Journal of Social Issues, Vol. 0, No. 00, 2020, pp. 1–40
doi: 10.1111/josi.12388

This article is part of the Special Issue "Global Perspectives on Women and Work" Abigail M. Folberg (Special Issue Editor). For a full listing of Special Issue papers, see: http://onlinelibrary.wiley.com/doi/10.1111/josi.2020.76.issue-3/issuetoc.

Do Financial Literacy Training and Clarifying Pay Calculations Reduce Abuse at Work?

Negin R. Toosi*
California State University East Bay

Elyse N. Voegeli
Harvard University

Ana Antolin
Tufts University

Laura G. Babbitt
Tufts University

Drusilla K. Brown
Tufts University

ABSTRACT: *Understanding the link between effort and pay is important for workers. Yet, in many parts of the world, women lack critical financial literacy skills and have employers who do not clearly communicate compensation schemes. Using randomized controlled trials, we first examined the effects of a training program to improve financial literacy among female workers in apparel factories in India and Bangladesh (baseline* N = *1,085). Training increased workers' financial planning through the use of a budget and utilization of banking systems, both of which contributed to increased savings. We next examined the effects*

*Correspondence concerning this article should be addressed to Negin R. Toosi, California State University East Bay, 25800 Carlos Bee Blvd, Hayward, CA 94542 [e-mail: negin.toosi@csueastbay.edu].

Author note: Negin R. Toosi, Department of Psychology, California State University East Bay; Elyse N. Voegeli, Harvard Kennedy School, Harvard University; Ana Antolin, Department of Economics, Tufts University; Laura G. Babbitt, Department of Economics, Tufts University; Drusilla K. Brown, Department of Economics, Tufts University. Funding for this research was provided by the Walmart Foundation and the UK Department for International Development.

of a management intervention in factories in Myanmar (baseline N = *429) and found improvements among the predominantly female workers in perceived pay clarity. Pay clarity, in turn, was associated with lower verbal abuse in study factories. Results indicate that both financial literacy and pay clarity are important in shaping female workers' experiences and vulnerability to financial exploitation.*

The benefits of work are deeply affected by the extent to which workers understand the link between their effort and their pay and by workers' ability to use their earnings to realize their goals in life. Realizing life goals through work effort requires two complementary components: financial literacy and pay clarity. In terms of financial literacy, workers benefit from understanding financial concepts, including having some level of mathematical skills, a sense of the importance of budgeting and saving, and awareness of financial institutions like banks that can provide secure accounts and compound interest. Financial literacy can also protect workers from financial exploitation. In terms of pay clarity, workers are more likely to be motivated to help firms meet their business objectives if employers provide information on how and why workers are paid as they are. Establishing transparent and predictable pay practices contributes to an organizational culture of accountability, fairness, and respect that, in turn, is related to a lower likelihood of sexual harassment and verbal abuse (Hershcovis et al., 2007; Lim & Cortina, 2005).

In this research, we investigate the role that both financial literacy and pay clarity play in work experiences, particularly for women, in garment factories in three countries. We examine the effects of a worker-directed financial literacy intervention in Bangladesh and India and a factory-level pay communication intervention in Myanmar on women's experiences at work and ability to use work to achieve life goals.

Financial Literacy

The Definition and Consequences of Financial Literacy

Financial literacy is the ability to manage one's own money effectively, including basic numeracy and understanding concepts such as interest, savings, inflation, and debt. According to research in the United States, individuals who do not understand compounding interest are likely to borrow more at higher rates of interest, save less money, and incur larger debts (Lusardi & Tufano, 2015; Lusardi & de Bassa Scheresberg, 2013; Stango & Zinman, 2009). Conversely, individuals who are more financially literate are better at budgeting, limiting their spending, and ultimately saving money and accumulating wealth (Perry & Morris, 2005; Stango & Zinman, 2009). Increased savings and reduced debt have been

associated with a greater likelihood of using formal institutions to save money (Hasler & Lusardi, 2017). Globally, just over half (57%) of adults save money, but the majority of those people do so through informal savings groups or by keeping their cash hidden at home, rather than using banks, which tend to provide higher interest rates (Klapper, Lusardi, & van Oudheusden, 2015).

Low financial literacy is associated with worse outcomes in domains beyond financial well-being, such as health problems, psychological distress, and depression (Kessler & Neighbors, 1986; Lorant et al., 2003; Mackenbach et al., 2008; Marmot, 2005). The impact of financial illiteracy is felt across generations because people are unable to pass on to their children the financial skills they themselves do not possess (Hung, Yoong, & Brown, 2012). Children in poorer families have lower educational aspirations and outcomes and a higher likelihood of socioemotional difficulties and deviant behavior (McLoyd, 1989; Shanks & Danziger, 2010).

The Gender Gap in Financial Literacy

The issue of financial literacy is particularly relevant for women and girls. Women, across age, country, and income persistently lag behind their male counterparts in financial literacy (Bucher-Koenen, Lusardi, Alessie, & van Rooij, 2016; Klapper et al., 2015; Lusardi & Mitchell, 2014).

Hasler and Lusardi (2017) analyzed data from 143 countries on the topics of compound interest, risk diversification, numeracy, and inflation (collected through Standard & Poor's 2014 Global Financial Literacy Survey). Countries varied widely in the percentage of adults who could correctly answer questions regarding three out of the four concepts, from 71% (Norway) to 13% (Yemen). Yet, in the majority of countries, women had lower financial literacy rates than men. This gender disparity applies not only to less-developed countries but also to industrialized countries such as the United States, Germany, and the Netherlands (e.g., Bucher-Koenen et al., 2016, Chen & Volpe, 2002). For the countries of interest in the current research, women's rates of financial literacy were 4–5 percentage points lower than the overall country averages (Bangladesh: 19%, India: 24%, Myanmar: 52%; Hasler & Lusardi, 2017). Women globally also had a lower likelihood of using formal savings methods than men and higher percentages of financial fragility (i.e., would not be able to access sufficient funds to cover an emergency) compared with men (Hasler & Lusardi, 2017).

Research highlights the importance of education and especially numeracy in financial literacy. A comparison of 55 countries showed that performance on the math section of the PISA, a standardized test of problem solving and cognition, predicts financial literacy at the country level (Jappelli, 2010). However, women and girls in many parts of the world receive less formal schooling and fewer

opportunities to engage with financial markets than their male counterparts (World Economic Forum, 2020). As a consequence, they may be less likely to receive the requisite math education upon which to build concepts needed for financial literacy and further prevented from accessing opportunities through employment or experience that might expand their knowledge and improve their confidence (Hung, Yoong, & Brown, 2012).

The gender gap in financial literacy translates into the workplace, where women may be less able to assess whether they are paid what they are owed due to a lack of numeracy, and less likely to use banks effectively to save the money that they do receive. The consequences of low financial literacy are compounded by the fact that women are more likely to have career interruptions due to child-rearing, are more likely to head single-parent households, and tend to live longer than men (Lusardi & Mitchell, 2008; Møller, Fincher, & Thornhill, 2009). Across our countries of interest, gender norms that lead to lower education for women have been linked to household poverty (Hossain & Tisdell, 2005; Kyaw & Routray, 2006; Simmons & Supri, 1999).

Financial Illiteracy and Sexual Harassment

Financial illiteracy can make workers vulnerable to sexual harassment for several reasons. Sexual harassment, or unwanted sexual attention through verbal or physical behavior, can be divided into two forms. Hostile environment sexual harassment creates an intimidating, hostile, and unwelcoming work environment, whereas *quid pro quo* harassment refers to sexual behavior being demanded in exchange for an outcome relevant to the worker, such as continued employment (ILO, n.d.).

To the extent that financial illiteracy is linked with financial fragility, this may lead women to be more susceptible to sexual harassment, particularly of the *quid pro quo* form, as supervisors may demand sexual contact in exchange for a pay bonus. Greater savings and financial assets may protect female workers from that risk. However, savings alone may not be a sufficient buffer against sexual harassment without a broader framework of personal and social empowerment, as found in research in Uganda (Austrian & Muthengi, 2014). To the extent that low financial literacy is associated with lower status, decreased control over one's outcomes, and fewer opportunities for advancement in an organization, it also makes women more vulnerable to sexual harassment, particularly hostile environment sexual harassment that functions as a display of power over others (Lim & Cortina, 2005; Popovich & Warren, 2010). Therefore, both as a function of savings and as a function of power, financial illiteracy may put women at risk of sexual harassment.

Financial Literacy Can Be Improved through Education

Evidence for the effectiveness of math education in enhancing financial literacy among youth and young adults has been found in a number of countries including Singapore (Barua, Koh, & Mitchell, 2018), Ghana (Berry, Karlan, & Pradhan, 2018), and the United States, in some cases showing a stronger effect for women than for men (Chen & Volpe, 2002; Cole, Paulson, & Shastry, 2016). For example, Bernheim, Garret, and Maki (2001) found that state-mandated financial education in high school led to higher rates of savings and accumulation of wealth throughout recipients' lifetimes. Similar findings from older adults in American workplaces suggest that financial training can lead to better planning for later financial needs (e.g., Bernheim & Garrett, 2003; Duflo & Saez, 2003). The implications of financial literacy may even go beyond financial outcomes. For example, Creevey and Edgerton (1997) found that financial training for women in India not only assisted them to establish small businesses, increased their incomes, and reduced poverty rates, but also led to greater investment in children's education and higher levels of female political participation in their communities.

Messy and Monticone (2013) enumerated over a dozen projects carried out in countries around the world that focused on improving financial literacy through addressing the needs of specific subgroups of women, such as teenagers and young adults, the elderly, microentrepreneurs, and poor and marginalized women. They found that these targeted educational efforts were largely successful in improving financial knowledge and attitudes, and contributed to more financially beneficial behavior. Miller, Reichelstein, Salas, and Zia (2014) carried out a meta-analysis of interventions (about 75% of which were located in the United States) to improve consumers' financial literacy or financial skills, attitudes, and behaviors. They found that across diverse approaches to training, populations targeted, and intensity and duration of the interventions, training seemed to have an overall positive effect on saving behavior and record-keeping skills but did not have a consistent effect on loan defaults. This finding echoes a conclusion drawn earlier by Hathaway and Khatiwada (2008) that for programs to be effective, they need to be highly targeted to specific subpopulations and relevant to specific financial activities.

Beyond Financial Literacy Training

However, there are limits to interventions that depend on providing tools to one segment of the population without addressing their level of agency and power in the broader context (Field, Jayachandran, & Pande, 2010). Therefore, in the next section, we move from focusing on workers' financial literacy to the role of

the organization in establishing pay clarity and practices that support and affirm the humanity of the workers.

Pay Clarity

Factors in Determining Pay Structure and Pay Clarity

When determining how to pay employees, factories have to make decisions about several factors involved in compensation—for example, pay level, pay structure, and the basis of pay (Gerhart & Rynes, 2003). Pay practices vary across organizations and across individuals within organizations. Some individuals (often managers) may be paid a regular monthly or annual salary, while production workers may be paid an hourly wage, including the possibility of overtime pay. Organizations in which effort is easily observable, such as garment factories, may use a piece rate approach, basing pay in part or wholly by pieces completed (Borino, 2018; Davis, 2016). Factories may also use bonuses to reward quantity—if quotas are met or exceeded—or quality—if the number of defective items is below a certain threshold. These bonuses may accrue to workers or to their supervisors. Factories may also use attendance, seniority, skill, and annual bonuses to determine pay. Other aspects that might predict a worker's final earnings include the possibility that factories may dock workers' pay if they have high levels of defective garments or if unexpected problems disrupt the manufacturing process.

Complexity alone is a sufficient barrier to ascertaining that one has been paid correctly. Transparency concerning pay is a second factor. Some employers operate with a great deal of secrecy and even prohibit employees from discussing their compensation with each other, while others operate on an open-book management system where all employees are able to access the company's financial ledgers and documents (Burroughs, 1982; Colella, Paetzold, Zardkoohi, & Wesson, 2007; Davis, 1997; Lloyd & Case, 1998).

The Importance of Information about Pay for Workers

Pay clarity can have a substantial effect creating a balance between workers' and employers' needs and benefits and helping both parties reach mutually beneficial outcomes (Stiglitz, 1998). More information about how their pay is calculated can assist workers to ensure that they are being paid appropriately for their effort, to compare different options, to balance their personal and work obligations, and to plan their time and their budgets (Colella, Paetzold, Zardkoohi & Wesson, 2007; Eisenberg, 2011). Furthermore, pay clarity as a characteristic of the workplace can increase productivity, motivation, loyalty, and job satisfaction (Futrell & Jenkins, 1978; Locke & Latham, 1990).

Information is especially important for those with less power in a negotiation, such as workers in comparison to managers, or women in male-dominated industries (e.g., Ghasemi, in press). When those with more power had more information in a bargaining situation, they were likely to withhold it to protect their advantage. However, when those with less power (e.g., employees or subordinates) were able to access that information, they used it to achieve a better deal (Brodt, 1994; Hamner & Harnett, 1975; Roth & Murnighan, 1982). Similarly, when companies obfuscated or did not disclose the formula underlying their compensation schemes, workers were unable to make decisions that suited their needs, or resorted to collective action (i.e., strikes) to get that information (Hayes, 1984; Rosenblat & Stark, 2016).

A lack of transparency in how wages are calculated means that workers do not see how their efforts are directly linked to their pay. As a consequence, workers may perceive the company as paternalistic and as lacking in organizational justice (Ambrose & Schminke, 2009; Colella et al., 2007; Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Padavic & Earnest, 1994). Lack of pay clarity is associated with lower job satisfaction, less satisfaction with supervisors, less organizational commitment, and less trust in the company to pay them the appropriate amount (Billikopf, 2014; Colquitt et al., 2001; Jones, Scarpello, & Bergmann, 1999). Furthermore, when there are bonuses included in the pay, workers may see it as arbitrary rather than due to their own efforts, resulting in a misalignment between their behaviors and those actions that garner the highest pay.

Piece rate and partial piece rate pay in particular are associated with worse physical health and poorer emotional outcomes than hourly pay, as reported in a study of about 6,000 workers in Vietnam, Indonesia, Jordan, Haiti, and Nicaragua (Borino, 2018). This suggests that a large portion of these negative emotional and physical effects are driven by not being able to predict how much they will be paid and concern that it may not be enough to meet their needs. Workers try to compensate for this uncertainty by working more quickly, for longer hours, and through illness, in turn, raising the likelihood of injury and distress.

The Gendered Effects of Pay Clarity

There are multiple ways in which a lack of pay clarity has been found to be especially damaging for women. Pay secrecy is often associated with gender wage disparities (Colella et al., 2007; Kim, 2015). Lack of openness about pay is often connected with sexual harassment and verbal abuse, as all three are associated with undervaluing workers and exerting power over others (Lim & Cortina, 2005; O'Leary-Kelly, Paetzold, & Griffin, 2000; Popovich & Warren, 2010).

Women are strongly overrepresented in jobs with piece rate pay, which, as noted above, leave workers feeling less certain about how much they will actually be paid (e.g., Geddes & Heywood, 2003; Hart, 2016; Heywood & Jirjahn,

2002). Piece rate pay has also been associated with lower verbal abuse: Rourke (2014) found that piece rate jobs were associated with less verbal abuse in Jordan although the evidence was weaker in Vietnam and Indonesia. However, if the pay scheme is too complex for workers to easily parse, then it loses its potential for motivation, and supervisors may again use verbal abuse to goad workers into working faster.

Furthermore, those in piece rate or partial piece rate jobs are more susceptible to sexual harassment (Borino, 2018). Supervisors, who are often male, are responsible for reporting the output of workers, typically female, setting up situations that are ripe for *quid pro quo* sexual harassment. Supervisors could request sexual acts in exchange for ensuring that workers are paid correctly, as was found in research in Haiti, Indonesia, Jordan, Nicaragua, and Vietnam (Lin, Babbitt, & Brown, 2014; Truskinovsky, Rubin, & Brown, 2014). Although there is less likelihood of *quid pro quo* sexual harassment when supervisors are female, the likelihood of hostile environment sexual harassment combined with verbal abuse remains. Supervisors may use sexually loaded terms (similar to "slut" or "whore") to try to shame workers for not being productive enough. In cultures that value female modesty and chastity, these terms may be especially provoking for the female workers at whom they are directed (Maass, Cadinu, & Galdi, 2013; Thein, 2015).

Accountability and Organizational Tolerance

Sexual harassment and verbal abuse are often associated with a workplace environment of incivility and disrespect (Lim & Cortina, 2005). When a company does not value its employees enough to be transparent about its pay, the workers are also likely to be more vulnerable to harassment or abuse, and less likely to be believed when or if they report the situation (Calfas, 2018; Chaney, 2018; Lobel, 2019). Organizational tolerance of sexual harassment—or the perception that reporting harassment will have costs for the target but not the perpetrator—is a key predictor of sexual harassment (Cantisano, Dominguez, & Depolo, 2008).

Beyond the effects of organizational tolerance, there is also the element of accountability. Accountability in the workplace refers to the expectation that one's decisions or actions will be evaluated by a more powerful actor who can then determine one's rewards or punishments (Hall, Frink, & Buckley, 2017). Employees who were accountable to supervisors were more likely to pay attention to the needs of the members of their work teams, and be less biased toward lower status individuals, compared to those who were not accountable (Fandt, 1991; Ford, Gambino, Mayo, & Ferguson, 2004). Clear and consistent accountability guidelines are also associated with less verbal abuse and sexual harassment (Fredericksen & McCorkle, 2013; Maass et al., 2013; O'Leary-Kelly et al., 2000).

Pay Clarity Interventions at the Management Level May Improve Worker Outcomes

Interventions to improve pay clarity may require managers and supervisors to reconsider their perceptions of workers and heighten the sense of accountability. Making pay calculations more intentional requires seeing workers as individuals with unique skills and experience; otherwise, managers may negatively stereotype or objectify workers (Gruenfeld, Inesi, Magee, & Galinsky, 2008; Overbeck & Park, 2006). When managers and supervisors consider the skills that have been developed by their different workers to determine pay rates, this not only leads to individuation of workers but also to an appreciation of their capacities, helping those in charge to see workers as assets to the company and not merely costs. Furthermore, in determining how to best communicate the wage structure, efforts to increase pay clarity require managers to take the perspective of their workers and think through work from their point of view. Altogether, these components may contribute to greater accountability, a stronger sense of organizational justice, and a more benevolent sense of responsibility felt by management toward workers (Ambrose & Schminke, 2009; Tost & Johnson, 2019).

Overview of Current Research

We examined the role of both financial literacy and pay clarity in work experiences. Study 1 examined the contribution of financial practices by assessing the outcomes of a financial literacy training program for female workers in India and Bangladesh. Study 2 examined the contribution of pay clarity by examining the effects of a human resources management intervention in Myanmar.

We employed a multilevel mediation model to capture the impact of training and the channels through which treatment has its effect. The full specification of each study is presented below. We conducted tests of both the underlying theory of the program and the impact of the treatment.

Study 1

Method

We conducted a randomized controlled trial of the "Women in Factories" training program in seven factories in Bangladesh and seven factories in India with support from the Walmart Foundation. All of the factories were medium or large firms privately owned by Bangladeshi or Indian nationals and most, though not all, operated in the apparel sector. These factories were chosen because they had not yet begun the training program but had expressed an intent to do so within the time frame of our research. The delivery partners (Swasti in India and CARE

<table>
<tr><td rowspan="2">Baseline data collection</td><td>Group 1 - treatment</td><td rowspan="2">Midline data collection</td><td>Group 1 - no treatment</td><td rowspan="2">Endline data collection</td><td rowspan="2">Endline data collection 2 (Study 2 only)</td></tr>
<tr><td>Group 2 - no treatment</td><td>Group 2 - treatment</td></tr>
</table>

Fig 1. Timeline for studies 1 and 2.

in Bangladesh) provided the research team with a list of participants selected to take the advanced training. For each factory, participants were randomly assigned to one of two treatment batches. Batch 1 workers went through the training before Batch 2 workers, providing an opportunity to measure the initial effect of the training, and the delayed effect (i.e., curing or decay of the treatment effect) in the months after treatment (see Figure 1).

Participants. The majority of respondents were between 18 and 30 years old, and worked predominantly as line operators in apparel factories, working to assemble garments. Although the program was designed and intended for women, in some factories, a few men (comprising less than 2% of the sample) also participated in these advanced training sessions and their data are included below (excluding them did not alter conclusions).

Data collection took place between January 2015 and January 2017. Surveys were administered on certain days at each factory and those who were absent on one survey day may still have participated on the other days. The study began with a baseline survey (female = 1,068, male = 17) of both batches of workers. After the baseline, the first batch of workers received training over the period of a few months, after which both batches of workers were resurveyed (female = 958, male = 20). Following the midline survey, the second batch of workers was trained. The study concluded with an endline survey of both batches (female = 799, male = 12). These numbers would allow us to detect an effect size of $f = 0.20$ with 99% achieved power.

Training materials. Training was provided by CARE in Bangladesh and by Swasti in India, and both organizations participated in the development of the content as well as its implementation. All factory employees began with a foundational training program consisting of 8–12 hours of sessions related to hygiene, reproductive health, occupational health and safety, and gender bias. Women who excelled in the foundational training were invited to take part in the advanced training, a 99-hour course focusing on the development of leadership skills, communication, nutrition, gender, social status, relationships, and, of particular interest for these analyses, personal finance (complete materials are available on the Walmart Foundation website).

The personal finance module took place over several sessions. Training throughout the module involved scenarios, games, and practice calculations. Beginning with basic literacy and numeracy, such as having participants recognize numbers, the training then moved into basic calculations. Examples for these calculations were drawn from work experiences that involved production quotas, pay rates, and work hours, such as: "Seema worked 12 hours of overtime this week. Her overtime wage is 13 taka per hour. How much did she earn in overtime this week?" Following these sessions, workers were taught to compare pay to anticipated expenses, prioritize expenses, and anticipate possible emergency expenses. Workers were next led through an exercise in which they established financial goals, calculated savings required to achieve those goals, and discussed appropriate places to save money for the future. As an example, in the latter case, facilitators guided workers through a discussion about the different options, both formal and informal, for saving/borrowing money or obtaining credit in their respective communities and discussed the pros and cons of each.

Procedure. The surveys were conducted during normal work hours in a separate area or room in the factories, where multiple workers could sit and complete the survey at the same time. A local research partner administered the survey. Members of the research team were trained to keep supervisors and managers out of the room and to provide help to workers as needed without influencing their responses on the survey questions. Surveys were designed in English, translated into the languages spoken by workers in our sample (i.e., Bengali, Gujarati, Hindi, Kannada, and Tamil), and backtranslated into English for confirmation. They were then recorded by native speakers of each language and checked for accuracy. Audio clips were edited and aligned with the instruction, question, and response option text displayed on the tablet computer to allow for comfortable use of the surveys for respondents at any literacy level.

Participants completed the survey using touchscreen tablet computers with headphones and were able to replay the audio as needed. Participants first completed a few exercises as a training in how to use the tablets to input their responses before the consent form was displayed on the tablet and their response was requested. After providing consent, participants were able to go on to complete the survey. The full survey included measures relevant to assessing other goals of the "Women in Factories" training program (e.g., nutrition, communication skills, conflict with supervisors) but which are not analyzed here. Because the survey covered several topics, and we were concerned that an overly long survey would burden both the factory and the workers, we used both scales and single-item measures. Past research in workplaces shows that single-item measures can have acceptable reliability and validity (Elo, Leppänen, & Jahkola, 2003; Wanous & Reichers, 1996; Wanous, Reichers, & Hudy, 1997). Workers were compensated

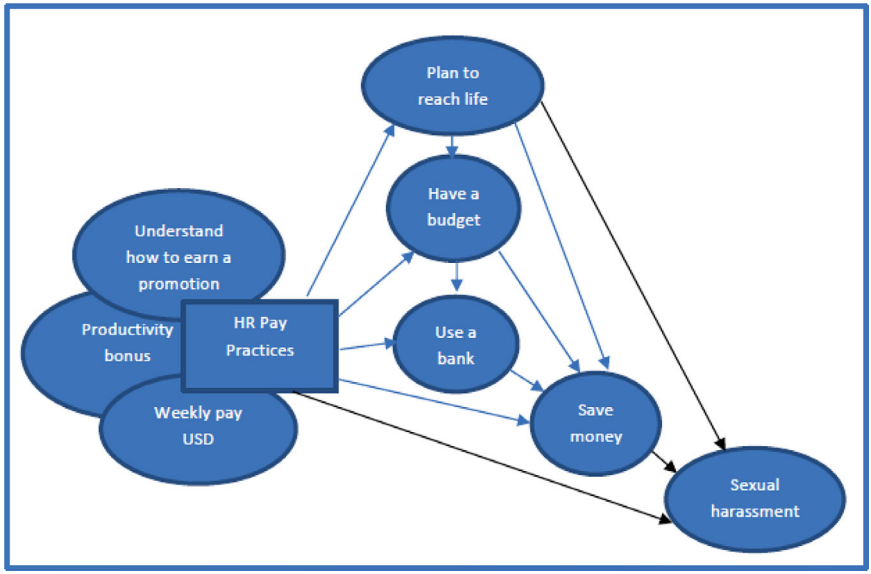

Fig 2. Study 1 theoretical model financial literacy.
Note. Blue directional arrows indicate positive relationships and black arrows indicate negative relationships. Treatment variables, demographic controls, time controls, and factory fixed effects enter every equation.
[Color figure can be viewed at wileyonlinelibrary.com]

for their time by the factories at their typical hourly rate; the average duration of the survey was less than 1 hour.

Theoretical model. The specification of Study 1 is depicted in Figure 2. Study 1 began with an intervention that included financial literacy training. The treatment variables, demographic characteristics, time controls, and factory fixed effects are exogenous variables and were assumed to affect every endogenous variable in the model.

The theoretical variables were all endogenous. The intervention was first assumed to improve worker perceptions of human resource management practices in the factory including promotion opportunities, weekly pay, and the productivity bonus. Because pay and promotion opportunities affect every decision workers make, worker perceptions of HR practices were included as explanatory variables for all other theoretical variables in the model.

The theory of the program was that financial planning begins with setting life goals and developing a plan for their realization. Having a plan for realizing life goals then motivates a worker to use newly learned financial planning tools. A worker with life goals is modeled as forming a budget, which, in turn, increases

use of a bank. Having a plan for realizing life goals, having a budget, and using a bank then determine whether a worker is saving money.

We next considered whether financial literacy was reducing vulnerability to sexual harassment. There are multiple channels through which literacy training theoretically reduces sexual harassment, all related to precarious employment and financial uncertainty. Vulnerability is reduced when workers know how to earn a promotion and are earning a living wage. Vulnerability is also reduced when take-home pay is dependable. In the context of a factory, workers can most easily predict pay when it is largely determined by work hours and is not dependent on earning a production bonus. Financial security is further enhanced when a worker has successfully accumulated savings. Finally, we also theorized that a worker who has a plan to realize life goals is more resilient.

Measures. The theoretical variables were measured using the following items. Knowledge of the procedure for obtaining a promotion (*Understand promotion*) was measured by responses to the statement, "I understand how to earn a promotion," with responses from 1 (*strongly disagree*) to 5 (*strongly agree*). The practice of setting life goals (*Life goals*) was measured by responses to the item, "I have a plan for reaching specific life goals," with a response scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Financial skills variables (*Budget, Use bank*) were measured by participant responses to the questions, "Do you ever use a budget to plan how to spend your money?" with responses from 1 (*never*) to 5 (*always*) and "Do you save any of your money in a bank?" with responses *yes* or *no*. The ultimate object of financial literacy is to increase savings (*save money*). Participants were asked about their family's ability to save in the past month, with response options ranging from 1 (*saved money*), 2 *(spent everything they earned*), 3 (*spent some savings*), or 4 (*had to borrow money*). The *save money* variable was reverse-coded so that higher values indicate greater savings. Sexual harassment was measured with the item, "Do any of the supervisors, managers, or other workers ever talk to you or touch you in a sexual way?" with possible responses ranging from 1 (*no, never*) to 4 (*yes, often*).

Participants were also asked how often they were paid, how much money they received the last time they were paid, the days of the week they usually worked, and start and stop times on regular work days. The responses on work hours were used to calculate the number of hours usually worked per week and the responses concerning pay were used to construct an indicator of weekly pay (*Weekly pay USD*) measured in U.S. dollars. Participants were also asked whether they received a productivity bonus (*Productivity bonus USD*) the last time they were paid. Those who reported receiving a productivity bonus were asked to indicate the amount.

The effect of training was measured using dummy codes for training just received and for training received some months previously. Participants who

received their training just before a given data collection were coded as "just trained" in the dataset, that is, participants in Batch 1 at the midline and Batch 2 at the endline. If at least one data collection had elapsed since their training, that is, participants who were trained in Batch 1 at the endline, they were coded as having been "trained long ago." Demographic controls included the marital status of the worker, whether they were head of their household, their work experience, age, education, and country (India or Bangladesh). The full regression model also controlled for the passage of time as a factor beyond the training by including binary variables for the midline and endline timepoints.

Statistical analysis plan. The statistical analysis was conducted to achieve three objectives. The first was to determine whether there was a net treatment effect on each of the theoretical variables. We tested whether, on balance, treatment helped workers learn how to earn a promotion, develop a plan for achieving life goals, formalize household budgeting, use a bank, increase savings, and/or experience less sexual harassment. The second objective was to characterize the statistically significant causal chain from intervening variables, such as whether participants used a bank, to worker outcome variables, such as whether participants increased savings or experienced reduced sexual harassment. The third objective was to determine whether training acted directly on outcome variables or activated the channels from the intervening variables to the outcome variables. That is, did training only change worker outcomes directly targeted by the program or did it lead to changes in the intervening variables that affect worker outcomes such as abuse at work?

Our analysis began with single equation regression analysis to measure the net (i.e., reduced form) effect of training on each of the variables in the theoretical model. The purpose of estimating the reduced form was to determine which intervening and outcomes variables in the theoretical model were, on balance, affected by training. A linear panel estimator was used to detect changes in individual responses over time depending on treatment exposure at the time of data collection. For each outcome variable, we conducted a Hausman test to determine whether a fixed or random effects estimator was more appropriate. The error term was assumed to be correlated across workers within a factory. Therefore, standard errors were clustered by factory.

We then used simultaneous equation modeling (SEM) to estimate the system depicted in Figure 2 to determine the causal path of treatment. Treatment effects and channels were captured with a multilevel mediation model to determine which treatment effects identified in the reduced form were the result of a direct effect of training and which were mediated by other variables. A causal path for training was indicated when the treatment variables were significant for an outcome variable in the reduced form but were no longer significant once the intervening variables were introduced in a system.

SEM also identifies causal relationships from intervening variables to outcomes that may not be affected by training. Such situations identify paths through which the training could have had an impact but the training failed for some reason to activate the causal channel.

Random errors were assumed to be correlated within a factory, so standard errors were clustered at the factory level. Regression equations included time and factory fixed effects. The model was estimated using a maximum likelihood estimator. The model structure was recursive, eliminating concerns with identification.

Results and Discussion

Reduced-form results. Reduced-form estimation of treatment effects for Study 1 are presented in Table 1. We found reduced form treatment effects for most of the variables in the theoretical model. Financial literacy training led workers to report a better understanding of how to get a promotion in the factory (column (1)). At the baseline, workers' rating of their understanding of how to get a promotion averaged 3.85 on a five-point scale. The mean rose by an estimated 0.12 immediately after training, $p = .048$, and by 0.20 several months after training, $p < .001$.

Participants also increased the frequency with which they made a household budget (column (3)) just after the training ($b = 0.34$, $p = .061$) and several months after training ($b = 0.41$, $p = .050$), use a bank (column (4)) both immediately after training ($b = 0.09$, $p < .001$) and several months afterward ($b = 0.08$, $p = .016$) and save money (column (5)) immediately after training ($b = 0.16$, $p = .020$) and several months after training ($b = 0.18$, $p = .046$). The treatment effect on using a bank was particularly pronounced. At the baseline, 27.2% of workers did not use a bank. The figure declined by nine percentage points just after training, an effect that persisted to the end of the study.

We did not detect a reduced-form treatment effect on sexual harassment, nor did training affect total pay or hours. However, training did reduce productivity bonuses (column (8)). The average productivity bonus in each pay period at the baseline was \$15.19, which declined by \$5.44 just after training, $p = .014$, and by \$6.99 in the months after training, $p = .001$. This final treatment effect on productivity bonuses is particularly important. Training did not affect the number of hours worked or total pay, but the fraction of total pay attributed to bonus pay declined. As a consequence, workers had more certainty about pay.

Attrition bias. Workforce turnover in apparel factories typically varies between 1% and 12% per month. As a consequence, we experienced some attrition between the baseline, midline, and endline. To determine whether attrition was biasing the results, we first tested to see whether workers who remained in the

Table 1. Effects of Financial Literacy Training (Study 1) Reduced Form Estimation Theoretical Variables

VARIABLES	(1) Understand Promotion	(2) Life goals	(3) Budget	(4) Use Bank	(5) Save Money	(6) Weekly Pay USD	(7) Weekly Hours	(8) Productivity Bonus USD	(9) Sexual Harassment
Just	0.120*	0.0578	0.338	0.0897***	0.164*	0.387	−0.0381	−5.443*	−0.0502
Trained	(0.0608)	(0.0585)	(0.165)	(0.0134)	(0.0706)	(0.360)	(0.746)	(1.926)	(0.0448)
Trained	0.202***	0.0905	0.414*	0.0841*	0.182*	−0.258	−0.435	−6.991***	0.00471
Long ago	(0.0530)	(0.0791)	(0.192)	(0.0348)	(0.0915)	(0.797)	(1.407)	(1.655)	(0.0702)
Constant	3.886***	4.090***	3.737***	0.624***	2.898***	23.25***	41.38***	6.609	1.539***
	(0.193)	(0.153)	(0.370)	(0.0717)	(0.196)	(1.734)	(4.282)	(5.634)	(0.251)
Fixed/Random	RE	RE	FE	RE	RE	FE	RE	FE	FE
Treatment Effects									
Observations	2,554	2,682	2,732	2,742	2,701	2,013	2,734	2,602	2,734
R^2			0.066			0.043		0.094	0.023
Number of participants	1,402	1,441	1,451	1,452	1,442	1,174	1,454	1,425	1,452

Note. Unstandardized coefficients are reported, with robust standard errors in parentheses.
*$p < .05$.
**$p < .01$.
***$p < .001$.
Demographic controls, time fixed effects, standard errors clustered by factory.

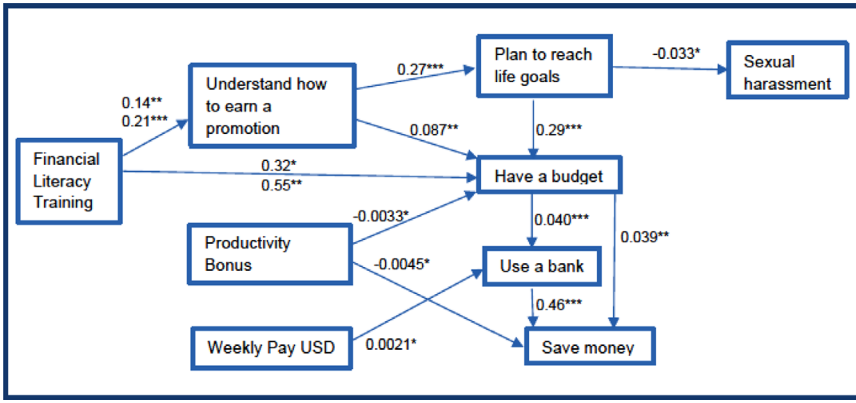

Fig 3. Study 1 estimated SEM financial literacy.
Note. Numbers along the directional arrows are the estimated unstandardized coefficients. Financial Literacy is the exogenous treatment variable and has two estimated treatment effects, the first for just after treatment and the second for months after treatment.
[Color figure can be viewed at wileyonlinelibrary.com]

study at the midline and the endline were statistically different from the population in the baseline. In terms of the demographic control variables, we found that workers who remained in the study were more likely to be married, experienced, fulltime, older, productive, but less educated.

However, in terms of the theoretical variables, the only significant difference between workers who remained in the study and those who left was that the workers who remained in the study were less likely to save money. We then estimated the reduced form of the saved money equation as a balanced panel, using only those participants who remained in the study to the endline. The treatment effects were qualitatively similar though slightly stronger in the balanced panel as compared to the unbalanced panel. The estimated coefficients in the unbalanced panel were $b_{just\ treated} = 0.16$ ($p = .020$) and $b_{\text{treated long ago}} = 0.19$, $p = .046$, from a sample of 2,701 observations with 1,442 groups. The estimated treatment effects in the balanced panel were $b_{just\ treated} = 0.23$, $p < .001$, and $b_{\text{treated long ago}} = 0.28$, $p = .004$, from a sample with 1,360 observations and 496 groups.

Structural analyses. SEM analysis provided empirical support for elements of our theoretical model. Estimates of the statistically significant relationships are depicted in Figure 3. Findings are reported in Table 2. As can be seen in column (4), understanding how to earn a promotion increased the probability with which a participant developed a plan to realize life goals, $b = 0.27$, $p < .001$. In column (5), understanding how to earn a promotion, $b = 0.087$, $p = .005$, and making a plan to reach life goals, $b = 0.29$, $p < .001$, increased the probability that a family

Table 2. Effects of Financial Literacy Training (Study 1) Structural Estimation

VARIABLES	(1) Understand promotion	(2) Productivity bonus USD	(3) Weekly pay USD	(4) Life goals	(5) Budget	(6) Use bank	(7) Save money	(8) Sexual harassment
Understand				0.274***	0.0874**	0.00629	−0.0201	0.00430
promotion				(0.0299)	(0.0311)	(0.0104)	(0.0273)	(0.0124)
Life					0.293***		0.0119	−0.0325*
Goals					(0.0484)		(0.0221)	(0.0169)
Budget						0.0402***	0.0386**	
						(0.00978)	(0.0123)	
Use bank							0.462***	
							(0.0445)	
Save								−0.0214
Money								(0.0150)
Productivity				7.30e-05	−0.00330*	0.000597	−0.00446*	0.000925
Bonus USD				(0.00165)	(0.00170)	(0.000715)	(0.00194)	(0.00105)
Weekly				0.00248	0.00645	0.00208*	0.00939	−0.000625
Pay USD				(0.00293)	(0.00540)	(0.000918)	(0.00494)	(0.00135)
just	0.138**	−2.456	−0.103	0.0318	0.320*	0.0908***	0.0930	−0.0216
Trained	(0.0531)	(1.733)	(0.413)	(0.0677)	(0.155)	(0.0167)	(0.0596)	(0.0226)
Trained	0.213***	−1.009	−0.152	0.0744	0.552**	0.0772	0.165	−0.0411
Long ago	(0.0539)	(2.022)	(0.586)	(0.0839)	(0.201)	(0.0565)	(0.116)	(0.0362)

Continued

Table 2. Continued

VARIABLES	(1) Understand promotion	(2) Productivity bonus USD	(3) Weekly pay USD	(4) Life goals	(5) Budget	(6) Use bank	(7) Save money	(8) Sexual harassment
Constant	3.754***	6.854**	20.30***	2.831***	1.176***	0.512***	2.323***	1.421***
	(0.197)	(2.347)	(1.400)	(0.267)	(0.340)	(0.122)	(0.157)	(0.107)
Observations	2,767	2,767	2,767	2,767	2,767	2,767	2,767	2,767

Note. Unstandardized coefficients are reported, with robust standard errors in parentheses.
*$p < .05$.
**$p < .01$.
***$p < .001$.
Demographic controls, time and factory fixed effects, standard errors clustered by factory.

formed a budget. Household budgeting then increased the use of a bank (column 6), $b = 0.040$, $p < .001$. The ultimate effect on savings can be seen in column (7). Having a budget, $b = 0.039$, $p = .002$, and using a bank, $b = 0.46$, $p < .001$, promoted savings.

The level and composition of pay are also contributing variables to the causal chain. The larger the fraction of income attributable to a productivity bonus, the less likely a family was to engage in formal household budgeting, as can be seen in column (5), $b = -0.0033$, $p = .050$. Note also that savings was reduced when pay was received in the form of a bonus, as can be seen in column (7), $b = -0.0045$, $p = .021$. These results indicate that bonus pay is disruptive to a family's financial practices. The larger the fraction of pay received in the form of a bonus, the less likely a participant was to save money. The level of pay affected only whether a family used a bank, as can be seen in column (6). The greater the weekly pay, the higher the probability of using a bank, $b = 0.0021$, $p = .024$.

There are elements of the theory though that were not supported by the empirical findings. Neither increased savings nor pay practices affected sexual talking and touching, as can be seen in column (8). Sexual harassment was reduced only when a worker had a plan to reach life goals, $b = -0.032$, $p = .050$.

Next, we turned to treatment effects. As in the reduced form, training increased participant understanding of how to get a promotion (see column (1)), $b = 0.14$, $p = .009$, an effect that cured over time, $b = 0.21$, $p < .001$. However, there were no statistically significant treatment effects on pay composition (column (2)) or pay level (column (3)) in the SEM.

Turning to the use of formal budgeting, understanding how to earn a promotion did not fully mediate the treatment effect on budgeting. Training workers specifically on how to write a budget had a direct treatment effect both right after training, $b = 0.32$, $p = .039$, and in the months after training, $b = 0.55$, $p = .006$, as can be seen in column (5). This result indicates that understanding how to earn a promotion and having a plan for reaching life goals increased a worker's belief that household budgeting was useful. However, changing the lives of workers in a way that made them appreciate the importance of budgeting was not the only mechanism through which the program had its effect. Providing workers directly with budgeting skills was also important. A direct treatment effect also emerged for using a bank immediately after training ($b = 0.091$, $p < .001$), even in the presence of the intervening variables. It is only in saving money that the treatment effect is fully mediated by financial literacy skills, knowing how to make a budget and use a bank. These results clearly indicate the importance of training workers on specific financial skills that develop the behaviors that promote savings.

Finally, we examined points where the treatment might have had an effect but the training failed to activate the causal channel. There were two channels for treatment that might have reduced sexual harassment, but both broke

down, *albeit* at different points. First, our theoretical model hypothesized that sexual harassment would be reduced if workers had more financial security in the form of savings. As discussed above, we observed a strong treatment channel from increased understanding of how to earn a promotion through to increased savings. However, the causal path stopped when increased savings did not, in turn, reduce sexual harassment. Second, in our theoretical model, we hypothesized that workers who understood how to earn a promotion would be more likely to have a plan to reach life goals and these two factors would reduce vulnerability to sexual harassment. The empirical evidence confirms this causal chain. A treatment effect was initiated at understanding how to earn a promotion. Further, there was a channel from understanding how to earn a promotion through planning for life goals to sexual harassment. Recall, however, that we did not observe a reduced-form treatment effect on either having a plan to reach life goals or sexual harassment. The treatment effect on understanding how to earn a promotion was not strong enough to affect either life goals or sexual harassment.

Our conclusion from Study 1 then is that the training was successful in helping workers learn how to earn a promotion, and boosted workers' effort to practice financial planning by providing specific skills on budgeting and banking, both in the short term and in the long term. These financial literacy skills, in turn, increased savings. It is important to note that an increase in savings was accomplished without increasing work hours or total pay, indicating the program achieved benefits for workers in the form of enhanced savings behavior due to knowledge rather than increased income.

An additional interesting aspect of the training is that it was associated with a shift in pay away from production incentives toward hourly compensation. Reducing the fraction of pay that was earned through production bonuses reduced pay uncertainty and increased the ability of a family to engage in household budgeting.

However, the training was ultimately not successful in reducing sexual harassment. Teaching workers how to earn a promotion and basic financial skills culminated in increased savings, but savings did not contribute to determining sexual harassment. Nor do pay practices appear to determine sexual harassment. Rather sexual harassment appears to be primarily determined by whether the worker has a plan to realize life goals. Yet, the training did not act on the life goals channel. Thus, financial literacy and independence itself did not reduce sexual harassment in the workplace.

The success of financial literacy training in promoting savings but its failure in reducing sexual harassment raises the important question as to whether interventions empowering workers are adequate to the task of controlling abusive treatment at work. Study 1 focused on training individual workers in skills intended to improve worker outcomes. In Study 2, we explored whether a factory-level

intervention and its consequences on workers' perceptions of pay clarity reduce workplace abuse.

Study 2

Method

We conducted a randomized controlled field experiment in Myanmar to measure the effects of a human resource management systems intervention carried out by the Business Innovation Facility with support from the UK Department for International Development. As in Study 1, we surveyed supervisors and workers in batches at multiple time points to determine the effects of the intervention.

Participants. Our sample consisted of 14 Myanmar apparel factories, which included all the factories that underwent the intervention except for the two factories where the program was piloted. Most of the participating factories had local, Chinese, or Korean ownership and were located in several different industrial zones. The factories were randomly assigned to one of two treatment batches (see Figure 1). The study began with baseline data collection from January to May 2015, followed by treatment in Batch 1 factories from May 2015 to February 2016. A midline data collection was conducted from February to March 2016, followed by treatment in Batch 2 factories from March 2016 to March 2017. Two posttreatment data collections were conducted, the first in March 2017 right after treatment of Batch 2, and the second endline in December 2017.

At each data collection round, workers and supervisors were surveyed. About 95% of the workers were female, with a median age of workers between 21 and 25 years old, and they predominantly worked as line operators in garment factories. About 90% of the supervisors in the factories were female, and their median age was between 31 and 35 years old. A total of 429 people completed the baseline survey (318 female workers, 18 male workers; 83 female supervisors, 10 male supervisors). The midline survey was completed by 354 people (265 female workers, 10 male workers; 70 female supervisors, 9 male supervisors). The first endline survey had 252 responses (189 female workers, 6 male workers; 52 female supervisors, 5 male supervisors) and the second endline survey had 148 responses (100 female workers, 7 male workers; 37 female supervisors and 4 male supervisors). The statistical power thus achieved would allow us to detect an effect size of $f = 0.20$ at 70% power at the first endline survey but around 40% power at the second endline survey.

Training materials. The treatment had three main components. First, an industrial engineer helped the factory implement line design elements intended to increase productivity. Second, factory managers were taught to use

spreadsheets to track firm performance, including absenteeism, turnover, and productivity. Third, the human resources (HR) manager received training on topics including the induction system, leave practices, production, pay practices, job descriptions, training, and communication.

Especially relevant to our theoretical question, the pay practices component of the intervention included training on pay clarity. HR managers went through an interactive process to learn about the role of wages in creating a balance between benefits to the workers and benefits to the company. They were provided strategies to structure pay to achieve organizational objectives: using pay to recognize skill, to reward effort, and to encourage worker loyalty to the organization. In this context, HR manager training included the message that workers are assets who should be encouraged to stay at the factory, rather than costs or liabilities whose wages reduce the factory's profits. The intervention also involved having managers analyze their existing wage structure for clarity from the perspective of the workers and solicit feedback from workers about pay understanding. The training emphasized the importance of clearly communicating the relationship between pay and effort and ensuring that the structure of wages was not confusing.

Procedure. The procedure was similar to that of Study 1 with workers and supervisors surveyed in Burmese. Two endline data collections were conducted: one just after the program ended and a second 8 months after the end of the program.

Theoretical model. Our theoretical structure is depicted in Figure 4. Treatment is assumed to first affect the clarity with which workers understand how their pay was calculated. Pay clarity, in turn, determines verbal abuse. Verbal abuse is also affected by the social context including perceived social norms regulating verbal abuse and the extent to which supervisors see workers in dehumanized terms, feel accountable for their decisions, and are under cognitive load.

Verbal abuse, in turn, determines sexual harassment, as female supervisors heighten the intensity of verbal abuse by using language that attacks the sexual identity and behavior of subordinates. The model suggests that sexual harassment is also determined by the social context variables, dehumanization, supervisor accountability, cognitive load, and supervisor perceptions of organizational tolerance for sexual harassment.

The endogenous variables are pay clarity, verbal abuse, and sexual harassment as perceived by workers. The treatment variables, demographic controls, time controls, and factory fixed effects are exogenous variables and appear in every equation. Supervisor perceptions of accountability, dehumanization, organizational tolerance, and cognitive load are also taken as exogenous by workers.

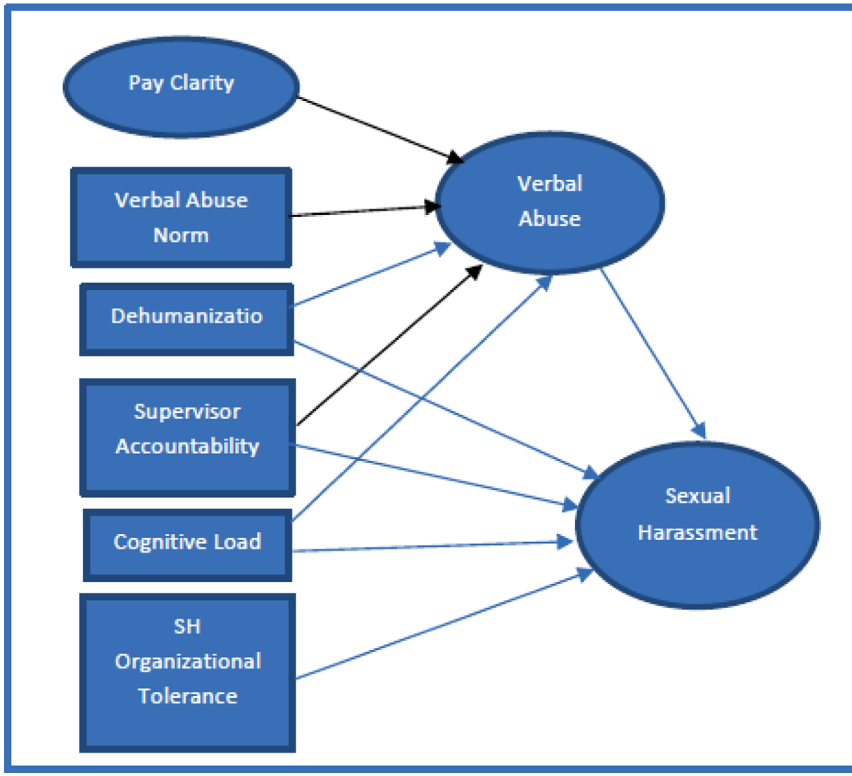

Fig 4. Study 2 theoretical model pay clarity.
Note. Blue directional arrows indicate positive relationships and black arrows indicate negative relationships. Treatment variables, demographic controls, time controls, and factory fixed effects enter every equation.
[Color figure can be viewed at wileyonlinelibrary.com]

Measures. Pay clarity was measured by five items about workers' experiences with pay practices: "I trust the factory to pay me the money I have earned," "There is a clear link between how much work I do and how much I am paid," and "I understand how my pay is calculated" on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*), one reverse-scored item "How often does the amount you are paid seem confusing or unfair?" on a scale from 1 (*never*) to 5 (*all of the time*) and one item "If you had a question about how your pay was calculated, how comfortable would you be asking for help?" on a scale from 1 (*very uncomfortable*) to 4 (*very comfortable*). These items were standardized and combined to form a scale (Cronbach's $\alpha = .65$).

Workers also reported experiences with verbal abuse and sexual harassment. Sexual harassment was measured by a question asking workers how often

supervisors or managers talked to them or touched them in a sexual way, on a scale from 1 (*never*) to 5 (*all of the time*). Verbal abuse was measured by how often the supervisor yelled to make workers work faster or for making a mistake, using the same frequency scale. Although these two items were significantly correlated, $r = .17$, $p < .001$, we analyzed them separately for theoretical purposes.

The social context was measured based on survey responses from factory supervisors. Factory-level measures were then constructed by averaging responses across supervisors within a factory. Three items were intended to measure accountability (*Review*, *Reward Punish*, *Unfair*): "My evaluations of workers are sometimes reviewed by managers," "I'm not accountable to others when I decide how to treat, reward, or punish workers" (reverse-scored), and "If I evaluated a worker unfairly, a manager would probably find out" on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*). The alpha for accountability (.21) indicated a low level of internal consistency. Thus, these items were retained individually and not aggregated into a scale.

Organizational tolerance for sexual harassment was assessed through three items (*Org Tol SH 1, Org Tol SH 2*, *Org Tol SH 3*) adapted from the Organizational Tolerance of Sexual Harassment Inventory (Hulin, Fitzgerald, & Drasgow, 1995): Supervisors were asked to "imagine that a supervisor in your factory has said that he can make things very difficult for a female worker by withholding pay and treating her badly unless she has sex with him." Following this scenario, supervisors were asked to what extent they agreed, "It would be extremely risky for her to make a formal complaint against him," "There is a very good chance she would be taken seriously if she made a formal complaint" (reverse-scored), and "There would be very serious consequences for him if she made a formal complaint" on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*). These items did not form a coherent construct (Cronbach's $\alpha = .24$), and thus, were retained individually.

An eight-item scale for dehumanization ($\alpha = .54$), a three-item scale of verbal abuse norms ($\alpha = .84$), and a four-item scale of cognitive load (adapted from Ng, Ang, & Chan, 2008; $\alpha = .58$) were also included. For more details on those, please refer to the authors.

Training was measured using dummy codes for training just received, for training received some months previously (first endline), and training received a year previously (second endline). Participants who received their training before a given data collection were coded as just trained at that time point (i.e., Batch 1 workers at the midline and Batch 2 workers at the endline). Participants who received their training several months previously were coded as trained long ago (i.e., participants who were trained in Batch 1 were coded as having been trained long ago at the first endline and participants who were trained in Batch 2 were coded as having been trained long ago at the second endline). Finally, at the second endline, participants in Batch 1 were coded as having been trained long ago.

Table 3. Effects of Pay Clarity (Study 2) Reduced form Worker Variables

VARIABLES	(1) Pay clarity	(2) Verbal abuse	(3) Sexual harassment
Just treated	0.299	−0.136	0.0298
	(0.159)	(0.248)	(0.113)
Treated long ago	0.978**	−0.220	−0.0267
	(0.267)	(0.394)	(0.155)
Treated long long ago	1.391**	−0.400	−0.214
	(0.404)	(0.492)	(0.217)
Constant	−0.505	2.101**	1.813***
	(0.341)	(0.629)	(0.348)
N	897	866	827
R^2	0.078	0.040	0.041
Worker Random/Fixed Effects	FE	FE	FE
Number of uniqueID	501	495	479

Note. Unstandardized coefficients are reported, with robust standard errors in parentheses. $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$. Demographic controls, time and factory fixed effects, standard errors clustered by factory.
$^{*}p < .05$.
$^{**}p < .01$.
$^{***}p < .001$.

Statistical analysis plan. As with Study 1, we conducted preliminary analyses to determine whether there was a net treatment effect on each of the variables in the model. A multilevel mediation SEM analysis was then used to determine the structural relationship among theoretical variables and the causal channel through which treatment had its effect. For the reduced form analysis, a linear panel estimator measured changes in individual responses over time depending on treatment exposure at the time of data collection. Standard errors were clustered by factory. A Hausman test indicated that, for all theoretical variables, a fixed effects specification was indicated. The full SEM was estimated using a maximum likelihood estimator with worker characteristics including marital status of the worker, age, and education, and factory and time fixed effects. Standard errors are clustered by factory.

Results and Discussion

Worker reduced-form results. We first considered the impact of training on worker perceptions. Treatment effects for the aggregate standardized measure of pay clarity are reported in column (1) of Table 3. Workers reported greater pay clarity in the months after training, $b = 0.98$, $p = .003$, an effect which cured over time, $b = 1.39$, $p = .004$. The treatment effects were large in comparison to

Study 1. Recall that the pay clarity measure was standardized, so the overall average was zero. The estimated treatment effect then increased pay clarity by about one standard deviation in the months after treatment and even more by the time the study ended. However, we did not detect reduced-form treatment effects on either verbal abuse or sexual harassment as can be seen in columns (2) and (3).

Supervisor reduced-form results. Turning to supervisors, the intervention had a strong effect on one measure of accountability and one measure of organizational tolerance for sexual harassment, as reported in Table 4. Many months after training, supervisors were more likely to believe that their decisions concerning rewards and punishments would be reviewed by managers, as can be seen in column (2), $b = 2.11$, $p = .016$. However, curiously, supervisors reported greater organizational tolerance for sexual harassment on one of our measures just after training, $b = 1.03$, $p = .049$, and several months after training, $b = 2.69$, $p = .037$, as reported in column (6). Supervisors were less likely to believe that worker complaints of sexual harassment would be taken seriously after treatment.

Attrition bias. As noted with Study 1, the high level of workforce turnover in apparel factories contributed to potential attrition bias in the sample. To determine whether attrition was biasing the results, we first tested to see whether workers who remained in the study at the midline, the first endline, and the second endline were statistically different from the population in the baseline. In terms of the demographic control variables, we found only that workers in the baseline who remained through the second endline reported higher education. We found no attrition bias in the dependent variables.

Structural analyses. We then tested for the contributions of pay clarity, accountability, organizational tolerance for sexual harassment, cognitive load, verbal abuse social norms, and dehumanization to verbal abuse and sexual harassment. Results are reported in Table 5 and depicted in Figure 5.

As with Study 1, we first used the SEM results to test the theoretical model. As our theory predicted, verbal abuse was significantly reduced when workers understood how pay was determined, as can be seen in column (2), $b = -0.26$, $p < .001$. This result underscores one of the key values of pay clarity—when workers know how their efforts are linked to their pay, they are able to use their time and energy more effectively and supervisors are less likely to use verbal abuse to try to goad workers into being more productive. However, contrary to theory, indicators of accountability, dehumanization, verbal abuse norms, and cognitive load were not significant determinants of verbal abuse in this sample.

In contrast, we identified a wider set of statistically significant predictors of sexual harassment, as reported in column (3). First, verbal abuse was a significant contributor to worker perceptions of sexual harassment, $b = 0.060$, $p = .012$.

Table 4. Effects of Pay Clarity (Study 2) Reduced form Supervisor Variables

VARIABLES	(1) Review	(2) Reward Punish	(3) Unfair	(4) VA social Norms	(5) Org Tol SH 1	(6) Org Tol SH 2	(7) Org Tol SH 3	(8) Cognitive Load	(9) Dehumanization
Just	−0.00144	0.265	0.0285	−0.320	−0.0486	1.027*	0.338	0.0202	0.0915
Treated	(0.151)	(0.351)	(0.259)	(0.295)	(0.392)	(0.473)	(0.540)	(0.128)	(0.152)
Treated	−0.169	1.305	−0.322	0.111	0.926	1.284	0.942	−0.0538	0.229
Long ago	(0.277)	(0.648)	(0.387)	(0.618)	(0.442)	(1.020)	(0.964)	(0.220)	(0.305)
Treated long	−0.474	2.112*	−0.576	0.284	0.824	2.689*	0.885	−0.360	0.0748
Long ago	(0.386)	(0.766)	(0.612)	(0.864)	(0.879)	(1.159)	(1.278)	(0.315)	(0.434)
Constant	3.755***	3.202***	3.749***	2.436***	2.398***	2.592***	2.470***	2.463***	2.575***
	(0.0418)	(0.0802)	(0.0714)	(0.0947)	(0.0615)	(0.151)	(0.162)	(0.0422)	(0.0440)
N	254	232	249	248	214	214	212	223	227
R^2	0.026	0.090	0.032	0.081	0.070	0.105	0.025	0.046	0.038
Number of Unique ID	119	113	117	119	105	108	108	107	110

Note. Unstandardized coefficients are reported, with robust standard errors in parentheses.
*$p < .05$.
**$p < .01$.
***$p < .001$.
Demographic controls, time and factory fixed effects, standard errors clustered by factory.

Table 5. Effects of Pay Clarity (Study 2) Structural Estimation

VARIABLES	(1) Pay Clarity	(2) Verbal Abuse	(3) Sexual Harassment
Pay Clarity		−0.260***	
		(0.0682)	
VA Social Norms		−0.0712	
		(0.176)	
Verbal Abuse			0.0604*
			(0.0239)
Review		−0.349	−0.234
		(0.274)	(0.146)
Reward		0.218	−0.303***
Punish		(0.136)	(0.0495)
Unfair		−0.0993	0.137
		(0.196)	(0.103)
Dehumanization		−0.0746	−0.113
		(0.328)	(0.121)
Org Tol SH 2			0.164***
			(0.0491)
Org Tol SH 3			−0.0880
			(0.0497)
Cognitive Load		0.120	−0.152
		(0.552)	(0.191)
Just treated	0.276*	−0.146	−0.0115
	(0.115)	(0.371)	(0.0919)
Treated	0.912***	−0.458	−0.0503
Long ago	(0.175)	(0.594)	(0.244)
Treated long	1.373***	−0.742	−0.665
Long ago	(0.325)	(0.809)	(0.408)
Constant	0.294	2.735	2.643***
	(0.201)	(1.397)	(0.522)
Observations	854	854	854

Note. Unstandardized coefficients are reported, with robust standard errors in parentheses.
*$p < .05$.
**$p < .01$.
***$p < .001$.
Demographic controls, time and factory fixed effects, standard errors clustered by factory.

Reports of sexual harassment were also reduced by systems of accountability, particularly when rewards and punishments are reviewed by managers, $b = -0.30$, $p < .001$, but were more likely when supervisors believed that worker complaints would not be taken seriously, $b = 0.16$, $p = .001$.

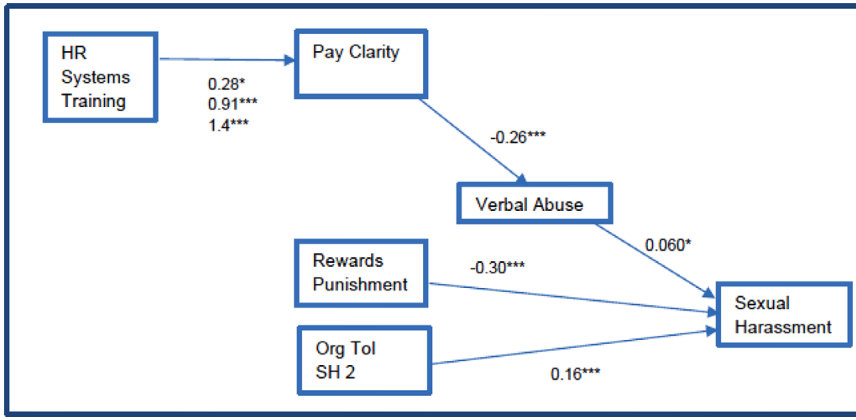

Fig 5. Study 2 estimated SEM pay clarity.
Note. Numbers along the directional arrows are the estimated unstandardized coefficients. HR Systems Training is the exogenous treatment variable and has three estimated treatment effects, the first for just after treatment, the second for months after treatment and the third for after the end of the program. [Color figure can be viewed at wileyonlinelibrary.com]

Turning to the treatment effects in the SEM analysis, treatment again had a strong effect on workers' perceptions of pay clarity immediately after treatment, $b = 0.28$, $p = .016$, in the months after treatment, $b = 0.91$, $p < .001$, and after the training program ended, $b = 1.37$, $p < .001$, as reported in column (1).

However, while there were two channels for treatment that might have reduced sexual harassment, neither provided consistent evidence. The SEM indicated a causal channel from pay clarity to verbal abuse and from verbal abuse, accountability, and organizational tolerance through sexual harassment. Yet, in the reduced-form analysis, treatment promoted pay clarity and strengthened accountability systems but did not directly reduce verbal abuse nor sexual harassment.

It appears the failure to realize reductions in verbal abuse and sexual harassment may arise from the failure of the program to address the social context of the factory. Treatment did not change supervisor perceptions of social norms related to verbal abuse. Further, and quite concerningly, the intervention appears to have promoted organizational tolerance for sexual harassment.

General Discussion

In this research, we tested the effects of a training program to teach personal finance skills (among other skills) to female workers in apparel factories in India and Bangladesh. Empirical analysis indicated that this training helped workers understand how to earn a promotion, reduced pay uncertainty, and increased

workers' financial planning efforts through developing a budget and utilization of the banking system. Reliable income and financial planning then helped workers increase savings. We then examined the effects of a human resources management intervention at the factory level in Myanmar and found that the program resulted in improvements among the predominantly female workers in understanding how their pay was calculated. Supervisors also felt a greater sense of accountability for their decisions concerning rewards and punishments.

Estimation of a multilevel mediation model indicated that understanding the link between effort and pay could potentially reduce abuse at work. In Study 1, workers who had a plan to realize life goals were less likely to be the target of sexual harassment. In Study 2, workers who understood how their pay was calculated were less likely to be the victims of verbal abuse. A decrease in verbal abuse, along with a strengthened accountability system for supervisors and a decline in organizational tolerance for sexual harassment, were associated with reduced experience with sexual harassment. However, in both studies, treatment did not have a sufficiently strong impact on these causal channels to reduce workplace abuse. Verbal abuse and sexual harassment were unchanged by the intervention in both studies.

Our findings in Study 1 provide evidence that targeted efforts to improve financial literacy are beneficial to workers, as indicated by previous scholars (Hathaway & Khatiwada, 2008; Messy & Monticone, 2013; Miller et al., 2014). We also found that increased financial literacy led to a greater likelihood of using banks, and to greater success with budgeting and saving money, converging with the findings from previous literature (Hasler & Lusardi, 2017; Perry & Morris, 2005; Stango & Zinman, 2009). Furthermore, the data showed that incentive-based pay hinders workers from being able to engage in financial budgeting and reduces their ability to save, because it introduces uncertainty into their incomes. This extends findings from Borino (2018) about pay uncertainty's links to worse emotional and physical outcomes, into the domain of financial well-being. The results from Study 2 indicated that workers' perceptions of pay clarity predicted less verbal abuse, similar to Rourke's (2014) findings from Jordan. Our findings thus highlight the ways in which verbal abuse is used by supervisors to attempt to motivate workers when the pay scheme is too unclear for workers to see the link between their effort and their pay. Our results also underscore the importance of organizational cues of tolerance for sexual harassment and accountability in shaping workers' experiences of abuse and harassment (Cantisano et al., 2008; Maass et al., 2013; O'Leary-Kelly et al., 2000).

Social Implications

The implications for social policy are manifold. The financial well-being of workers can be improved by providing training in life skills, especially financial

literacy. The gap in women's and men's knowledge of financial topics starting with numeracy and through learning which institutions are able to offer better interest rates has a resonating impact on their ability to save money and protect themselves from financial difficulties. Importantly, our findings also indicate that financial security in the form of savings is principally promoted by specific financial literacy skills of budgeting and income stability. This finding stands in contrast to the more conventional view that savings is principally determined by the level of income.

We also have important findings concerning the structure of pay. Factories commonly introduce incentive-based pay to increase productivity as incentives align worker and firm interests. However, as our findings from Study 1 suggest, incentive-based pay also increases income uncertainty, which reduces workers' ability to make a financial plan. Results from Study 2 imply that clarifying how pay is calculated may accomplish the objectives of incentive-based pay without introducing pay uncertainty. We found in Study 2 that pay clarity was associated with a reduction in verbal abuse, indicating that to the extent that workers understand how their pay is calculated, supervisors were less likely to resort to yelling and belittling in an attempt to promote work effort. Our findings indicate that factories considering the introduction of pay incentives to promote productivity should first upgrade human resource functionality concerning communication related to pay.

Communicating clearly to workers how pay is calculated also strengthens the accountability system. When supervisors are accountable for their decisions concerning rewarding and punishing workers, workers are less likely to feel vulnerable to sexual harassment.

Our findings also raise some concerning aspects of factory-level interventions. Interventions that neglect the social context may inadvertently have adverse effects on workers. Surprisingly, the intervention in Study 2 had the unintended effect of increasing organizational tolerance for sexual harassment, in at least one aspect. During the course of treatment, supervisors increased their belief that worker reports of sexual harassment would not be taken seriously.

It is unclear why organizational tolerance for sexual harassment increased in Study 2, but some possible theories suggest themselves. First, the intervention was originally designed to promote the use of pay incentives to increase productivity. Pay incentives could create a vulnerability to *quid pro quo* sexual harassment. However, the intervention was ultimately not successful in increasing the use of pay incentives. During Study 2, the Myanmar government significantly increased the minimum wage, but since the minimum wage calculation cannot include incentive pay, Myanmar factories reduced incentive pay during this period. A second possibility is that the intervention created a backlash by making people feel that there was an external constraint on harassment. Past research shows that emphasizing external (i.e., societal) reasons for reducing prejudice

actually led to increased prejudice (Legault, Gutsell, & Inzlicht, 2011). Alternatively, employees may have expected the factory's engagement with the intervention to herald improvements across a number of domains under the auspices of management, including sexual harassment. Echoing results from the diversity literature (Kaiser et al., 2013), the higher status supervisors may have responded to this sense of greater organizational fairness by being more dismissive of workers who claimed sexual harassment. This finding demonstrates the complexity of the systems of organizational culture, management actions, and worker experiences and their interactions. Furthermore, this research highlights the need for additional study of the effects of individual and organizational factors shaping female worker's experiences around the globe, as noted by Traylor, Ng, Corrington, Skorinko, and Hebl (in press).

Limitations

Our studies are not without their limitations. Conducting research in factories around the world presents unique challenges. The survey cannot be too long, as factory managers are allowing workers to leave the production line to complete the survey and workers are taking time out of a demanding workday. Turnover among workers in the garment industry can also be very high, leading to a steady attrition of participant groups. In addition, cultural differences mean that scales that were developed with U.S. participants may not translate (perhaps literally) to other contexts—despite multiple checks with local partners. For example, scales developed in the United States typically include some positively worded items and some negatively worded items; these items may elicit different types of responses, however, particularly in other cultures (DiStefano & Motl, 2006; Lindwall et al., 2012). Despite all these challenges, this research offers insights into the workplace conditions for many women around the world and offers not one but two potential paths to improving those conditions.

Future Directions

The findings from our study indicate that financial literacy training for workers and pay-related communications training for HR managers improve the ability of women to connect their effort at work to pay and improve financial planning, practices, and savings. However, we followed workers only during training and for a short period after the programs ended. The long-term impacts on the lives of participants and the broader contribution of programs like these to economic development remain to be determined.

More concerningly, these interventions were less successful in reducing abuse at work. Our theoretical model for Study 1 posited that helping women develop a plan for achieving life goals and providing them with greater financial

security through increased savings and pay stability would reduce vulnerability to sexual harassment. While treatment did promote greater financial security both in the composition of pay and savings, none of the treatment channels the statistical analysis identified ultimately affected sexual harassment.

Findings from Study 2 suggest that controlling abuse at work requires attention to the social structure within the organization. Sexual harassment in particular is affected by systems of accountability for supervisors and organizational tolerance. The findings suggest that social practices that limit sexual harassment are fragile and can be inadvertently disrupted by standard management recommendations such as more clearly linking behavior to pay and formal HR functionality. Additional research is needed to characterize interventions that strengthen the social aspects of factory work that protect workers from abuse.

Finally, we would like to note that the current debate on the contribution of apparel jobs to economic development is in flux. Conventional wisdom holds that apparel sector jobs provide women with their first formal employment opportunities, are a stepping-stone to more desirable jobs, and improve educational opportunities particularly for their daughters. However, recent empirical evidence questions this orthodoxy. A study of apparel factories in Ethiopia found that apparel work was typically of short duration, had adverse health consequences, and was useful only to the extent that it helped families manage short-term adverse income shocks (Blattman & Dercon, 2018). It remains undetermined whether programs, such as those studied here, strengthen worker financial skills and HR functionality in a way that helps women use work to achieve life goals and realize the full economic potential contribution of factory jobs in global supply chains. Further, if workplace interventions are successful in improving the quality of factory work, will women leave the factory for richer life opportunities, or will they come to see factory work as their life-long employment? Additional work is necessary to determine which types of interventions provide long-term benefits and the form those benefits take.

References

Ambrose, M. L., & Schminke, M. (2009). The role of overall justice judgments in organizational justice research: A test of mediation. *Journal of Applied Psychology*, *94*(2), 491–500. https://doi.org/10.1037/a0013203

Austrian, K., & Muthengi, E. (2014). Can economic assets increase girls' risk of sexual harassment? Evaluation results from a social, health and economic asset-building intervention for vulnerable adolescent girls in Uganda. *Children and Youth Services Review*, *47*, 168–175. https://doi.org/10.1016/j.childyouth.2014.08.012

Barua, R., Koh, B., & Mitchell, O. S. (2018). Does financial education enhance financial preparedness? Evidence from a natural experiment in Singapore. *Journal of Pension Economics & Finance*, *17*(3), 254–277. https://doi.org/10.1017/S1474747217000312

Bernheim, B. D., & Garrett, D. M. (2003). The effects of financial education in the workplace: Evidence from a survey of households. *Journal of Public Economics*, *87*(7–8), 1487–1519. https://doi.org/10.1016/S0047-2727(01)00184-0

Bernheim, B. D., Garrett, D. M., & Maki, D. M. (2001). Education and saving: The long-term effects of high school financial curriculum mandates. *Journal of Public Economics*, *80*(3), 435–465. doi: https://doi.ogr/10.1016/S0047-2727(00)00120-1

Berry, J., Karlan, D., & Pradhan, M. (2018). The impact of financial education for youth in Ghana. *World Development*, *102*, 71–89. https://doi.org/10.1016/j.worlddev.2017.09.011

Billikopf, G. E. (2014). *Labor management in agriculture: Cultivating personnel productivity*. Oakland, CA: University of California, Division of Agriculture and Natural Resources, Agricultural Issues Center.

Blattman, C., & Dercon, S. (2018). The impacts of industrial and entrepreneurial work on income and health: Experimental evidence from Ethiopia. *American Economic Journal: Applied Economics*, *10*(3): 1–38. https://doi.org/10.1257/app.20170173

Borino, F. (2018). *Piece rate pay and working conditions in the export garment sector*. Working Paper, International Labour Organization. https://www.ilo.org/wcmsp5/groups/public/—ed_dialogue/—dialogue/documents/publication/wcms_663063.pdf

Brodt, S. E. (1994). "Inside information" and negotiator decision behavior. *Organizational Behavior and Human Decision Processes*, *58*(2), 172–202. http://doi.org/10.1006/obhd.1994.1033

Bucher-Koenen, T., Lusardi, A., Alessie, R., & van Rooij, M. (2016). How financially literate are women? An overview and new insights. *Journal of Consumer Affairs*, *51*(2). https://doi.org/10.1111/joca.12121

Burroughs, J. D. (1982). Pay secrecy and performance: The psychological research. *Compensation Review*, *14*, 44–54. https://doi.org/10.1177/088636878201400305

Calfas, J. (2018, April 9). Inside sexual harassment's hidden toll on equal pay. *Time*. Retrieved from http://time.com/5227742/sexual-harassment-equal-pay-wage-gap.

Cantisano, G. T., Domínguez, J. M., & Depolo, M. (2008). Perceived sexual harassment at work: Meta-analysis and structural model of antecedents and consequences. *The Spanish Journal of Psychology*, *11*(1), 207–218. https://doi.org/10.1017/S113874160000425X

Chaney, J. (2018, February 12). #PayUsMoreTouchUsLess. *Equal Pay Today*. Retrieved from http://www.equalpaytoday.org/news/2018/2/12/3yigug6hdgva7d8gu0ayrb7snfjyk4

Chen, H., & Volpe, R. P. (2002). Gender differences in personal financial literacy among college students. *Financial Services Review*, *11*, 289–307.

Cole, S., Paulson, A., & Shastry, G. K. (2016). High school curriculum and financial outcomes: The impact of mandated personal finance and mathematics courses. *Journal of Human Resources*, *51*(3), 656–698. doi:https://doi.ogr/10.3368/jhr.51.3.0113-5410R1

Colella, A., Paetzold, R. L., Zardkoohi, A., & Wesson, M. J. (2007). Exposing pay secrecy. *Academy of Management Review*, *32*(1), 55–71. https://doi.org/10.5465/amr.2007.23463701

Colquitt, J. A., Conlon, D. E., Wesson, M. J., Porter, C. O. L. H., & Ng, K. Y. (2001). Justice at the millennium: A meta-analytic review of 25 years of organizational justice research. *Journal of Applied Psychology*, *86*, 425–445.

Creevey, L., & Edgerton, J. (1997). Evaluation of the impacts of grassroots management training on women in India. *Canadian Journal of Development Studies/Revue canadienne d'études du développement*, *18*, 645–672.

Davis, M. E. (2016). Pay matters: The piece rate and health in the developing world. *Annals of Global Health*, *82*(5), 858–865. doi:https://doi.ogr/10.1016/j.aogh.2016.05.005

Davis, T. R. V. (1997). Open-book management: Its promise and pitfalls. *Organizational Dynamics*, *25*(3), 7–20. https://doi.org/10.1016/S0090-2616(97)90044-9

DiStefano, C., & Motl, R. W. (2006). Further investigating method effects associated with negatively worded items on self-report surveys. *Structural Equation Modeling*, *13*, 440–464. https://doi.org/10.1207/s15328007sem1303_6

Duflo, E., & Saez, E. (2003). The role of information and social interactions in retirement plan decisions: Evidence from a randomized experiment. *The Quarterly Journal of Economics*, *118*(3), 815–842. https://doi.org/10.1162/00335530360698432

Eisenberg, D. T. (2011). Money, sex, and sunshine: A market-based approach to pay discrimination. *Arizona State Law Journal*, *43*, 951–1020.

Elo, A., Leppänen, A., & Jahkola, A. (2003). Validity of a single-item measure of stress symptoms. *Scandinavian Journal of Work, Environment & Health*, *29*(6), 444–451. Retrieved from http://www.jstor.org/stable/40967322

Fandt, P. M. (1991). The relationship of accountability and interdependent behavior to enhancing team consequences. *Group & Organization Studies*, *16*(3), 300–312. https://doi.org/10.1177/105960119101600305

Field, E., Jayachandran, S., & Pande, R. (2010). Do traditional institutions constrain female entrepreneurship? A field experiment on business training in India. *American Economic Review*, *100*(2), 125–129. https://doi.org/10.1257/aer.100.2.125

Ford, T. E., Gambino, F., Lee, H., Mayo, E., & Ferguson, M. A. (2004). The role of accountability in suppressing managers' pre-interview bias against African-American sales job applicants. *Journal of Personal Selling & Sales Management*, *24*(2), 113–124.

Fredericksen, E. D., & McCorkle, S. (2013). Explaining organizational responses to workplace aggression. *Public Personnel Management*, *42*(2), 223–238. https://doi.org/10.1177/0091026013487050

Futrell, C. M., & Jenkins, O. C. (1978). Pay secrecy versus pay disclosure for salesmen: A longitudinal study. *Journal of Marketing Research*, *15*(2), 214–219. https://doi.org/10.2307/3151251

Geddes, L.A. and Heywood, J. S. (2003). Gender and piece rates, commissions, and bonuses. *Industrial Relations: A Journal of Economy and Society*, *42*(3), 419–444. https://doi.org/10.1111/1468-232X.00298

Gerhart, B., & Rynes, S. L. (2003). *Compensation: Theory, evidence, and strategic implications*. Thousand Oaks, CA: Sage.

Ghasemi, A. (in press). Negotiating challenges and aspirations in a gendered work environment: The voices of women working in the Iranian broadcasting media. *Journal of Social Issues*.

Gruenfeld, D. H., Inesi, M. E., Magee, J. C., & Galinsky, A. D. (2008). Power and the objectification of social targets. *Journal of Personality and Social Psychology*, *95*(1), 111–127. https://doi.org/10.1037/0022-3514.95.1.111

Hall, A. T., Frink, D. D., & Buckley, M. R. (2017). An accountability account: A review and synthesis of the theoretical and empirical research on felt accountability. *Journal of Organizational Behavior*, *38*(2), 204–224.

Hamner, W. C., & Harnett, D. L. (1975). The effects of information and aspiration level on bargaining behavior. *Journal of Experimental Social Psychology*, *11*(4), 329–342. https://doi.org/10.1016/0022-1031(75)90014-1

Hart, R. A. (2016). *The rise and fall of piecework*. IZA World of Labor. Retrieved from https://wol.iza.org/articles/rise-and-fall-of-piecework/long

Hasler, A., & Lusardi, A. (2017). The gender gap in financial literacy: A global perspective. Global Financial Literacy Excellence Center, The George Washington University School of Business. https://gflec.org/wp-content/uploads/2017/07/The-Gender-Gap-in-Financial-Literacy-A-Global-Perspective-Report.pdf

Hathaway, I., & Khatiwada, S. (2008). *Do financial education programs work?* Federal Reserve Bank of Cleveland, Working Paper no. 08-03. Retrieved from https://www.clevelandfed.org/newsroom-and-events/publications/working-papers/working-papers-archives/2008-working-papers/wp-0803-do-financial-education-programs-work.aspx

Hayes, B. (1984). Unions and strikes with asymmetric information. *Journal of Labor Economics*, *2*, 57–83. https://doi.org/10.1086/298023

Hershcovis, M. S., Turner, N., Barling, J., Arnold, K. A., Dupré, K. E., Inness, M., LeBlanc, M. M. & Sivanathan, N. (2007). Predicting workplace aggression: A meta-analysis. *Journal of Applied Psychology*, *92*(1), 228–238. https://doi.org/10.1037/0021-9010.92.1.228

Heywood, J. S., & Jirjahn, U. (2002). Payment schemes and gender in Germany. *ILR Review*, *56*(1), 44–64. https://doi.org/10.1177/001979390205600103

Hossain, M. A., & Tisdell, C. A. (2005). Closing the gender gap in Bangladesh: Inequality in education, employment and earnings. *International Journal of Social Economics*, *32*(5), 439–453. https://doi.org/10.1108/03068290510591281

Hulin, C. L., Fitzgerald, L. F., & Drasgow, F. (1995). *Organizational influences on sexual harassment*. In M. Stockdale (Ed.), *Sexual harassment in the workplace* (Vol. *5*, pp. 127–150). Thousand Oaks, CA: Sage.

Hung, A., Yoong, J., & Brown, E. (2012). *Empowering women through financial awareness and education*. OECD Working Papers on Finance, Insurance and Private Pensions, No.14, OECD Publishing. https://doi.org/10.1787/5k9d5v6kh56g-en

ILO (International Labor Organization). (n.d.). *Sexual harassment at work*. https://www.ilo.org/wcmsp5/groups/public/—ed_norm/—declaration/documents/publication/wcms_decl_fs_96_en.pdf

Jappelli, T. (2010). Economic literacy: An international comparison. *The Economic Journal*, *120*(548), F429–F451. https://doi.org/10.1111/j.1468-0297.2010.02397.x

Jones, F. F., Scarpello, V., & Bergmann, T. (1999). Pay procedures— What makes them fair? *Journal of Occupational & Organizational Psychology*, *72*, 129–145. https://doi.org/10.1348/096317999166554

Kaiser, C. R., Major, B., Jurcevic, I., Dover, T. L., Brady, L. M., & Shapiro, J. R. (2013). Presumed fair: Ironic effects of organizational diversity structures. *Journal of Personality and Social Psychology*, *104*(3), 504–519. https://doi.org/10.1037/a0030838

Kessler, R. C., & Neighbors, H. W. (1986). A new perspective on the relationships among race, social class, and psychological distress. *Journal of Health and Social behavior*, *27*(2), 107–115. https://doi.org/10.2307/2136310

Kim, M. (2015). Pay secrecy and the gender wage gap in the United States. *Industrial Relations: A Journal of Economy and Society*, *54*(4), 648–667. https://doi.org/10.1111/irel.12109

Klapper, L., Lusardi, A., & Van Oudheusden, P. (2015). Financial literacy around the world. *Standard & Poor's Ratings Services Global Financial Literacy Survey*. Washington: Standard & Poor's.

Kyaw, D., & Routray, J. K. (2006). Gender and rural poverty in Myanmar: A micro level study in the dry zone. *Journal of Agriculture and Rural Development in the Tropics and Subtropics*, *107*, 103–114.

Legault, L., Gutsell, J., & Inzlicht, M. (2011). Ironic effects of antiprejudice messages: How motivational interventions can reduce (but also increase) prejudice. *Psychological Science*, *22*, 1472–7. doi:https://doi.ogr/10.1177/0956797611427918.

Lim, S. & Cortina, L.M. (2005) Interpersonal mistreatment in the workplace: The interface and impact of general incivility and sexual harassment. *Journal of Applied Psychology*, *90*, 483–496. http://doi.org/10.1037/0021-9010.90.3.483

Lin, X., Babbitt, L., & Brown, D. (2014). *Sexual harassment in the workplace: How does it affect firm performance and profits*. Better Work Discussion Paper Series: No. 16. International Labour Office, Geneva.

Lindwall, M., Barkoukis, V., Grano, C., Lucidi, F., Raudsepp, L., Liukkonen, J., & Thøgersen-Ntoumani, C. (2012). Method effects: The problem with negatively versus positively keyed items. *Journal of Personality Assessment*, *94*, 196–204. https://doi.org/10.1080/00223891.2011.645936

Lloyd, B., & Case, J. (1998). Open book management: A new approach to leadership. *Leadership & Organization Development Journal*, *19*(7), 392–396. https://doi.org/10.1108/01437739810242568

Lobel, O. (2019). Knowledge pays: Reversing information flows and the future of pay equity. Columbia Human Rights Law Review. Advance online copy. Retrieved from http://www.njl.nu/uploads/Orly_Lobel_2019.pdf

Locke, E. A., & Latham, G. P. (1990). Work motivation and satisfaction: Light at the end of the tunnel. *Psychological Science*, *1*(4), 240–246. https://doi.org/10.1111/j.1467-9280.1990.tb00207.x

Lorant, V., Deliège, D., Eaton, W., Robert, A., Philippot, P., & Ansseau, M. (2003). Socioeconomic inequalities in depression: A meta-analysis. *American Journal of Epidemiology*, *157*(2), 98–112. https://doi.org/10.1093/aje/kwf182

Lusardi, A., & de Bassa Scheresberg, C. (2013). *Financial literacy and high-cost borrowing in the United States*. NBER Working Paper 18969.

Lusardi, A., & Mitchell, O. S. (2008). Planning and financial literacy: How do women fare? *American Economic Review*, *98*(2), 413–17. doi:https://doi.org/10.1257/aer.98.2.413

Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature, American Economic Association*, *52*, 5–44. doi:https://doi.org/10.1257/jel.52.1.5

Lusardi, A., & Tufano, P. (2015). Debt literacy, financial experiences, and over indebtedness. *Journal of Pension Economics and Finance*, *14*, 332-328. https://doi.org/10.1017/S1474747215000232

Maass, A., Cadinu, M., & Galdi, S. (2013). Sexual harassment: Motivations and consequences. In M. K. Ryan & N. R. Branscombe (Eds.), *The Sage Handbook of Gender and Psychology* (pp. 341–358). Newbury Park, CA: Sage. http://doi.org/10.4135/9781446269930

Mackenbach, J. P., Stirbu, I., Roskam, A. J. R., Schaap, M. M., Menvielle, G., Leinsalu, M., & Kunst, A. E. (2008). Socioeconomic inequalities in health in 22 European countries. *New England Journal of Medicine*, *358*(23), 2468–2481. doi:https://doi.org/10.1056/NEJMsa0707519

Marmot, M. (2005). Social determinants of health inequalities. *The Lancet*, *365*(9464), 1099–1104. https://doi.org/10.1016/S0140-6736(05)71146-6

McLoyd, V. C. (1989). Socialization and development in a changing economy: The effects of paternal job and income loss on children. *American Psychologist*, *44*(2), 293–302. http://doi.org/10.1037/0003-066X.44.2.293

Messy, F., & Monticone, C. (2013). Gender differences in financial literacy: Identifying barriers and addressing women's and girls' needs through financial education. In *Women and Financial Literacy: OECD/ INFE Evidence, Survey and Policy Responses* (pp. 47–114). Retrieved from http://www.oecd.org/daf/fin/financial-education/TrustFund2013_OECD_INFE_Women_and_Fin_Lit.pdf.

Miller, M., Reichelstein, J., Salas, C., & Zia, B. (2014). *Can you help someone become financially capable? A meta-analysis of the literature*. The World Bank. https://doi.org/10.1093/wbro/lkv009.

Møller, A. P., Fincher, C. L., & Thornhill, R. (2009). Why men have shorter lives than women: effects of resource availability, infectious disease, and senescence. *American Journal of Human Biology: The Official Journal of the Human Biology Association*, *21*(3), 357–364.

Ng, K., Ang, S., & Chan, K. (2008). Personality and leader effectiveness: A moderated mediation model of leadership self-efficacy, job demands, and job autonomy. *Journal of Applied Psychology*, *93*(4), 733–743. https://doi.org/10.1037/0021-9010.93.4.733

O'Leary-Kelly, A. M., Paetzold, R. L., & Griffin, R. W. (2000). Sexual harassment as aggressive behavior: An actor-based perspective. *Academy of Management Review*, *25*(2), 372–388. https://doi.org/10.2307/259019

Overbeck, J. R., & Park, B. (2006). Powerful perceivers, powerless objects: Flexibility of powerholders' social attention. *Organizational Behavior and Human Decision Processes*, *99*(2), 227–243. https://doi.org/10.1016/j.obhdp.2005.10.003

Padavic, I., & Earnest, W. R. (1994). Paternalism as a component of managerial strategy. *Social Science Journal*, *31*, 389–405. https://doi.org/10.1016/0362-3319(94)90031-0

Perry, V. G., & Morris, M. D. (2005). Who is in control? The role of self-perception, knowledge, and income in explaining consumer financial Behavior. *Journal of Consumer Affairs*, *39*(2), 299–313. https://doi.org/10.1111/j.1745-6606.2005.00016.x

Popovich, P., & Warren, M. (2010). The role of power in sexual harassment as a counterproductive behavior in organizations. *Human Resource Management Review*, *20*, 45–53. https://doi.org/10.1016/j.hrmr.2009.05.003

Rourke, E. (2014). *Is there a business case against verbal abuse? Incentive structure, verbal abuse, productivity and profits in garment factories*. Better Work Discussion Paper Series 2014; Discussion Paper 15. Retrieved from http://betterwork.org/global/wp-content/uploads/2014/09/DP-15-web.pdf.

Rosenblat, A., & Stark, L. (2016). Algorithmic labor and information asymmetries: A case study of Uber's drivers. *International Journal of Communication*, *10*, 3758–3784. http://doi.org/10.2139/ssrn.2686227

Roth, A. E., & Murnighan, J. K. (1982). The role of information in bargaining: An experimental study. *Econometrica*, *50*, 1123–1142. doi:https://doi.org/10.2307/1911866

Shanks, T. R., & Danziger, S. K. (2010). Anti-poverty policies and programs for children and families. In J. M. Jenson & M. W. Fraser (Eds.), *Social policy for children and families: A risk and resilience perspective* (2nd ed., pp. 25–56). London: Sage.

Simmons, C., & Supri, S. (1999). Failing financial and training institutions: The marginalization of rural household enterprises in the Indian Punjab. *Journal of Economic Issues*, *33*(4), 951–972. https://doi.org/10.1080/00213624.1999.11506223

Stango, V., & Zinman, J. (2009). Exponential growth bias and household finance. *The Journal of Finance*, *64*, 2807–2849.

Stiglitz, J. (1998). The private uses of public interests: Incentives and institutions. *Journal of Economic Perspectives*, *12*, 3–22. https://doi.org/10.1111/j.1540-6261.2009.01518.x

Thein, P. T. (2015, July). *Gender equality and cultural norms in Myanmar*. Paper presented at the 1st International Conference on Burma/Myanmar Studies, Chiang Mai, Thailand.

Tost, L. P., & Johnson, H. H. (2019). The prosocial side of power: How structural power over subordinates can promote social responsibility. *Organizational Behavior and Human Decision Processes*, *152*, 25–46. https://doi.org/10.1016/j.obhdp.2019.04.004

Traylor, A. M., Ng, L. C., Corrington, A., Skorinko, J. & Hebl, M. R. (in press). Expanding research on working women more globally: Identifying and remediating current blindspots. *Journal of Social Issues*.

Truskinovsky, Y., Rubin, J., & Brown, D. (2014). Sexual harassment in garment factories: Firm structure, organizational culture and incentive systems. Better Work Discussion Paper Series 2014; Discussion Paper 14. Available at: https://betterwork.org/blog/portfolio/sexual-harassment-in-garment-factories-firmstructure-organizational-culture-and-incentive-systems/

Wanous, J. P., & Reichers, A. E. (1996). Estimating the reliability of a single-item measure. *Psychological Reports*, *78*(2), 631–634. https://doi.org/10.2466/pr0.1996.78.2.631

Wanous, J. P., Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: How good are single-item measures? *Journal of Applied Psychology*, *82*(2), 247–252. https://doi.org/10.1037/0021-9010.82.2.247

World Economic Forum. (2020). The Global Gender Gap Report, 2020. *World Economic Forum*. http://www3.weforum.org/docs/WEF_GGGR_2020.pdf

NEGIN R. TOOSI is an experimental social psychologist with a special focus on diversity and intergroup relations. Her research deals primarily with social identities such as race, gender, religion, and migration status. She completed her undergraduate degree at Stanford University, and her PhD at Tufts University. She is currently an assistant professor of psychology at California State University, East Bay.

ELYSE N. VOEGELI is a data analyst and designer based in New York City. She holds a master's degree from Harvard University and a bachelor's degree from Tufts University. She was previously the program manager at the Tufts Labor Lab, where her research focused on the intersection of gender and labor.

ANA W. ANTOLIN graduated from Tufts University in 2018 with a bachelor's degree in Quantitative Economics and International Relations. She has since been working in the Tufts Labor Lab as a data analyst.

LAURA G. BABBITT is a social psychologist and researcher at Tufts University. Her research has examined the psychological factors that influence

interracial interaction outcomes, making use of both experimental and meta-analytic techniques. She earned her undergraduate degree at Wellesley College, and her PhD at Tufts University. Her current research investigates intergroup dynamics in apparel factories, in connection with the Tufts Labor Lab.

DRUSILLA K. BROWN is head of the Tufts Labor Lab. Her primary areas of research are the application of large-scale general equilibrium models to the study of international economic integration and research on trade policy concerning international labor standards and child labor. She earned her undergraduate degree at Indiana University and her PhD at the University of Michigan. She is currently an associate professor of economics at Tufts University.