>Worker_Production_Pay</i>	-0.040** (0.092)
<i>Sup_PerformancePay</i>	0.024*** (0.011)
<i>Female</i>	0.069*** (0.031)
<i>Sup_Language</i>	-0.010 (0.756)
<i>LowWageConcern</i>	0.053*** (0.017)
<i>2.Late_Penalty</i>	-0.033 (0.718)
<i>3.Late_Penalty</i>	-0.146* (0.147)
<i>2.Sup_Stress</i>	0.185** (0.087)
<i>3.Sup_Stress</i>	0.205** (0.084)
<i>4.Sup_Stress</i>	0.024 (0.837)
<i>Sup_comfort</i>	-0.012 (0.174)
<i>2.Birthplace</i>	-0.166*** (0.004)
<i>3.Birthplace</i>	-0.178*** (0.009)
<i>4.Birthplace</i>	0.007 (0.915)
<i>5.Birthplace</i>	0.061 (0.453)
<i>6.Birthplace</i>	-0.068 (0.266)
<i>Constant</i>	0.440*** (0.000)
Observations	351
R-squared	0.513

Robust pval in parentheses
 *** p<0.05, ** p<0.1, * p<0.15

Indonesia: Average Verbal Abuse with Low Wage Concern

VARIABLES	Avg_VA
<i>Worker_Production_Pay</i>	-0.001 (0.937)
<i>Sup_PerformancePay</i>	0.001 (0.936)
<i>Female</i>	0.073** (0.062)
<i>LowWageConcern</i>	0.130*** (0.001)
<i>2.Rush_Orders</i>	0.059 (0.285)
<i>3.Rush_Orders</i>	-0.022 (0.768)
<i>4.Rush_Orders</i>	0.247*** (0.007)
<i>2.Sup_Stress</i>	-0.086 (0.231)
<i>3.Sup_Stress</i>	-0.122* (0.144)
<i>4.Sup_Stress</i>	-0.032 (0.775)
<i>Promotion_Bias</i>	-0.020 (0.468)
<i>Sup_comfort</i>	0.051*** (0.021)
<i>Constant</i>	0.544*** (0.000)
Observations	131
R-squared	0.497

Robust pval in parentheses
 *** p<0.05, ** p<0.1, * p<0.15

APPENDIX 7

Jordan: Hourly Wages, using Individual Reports of Verbal Abuse			
VARIABLES	(1)	(2)	(3)
	<i>logHourlyPayUS</i>	<i>logHourlyPayUS</i>	<i>logHourlyPayUS</i>
	<i>D</i>	<i>D</i>	<i>D</i>
<i>Verbalabuse</i>	0.124*** (0.034)	0.119** (0.099)	0.149*** (0.030)
<i>Female</i>		-0.158*** (0.025)	-0.188*** (0.003)
<i>Education: Primary School</i>		-0.013 (0.942)	-0.027 (0.879)
<i>Education: Lower Secondary School</i>		0.102 (0.618)	0.089 (0.654)
<i>Education: Upper Secondary School</i>		0.104 (0.574)	0.108 (0.565)
<i>Education: Short-Term Technical Training</i>		0.018 (0.928)	0.100 (0.663)
<i>Education: Long-Term Technical Training</i>		0.815*** (0.041)	0.835*** (0.021)
<i>Education: Professional Secondary School</i>		0.142 (0.425)	0.138 (0.440)
<i>Education: Junior College Diploma</i>		0.155 (0.332)	0.125 (0.478)
<i>Education: Bachelor's Degree</i>		-0.010 (0.972)	0.029 (0.931)
<i>Years_atfactory_Adj</i>		0.025*** (0.045)	0.029*** (0.022)
<i>Promoted</i>		0.076*** (0.048)	0.080** (0.056)
<i>Days_Training</i>		0.002*** (0.021)	0.002*** (0.034)
<i>Contract_Type: Apprentice</i>			-0.051 (0.814)
<i>Contract_Type: Home Work</i>			-0.398*** (0.026)
<i>Contract_Type: Subcontract</i>			-0.312** (0.093)
<i>Contract_Type: Bonded</i>			0.229 (0.433)
<i>Contract_Type: Probationary</i>			-0.299 (0.225)
<i>Contract_Type: Temporary</i>			-0.471*** (0.013)
<i>Contract_Type: Fixed Time</i>			-0.096 (0.403)
<i>Contract_Type: Unlimited Time</i>			-0.146 (0.155)
<i>Constant</i>	-0.079 (0.266)	-0.184 (0.500)	-0.080 (0.778)

Observations	508	393	373
R-squared	0.023	0.113	0.161

Robust pval in parentheses
*** p<0.05, ** p<0.1, * p<0.15

Vietnam: Hourly Wages, Adjusted for Declined Responses

VARIABLES	(1) <i>logHourlyPayUS</i> <i>D</i>	(2) <i>logHourlyPayUS</i> <i>D</i>	(3) <i>logHourlyPayUS</i> <i>D</i>
<i>Avg_VA</i>	-0.016 (0.933)	0.019 (0.914)	0.238 (0.207)
<i>Education: Primary School</i>		0.066 (0.386)	0.124*** (0.020)
<i>Education: Lower Secondary School</i>		0.128** (0.089)	0.169*** (0.002)
<i>Education: Upper Secondary School</i>		0.157** (0.052)	0.204*** (0.000)
<i>Education: Short-Term Technical Training</i>		0.357*** (0.049)	0.385*** (0.026)
<i>Education: Long-Term Technical Training</i>		0.117 (0.293)	0.111 (0.185)
<i>Education: Professional Secondary School</i>		0.177*** (0.045)	0.241*** (0.001)
<i>Education: Junior College Diploma</i>		0.338*** (0.017)	0.264*** (0.006)
<i>Education: Bachelor's Degree</i>		0.581*** (0.000)	0.576*** (0.000)
<i>Female</i>		-0.083*** (0.000)	-0.098*** (0.000)
<i>Promoted</i>		0.044*** (0.000)	0.043*** (0.001)
<i>Years_atfactory</i>		0.023*** (0.000)	0.024*** (0.000)
<i>BasicSkillsTraining</i>			0.005 (0.704)
<i>Competition</i>			0.000*** (0.000)
<i>JobCutter</i>			-0.084* (0.108)
<i>JobSpreader</i>			-0.017 (0.637)
<i>JobChecker</i>			0.011 (0.600)
<i>JobMechanic</i>			0.143*** (0.000)
<i>JobPacker</i>			-0.063*** (0.026)
<i>JobQualityControl</i>			0.109*** (0.036)
<i>JobHelper</i>			-0.111*** (0.000)

<i>JobOther</i>			-0.032**
			(0.083)
<i>Contract_Type: Training or Probationary</i>		0.049	0.040
		(0.560)	(0.668)
<i>Contract_Type: Temporary, Less than 1 year</i>		0.212***	0.199***
		(0.007)	(0.025)
<i>Contract_Type: Definite term for 1 to 3 years</i>		0.215***	0.205***
		(0.005)	(0.017)
<i>Contract_Type: Indefinite or open-ended</i>		0.292***	0.276***
		(0.000)	(0.002)
<i>Contract_Type: I do not know</i>		0.109	0.084
		(0.226)	(0.383)
<i>2010b.year</i>	0.000	0.000	0.000
	(.)	(.)	(.)
<i>2011.year</i>	0.208***	0.195***	0.201***
	(0.000)	(0.000)	(0.000)
<i>2012.year</i>	0.414***	0.393***	0.405***
	(0.000)	(0.000)	(0.000)
<i>2013.year</i>	0.536***	0.494***	0.511***
	(0.000)	(0.000)	(0.000)
<i>Constant</i>	-0.738***	-1.117***	-1.151***
	(0.000)	(0.000)	(0.000)
Observations	4,665	4,592	4,155
R-squared	0.206	0.295	0.311

Robust pval in parentheses
*** p<0.05, ** p<0.1, * p<0.15

APPENDIX 8

Vietnam: Time to Production Target (Friday), with Individual Reports of Verbal Abuse				
VARIABLES	(1)	(2)	(3)	(4)
	<i>Time_to_Target</i>	<i>Time_to_Target</i>	<i>Time_to_Target</i>	<i>Time_to_Target</i>
	<i>F</i>	<i>F</i>	<i>F</i>	<i>F</i>
<i>Verbalabuse</i>	0.822*	0.885**	0.872*	0.924*
	(0.108)	(0.089)	(0.109)	(0.108)
<i>Age</i>	-0.006	-0.007	-0.008	-0.010
	(0.390)	(0.348)	(0.305)	(0.203)
<i>Female</i>	-0.092	-0.115	-0.100	-0.079
	(0.646)	(0.551)	(0.603)	(0.701)
<i>Education: Primary School</i>		-0.997	-0.860	-0.825
		(0.197)	(0.277)	(0.297)
<i>Education: Lower Secondary School</i>		-0.924	-0.864	-0.797
		(0.237)	(0.281)	(0.319)
<i>Education: Upper Secondary School</i>		-1.036	-0.934	-0.891
		(0.191)	(0.252)	(0.278)
<i>Education: Short-Term Technical Training</i>		-0.917	-0.733	-0.702
		(0.389)	(0.500)	(0.530)
<i>Education: Long-Term Technical Training</i>		-1.221*	-1.150	-0.995
		(0.138)	(0.170)	(0.221)
<i>Education: Professional Secondary School</i>		-1.749***	-1.674***	-1.498**
		(0.037)	(0.049)	(0.077)
<i>Education: Junior College Diploma</i>		-1.081	-1.154	-1.046
		(0.180)	(0.162)	(0.205)
<i>Education: Bachelor's Degree</i>		-1.908**	-1.738*	-2.079**
		(0.071)	(0.110)	(0.075)
<i>Years_atfactory</i>		0.002	0.001	0.002
		(0.901)	(0.954)	(0.922)
<i>BasicSkillsTraining</i>			-0.188*	-0.239***
			(0.101)	(0.041)
<i>Weeks_Training</i>			-0.009	-0.016
			(0.576)	(0.320)
<i>Rush_Orders</i>				-0.000
				(0.999)
<i>Constant</i>	10.214***	11.247***	11.347***	11.438***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	1,228	1,227	1,081	996
R-squared		0.002	0.014	0.016

Robust pval in parentheses

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

Vietnam: Time to Production Target (Monday), with Individual Reports of Verbal Abuse

VARIABLES	(1) <i>Time_to_TargetM</i>	(2) <i>Time_to_TargetM</i>	(3) <i>Time_to_TargetM</i>
<i>Verbalabuse</i>	0.621 (0.214)	0.620 (0.213)	0.953** (0.075)
<i>Age</i>	0.001 (0.940)	0.003 (0.730)	-0.001 (0.879)
<i>Female</i>	-0.011 (0.944)	-0.046 (0.773)	-0.054 (0.741)
<i>Education: Primary School</i>	-0.010 (0.981)	0.166 (0.710)	0.255 (0.602)
<i>Education: Lower Secondary School</i>	0.014 (0.972)	0.134 (0.751)	0.194 (0.687)
<i>Education: Upper Secondary School</i>	-0.124 (0.765)	0.050 (0.908)	0.003 (0.996)
<i>Education: Short-Term Technical Training</i>	-0.548 (0.330)	-0.287 (0.619)	-0.445 (0.448)
<i>Education: Long-Term Technical Training</i>	0.015 (0.983)	0.159 (0.823)	0.391 (0.567)
<i>Education: Professional Secondary School</i>	-0.937** (0.062)	-0.765* (0.129)	-0.754 (0.171)
<i>Education: Junior College Diploma</i>	0.143 (0.796)	0.172 (0.788)	0.236 (0.738)
<i>Education: Bachelor's Degree</i>	-1.820*** (0.000)	-1.539*** (0.007)	-1.670*** (0.013)
<i>Years_atfactory</i>	0.005 (0.757)	0.005 (0.773)	0.000 (0.989)
<i>Weeks_Training</i>		-0.022* (0.124)	-0.028*** (0.046)
<i>BasicSkillsTraining</i>		-0.174** (0.088)	-0.174* (0.102)
<i>Ind_CBA</i>			0.337* (0.137)
<i>Rush_Orders</i>			0.021 (0.750)
<i>Constant</i>	9.964*** (0.000)	9.956*** (0.000)	9.767*** (0.000)
Observations	1,258	1,100	981
R-squared	0.012	0.024	0.024

Robust pval in parentheses
 *** p<0.05, ** p<0.1, * p<0.15

APPENDIX 9

Vietnam: Time to Production Target (Friday), with Average Reports of Verbal Abuse				
VARIABLES	(1)	(2)	(3)	(4)
	<i>Time_to_Target</i> F	<i>Time_to_Target</i> F	<i>Time_to_Target</i> F	<i>Time_to_Target</i> F
<i>Avg_VA</i>	2.113** (0.067)	2.265*** (0.047)	2.181** (0.065)	2.932** (0.085)
<i>Age</i>	-0.011* (0.108)	-0.012* (0.125)	-0.013* (0.116)	-0.016*** (0.050)
<i>Female</i>	-0.076 (0.704)	-0.088 (0.647)	-0.086 (0.654)	-0.073 (0.724)
<i>Education: Primary School</i>		-0.911 (0.316)	-0.802 (0.384)	-0.753 (0.433)
<i>Education: Lower Secondary School</i>		-0.830 (0.366)	-0.794 (0.393)	-0.709 (0.464)
<i>Education: Upper Secondary School</i>		-0.850 (0.356)	-0.780 (0.402)	-0.701 (0.470)
<i>Education: Short-Term Technical Training</i>		-0.385 (0.782)	-0.240 (0.862)	-0.153 (0.916)
<i>Education: Long-Term Technical Training</i>		-1.102 (0.245)	-1.052 (0.269)	-0.858 (0.377)
<i>Education: Professional Secondary School</i>		-1.517* (0.112)	-1.471* (0.125)	-1.287 (0.197)
<i>Education: Junior College Diploma</i>		-0.933 (0.313)	-1.006 (0.282)	-0.898 (0.355)
<i>Education: Bachelor's Degree</i>		-1.483 (0.187)	-1.346 (0.237)	-1.581 (0.195)
<i>Years_atfactory</i>		0.004 (0.818)	0.001 (0.942)	0.003 (0.871)
<i>Weeks_Training</i>			-0.008 (0.597)	-0.016 (0.270)
<i>BasicSkillsTraining</i>			-0.164* (0.149)	-0.196** (0.098)
<i>Rush_Orders</i>				0.013 (0.867)
<i>Constant</i>	10.250*** (0.000)	11.139*** (0.000)	11.255*** (0.000)	11.269*** (0.000)
Observations	1,233	1,232	1,084	999
R-squared			0.013	0.015

Robust pval in parentheses
 *** p<0.05, ** p<0.1, * p<0.15

Vietnam: Time to Production Target (Monday), with Average Reports of Verbal Abuse			
VARIABLES	(1)	(2)	(3)
	<i>Time_to_TargetM</i>	<i>Time_to_TargetM</i>	<i>Time_to_TargetM</i>
<i>Avg_VA</i>	0.513 (0.573)	0.244 (0.792)	2.905** (0.084)
<i>Age</i>	-0.002 (0.811)	0.000 (0.981)	-0.008 (0.359)
<i>Female</i>	-0.006 (0.967)	-0.044 (0.783)	-0.064 (0.692)
<i>Education: Primary School</i>	0.019 (0.967)	0.177 (0.705)	0.342 (0.608)
<i>Education: Lower Secondary School</i>	0.052 (0.905)	0.161 (0.716)	0.349 (0.599)
<i>Education: Upper Secondary School</i>	-0.030 (0.946)	0.127 (0.776)	0.253 (0.708)
<i>Education: Short-Term Technical Training</i>	-0.235 (0.734)	0.007 (0.992)	0.109 (0.901)
<i>Education: Long-Term Technical Training</i>	0.019 (0.978)	0.136 (0.849)	0.604 (0.461)
<i>Education: Professional Secondary School</i>	-0.780* (0.126)	-0.612 (0.225)	-0.477 (0.514)
<i>Education: Junior College Diploma</i>	0.266 (0.630)	0.313 (0.624)	0.383 (0.594)
<i>Education: Bachelor's Degree</i>	-1.622*** (0.001)	-1.366*** (0.008)	-1.332*** (0.057)
<i>Years_atfactory</i>	0.004 (0.822)	0.003 (0.834)	0.005 (0.740)
<i>BasicSkillsTraining</i>		-0.183** (0.083)	-0.160* (0.142)
<i>Ind_CBA</i>			0.332* (0.148)
<i>Rush_Orders</i>			0.029 (0.665)
<i>Weeks_Training</i>		-0.021 (0.152)	
<i>Constant</i>	10.003*** (0.000)	10.049*** (0.000)	9.488*** (0.000)
Observations	1,264	1,106	1,102
R-squared	0.011	0.023	

Robust pval in parentheses
*** p<0.05, ** p<0.1, * p<0.15

APPENDIX 10

Vietnam: Time to Production Target using OLS regression		
VARIABLES	(1) Uninstrumented_1 Time_to_TargetF	(2) Uninstrumented_2 Time_to_TargetM
<i>Verbalabuse</i>	0.326** (0.061)	0.266** (0.065)
<i>Age</i>	-0.009 (0.241)	0.000 (0.992)
<i>Female</i>	-0.069 (0.705)	-0.026 (0.866)
<i>Education: Primary School</i>	-0.552 (0.432)	0.255 (0.517)
<i>Education: Lower Secondary School</i>	-0.492 (0.480)	0.221 (0.541)
<i>Education: Upper Secondary School</i>	-0.485 (0.491)	0.172 (0.641)
<i>Education: Short-Term Technical Training</i>	-0.165 (0.885)	-0.103 (0.860)
<i>Education: Long-Term Technical Training</i>	-0.740 (0.314)	0.213 (0.674)
<i>Education: Professional Secondary School</i>	-1.011 (0.176)	-0.479 (0.269)
<i>Education: Junior College Diploma</i>	-0.665 (0.379)	0.408 (0.520)
<i>Education: Bachelor's Degree</i>	-1.696** (0.061)	-1.363*** (0.004)
<i>Years_atfactory</i>	-0.000 (0.995)	0.000 (0.989)
<i>BasicSkillsTraining</i>	-0.262*** (0.023)	-0.157* (0.128)
<i>Weeks_Training</i>	-0.005 (0.728)	-0.024*** (0.048)
<i>Rush_Orders</i>	-0.025 (0.749)	-0.021 (0.750)
<i>Constant</i>	11.148*** (0.000)	10.064*** (0.000)
Observations	1,174	1,197
R-squared	0.020	0.027

Robust pval in parentheses
*** p<0.05, ** p<0.1, * p<0.15

APPENDIX 11

Indonesia: Average Verbal Abuse with Union Control Variable Included				
VARIABLES	(1) Avg_VA	(2) Avg_VA	(3) Avg_VA	(4) Avg_VA
Worker_Production_Pay	-0.010 (0.480)	-0.009 (0.529)	0.001 (0.907)	0.000 (0.964)
Sup_PerformancePay	-0.013 (0.193)	-0.013 (0.170)	0.001 (0.921)	0.000 (0.985)
Female			-0.014 (0.627)	-0.013 (0.629)
2.Rush_Orders			0.086 (0.224)	0.092 (0.219)
3.Rush_Orders			0.047 (0.596)	0.050 (0.586)
4.Rush_Orders			0.173 (0.272)	0.165 (0.299)
2.Sup_Stress			-0.033 (0.668)	-0.047 (0.577)
3.Sup_Stress			-0.065 (0.504)	-0.076 (0.472)
4.Sup_Stress			-0.017 (0.903)	-0.015 (0.921)
Promotion_Bias			0.027** (0.073)	0.029** (0.056)
Sup_comfort			0.069*** (0.001)	0.071*** (0.001)
Union_Rep		0.037 (0.535)		-0.016 (0.790)
Constant	0.836*** (0.000)	0.817*** (0.000)	0.597*** (0.000)	0.614*** (0.000)
Observations	1,164	1,107	577	550
R-squared	0.072	0.081	0.193	0.199

Robust pval in parentheses
 *** p<0.05, ** p<0.1, * p<0.15

Jordan: Average Verbal Abuse with Union Control Variable Included

VARIABLES	(1) Avg_VA	(2) Avg_VA	(3) Avg_VA	(4) Avg_VA
Worker_Production_Pay	-0.052*** (0.030)	-0.055*** (0.025)	-0.045** (0.070)	-0.036* (0.150)
Sup_PerformancePay	0.039*** (0.001)	0.036*** (0.002)	0.025*** (0.001)	0.018** (0.051)
Female			0.047*** (0.024)	0.063*** (0.004)
Sup_Language			0.010 (0.707)	0.014 (0.568)
2.Late_Penalty			-0.049 (0.582)	-0.026 (0.786)
3.Late_Penalty			-0.159** (0.099)	-0.124 (0.214)
2.Sup_Stress			0.168 (0.167)	0.145 (0.217)
3.Sup_Stress			0.149 (0.231)	0.187* (0.114)
4.Sup_Stress			-0.009 (0.946)	-0.040 (0.750)
Sup_comfort			0.010** (0.061)	0.011*** (0.044)
2.Birthplace			-0.165*** (0.002)	-0.175*** (0.001)
3.Birthplace			-0.139*** (0.006)	-0.118*** (0.008)
4.Birthplace			-0.058 (0.309)	-0.083 (0.196)
5.Birthplace			0.055 (0.406)	0.052 (0.446)
6.Birthplace			-0.099** (0.076)	-0.081* (0.125)
Union_Rep		-0.064 (0.326)		-0.046 (0.394)
Constant	0.510*** (0.000)	0.558*** (0.000)	0.533*** (0.000)	0.526*** (0.000)
Observations	817	788	708	681
R-squared	0.154	0.180	0.458	0.476

Robust pval in parentheses
 *** p<0.05, ** p<0.1, * p<0.15

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