Sexual Exploitation of Trafficked Children:

Survey Evidence from Child Sex Workers in Bangladesh

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Abstract

Human trafficking is a serious humanitarian problem. Using a nationally representative survey of Bangladeshi child sex workers and an instrumental variable model, we examine the working conditions of trafficked child sex workers and how they differ from those of nontrafficked child sex workers. We find that the victims trade sex with 190 percent more clients at a 67.8 percent lower wage and are more exposed to violence, leading to sickness, such as fever and headache. However, the differences in the prevalence of STDs and injury are insignificant presumably because the owners have an incentive to protect the victims from STDs. These findings suggest that evaluating sex workers' working conditions by the prevalence of STDs alone may underestimate the severity of the exploitation of victims. Furthermore, conducting an empirical analysis without distinguishing between trafficked and nontrafficked workers, as performed in previous studies, leads to misunderstandings regarding the sex industry. We also contribute to the literature concerning the worst form of child labor by providing the first rigorous evidence of the working conditions of child sex workers. Finally, four implications for practitioners are discussed.

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1. Introduction

Human trafficking—the recruitment and transportation of individuals most often by force, coercion, or deception, for the purpose of exploitation—is a serious humanitarian problem with a global scale.[1] The ILO estimates that the number of trafficked forced laborers is as much as 2.5 million, accounting for approximately 20 percent of forced laborers worldwide (Belser et al. 2005). Furthermore, 54 percent of these victims are exploited in the sex industry (UNODC 2016). Given the significance of this issue, the eradication of human trafficking is included in the policy targets of the Sustainable Development Goals (Targets 5.2, 8.7, and 16.2).

Previous studies have explored two issues related to trafficking. First, using the data on those rescued during the trafficking process, the victims' inflow and outflow are examined (Cho et al. 2013; Danailova-Trainor and Belser 2006; Jacobsson and Kotsadam 2013; Mahmoud and Trebesch 2010). Second, using the data of victims rescued from their workplace, their working conditions and physical/mental health are examined (Di Tommaso et al. 2009; Oram et al. 2012; Tsutsumi et al. 2008). However, two issues need to be addressed to understand the severity of such exploitation. First, many victims are hard to rescue and continue to be exploited, and their working conditions may be systematically different from those of rescued individuals. Second, the poor working conditions of trafficked workers are attributed to two areas of coercion: first, they are forced to engage in an

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[1] Our definition of human trafficking is consistent with that of the United Nations (2000) as follows: *"Trafficking in persons" shall mean the recruitment, transportation, transfer, harbouring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person for the purpose of exploitation*. In this definition, "exploitation" includes *forced labor or services, slavery, or practices similar to slavery as well as other things like the removal of organs*. Forced labor is defined by the 1930 ILO Convention as *all work or service which is extracted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily*. Therefore, trafficked sex workers are, by definition, forced laborers and sexually exploited.

occupation whose working conditions are, in general, poorer than those of other occupations, and second, they are forced to work under particularly poor conditions even within the occupation. Although it would be relevant for policymakers to establish the prevalence of each area of coercion, previous studies have not done so.

This study bridges these knowledge gaps in the literature by examining how and to what extent the working conditions of trafficking victims differ from those of nontrafficked workers in the same occupation. This study specifically investigates child sex workers in Bangladesh. Using nontrafficked workers for the control group enables us to identify the severity of the second area of coercion.[2] To the best of our knowledge, this study is the first to explore the working conditions of trafficking victims who continue to be exploited.

Existing studies report that there are various distinctions between trafficked and nontrafficked sex workers (ILO 2002, 31; Karim et al. 2008; Terre des hommes Italia 2005). In general, trafficked workers are enslaved under the threat of violence by their owners, such as pimps and senior sex workers, and they cannot quit voluntarily. Therefore, they have no choice over their clients, sexual practices, or condom use. The owners take part of the payment from the clients, and the workers receive the remainder as their wage. In contrast, nontrafficked workers have relatively more freedom over their job.[3]

Despite these distinctions, it is theoretically ambiguous whether trafficked workers are forced to work under more oppressive conditions than nontrafficked workers in terms of wages and work

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[2] An alternative control group is children who successfully find a decent job or children who stay in their original village; however, this does not allow us to isolate the two forms of coercion.

[3] However, exceptional cases exist. Some nontrafficked workers work with pimps, although their working conditions may be less exploitative than those of trafficked workers. Others are forced by their family to engage in sex work under exploitative conditions. In Section 5, we confirm that the trafficked workers are indeed exposed to a higher risk of violence and are less able to quit voluntarily than nontrafficked workers.

time. On the one hand, principal-agent models predict that the extremely low outside options (impossibility of escape) available for victims lead to a higher risk of violence by their owners, longer working hours, and lower wages (Acemoglu and Wolitzky 2011; Chwe 1990). On the other hand, owners can mitigate clients' coercion of the workers (Lee and Persson 2016) and eliminate asymmetric information between clients and workers (Farmer and Horowitz 2013). Owners also have an incentive to care about the health conditions of their workers: maintaining their productivity (Chwe 1990, 1113). In fact, forced laborers often have income levels close to those of voluntary laborers (ILO 2009).

Bangladesh has suitable features for examining the relationship between trafficking victimization and the working conditions of sex workers. First, human trafficking and the sex industry are policy-relevant; Bangladesh is a rare Muslim country in which prostitution is partly legalized, and there is a high risk of human trafficking.[4] However, the available information concerning trafficking in this country is limited (UNODC 2016). Second, although sex trafficking happens all over the world, those working in regions such as the Middle East and developed countries tend to be trafficked from other regions such as South Asia and Eastern Europe. Analyzing such victims of cross-border trafficking makes it difficult to isolate the trafficking-victim effect and foreigner effect. However, this problem is less likely to occur in our setting, where both trafficked and nontrafficked workers share the same nationality. Finally, related to the second feature, our setting allows us to uncover the victimization patterns of internal trafficking. This is important because a majority of existing studies examine the inflow/outflow of cross-border trafficking (Cho et al. 2013; Danailova-Trainor and Belser 2006; Jacobsson and Kotsadam 2013; Mahmoud and Trebesch 2010), even though more than 40 percent of victims worldwide and 88 percent of the victims in South Asia are trafficked domestically (UNODC 2016).

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[4] Bangladesh has been graded "the Tier 2 Watch List" from 2017 to 2019 in the *Trafficking in Persons Report* (US State Department 2020).

There are, however, two technical challenges in the empirical analysis. First, since the sex industry is informal and illegal, it is difficult to collect reliable survey data regarding it. Hence, we use the *Commercial Sexual Exploitation of Children (CSEC) Pilot Survey* from 2008, a nationally representative survey of child sex workers. A key feature of the dataset is that the survey was designed by the national statistical agency and the ILO and conducted by enumerators, including local sex workers and NGOs who are familiar with the local context, mitigating this problem.

The second challenge is the endogeneity of trafficking victimization. This study employs the frequency of natural disasters occurring in the hometown of the respondents when they were in an age group with a high victimization risk as an instrumental variable. It has been reported in many countries that teenagers in disaster-affected areas face a high risk of becoming victims of human trafficking (ECPAT International 2011; Kara 2010; Poncelet et al. 2010; Singh 2012; UNODC 2008). Since such individuals often seek better job opportunities outside their hometowns, it is easier for trafficking brokers to lure them into trafficking by promising them well-paid job opportunities. To address potential concerns regarding the exclusion restriction, this study controls for (1) disaster damage that occurred when they were too young to be victimized and (2) working district fixed effects. The former captures the regional characteristics of disaster-prone districts that could be correlated with the working conditions. The latter controls for the direct effects of disaster shocks in the home district on the economy of the working district. We also discuss the threats to identification driven by unobserved attractiveness and human capital, credit constraints, the persistent effects of disasters, selective exits from the sex industry, and heterogeneity in the awareness of trafficking risk. Further, we estimate the model without relying on the assumption of the exclusion restriction (Conley et al. 2012; Nevo and Rosen 2012).

The results show that trafficking victims are more likely to use drugs, experience violence from senior sex workers and pimps, and face difficulties in quitting the job voluntarily. Further, the victims trade sex with 190 percent more clients and earn 67.8 percent less money per client than

nontrafficked workers.[5] Victims are also more likely to suffer from fevers and headaches. However, we do not find a systematic difference in the prevalence of sexually transmitted diseases (STDs), injuries, or accidents. We also provide evidence that trafficked workers have better access to medical facilities than nontrafficked workers and that the frequency of using a condom is comparable between workers. These findings suggest that the worse working conditions of victims lead to their exhaustion and poor health, but their owners manage to protect them from STDs as STDs affect the victims' productivity.

This study also contributes to the broad literature on child labor. The importance of eradicating the worst forms of child labor has long been emphasized (Edmonds 2007). However, little is known about children's reasons for participating in such activities and the consequences thereof. There is some evidence from the porter and rag-picking industries in Nepal (Edmond 2010), but rigorous empirical studies on this issue are still scarce. This study contributes to this literature by adding the first evidence from the child prostitution industry. The industry has distinctive features in that it is illegal regardless of the worker's age. Furthermore, as Edlund and Korn (2002) argue, prostitution is a female, unskilled, and well-paid job. These features expose children (mainly girls) to a high risk of violence and abuse.

Another contribution relates to the growing literature on commercial sex workers (Arunachalam and Shah 2013; Edlund and Korn 2002; Gertler et al. 2005; Li et al. 2018; Manian 2017; Rao et al. 2003). This is the first study to analyze the working conditions of trafficked sex workers. Female sex workers earn higher wages than other female workers, but they are exposed to serious harm, such as HIV/AIDs and violence (Arunachalam and Shah 2013; Rekart 2006). Existing studies have shown that the higher wages of female sex workers can be explained as compensation

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[5] This cannot be explained by unobserved heterogeneity in worker characteristics, such as attractiveness. If the brokers target attractive children with high profitability, they should then earn higher wages.

for the loss of future benefits, such as marriage and health.[6] In contrast, trafficked workers' future lives are completely ruined, and they earn lower wages. This contrast suggests that pooling both types of workers, as previous studies have done, leads to misunderstandings of the market structure. Furthermore, while the prevalence of STDs and condom usage among workers are central issues in the literature, our findings suggest that evaluating working conditions by these outcomes alone may underestimate the severity of the exploitation of trafficked workers.

The rest of this study is organized as follows: Section 2 describes human trafficking in Bangladesh. Section 3 documents our dataset. Section 4 develops our identification strategy, and Section 5 presents the estimation results. Finally, Section 6 concludes the paper.

2. Background

2.1. Human trafficking in Bangladesh

Human trafficking is a serious issue in Bangladesh, as in other developing countries; it is estimated that 10,000 to 20,000 women and children are trafficked each year (ADB 2004, p5). Human trafficking is carried out by well-organized crime syndicates that have various links with law enforcement agencies, local elites, transportation agencies, members of hotel management teams, and brothel owners (ILO 2002). Human trafficking actors can be classified into four roles: organizer,

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[6] Edlund and Korn (2002) and Edlund et al. (2009) interpret the high wage of sex workers as compensation for exit from marriage market, while Della Giusta et al. (2009a, 2009b) focus on the role of stigma. Other studies investigate the wage difference across sex workers and find that risk premium plays a central role and trading condom-free sex has a positive effect on wages (Adriaenssens and Hendrickx 2012; Gertler et al. 2005; Rao et al. 2003; Robinson and Yeh 2011; Shah 2013). In particular, the wage premium of condom-free sex is higher in areas with a higher risk of STDs; it increases with the worker's attractiveness and knowledge about HIV risk but decreases with the worker's drug use, alcohol consumption, and poor financial situation (Arunachalam and Shah 2013; de la Torre et al. 2010; Gertler et al. 2005).

recruiter, transporter, and final abuser. The primary actor in the initial step is the organizer. The roles include arranging the whole trafficking process to maximize their profits and placing the initial order with the recruiters and transporters. The organizers can be brothel owners, local elites, or members of a trafficking syndicate.

The second actor is the recruiter. These actors lure children, such as street children and attractive young girls, into trafficking.[7] They particularly target teenage girls in disaster-affected districts, given the high probability of success in doing so. Since job opportunities are scarce in such districts, many girls attempt to find jobs in urban areas. Therefore, it is easier for brokers who promise well-paying job opportunities or marriage proposals to lure them into trafficking, even if such girls are aware of the risk of being trafficked (Bangladesh Institute of Peace and Security Studies 2011; ECPAT International 2011; Gazi et al. 2001; Kara 2010; Poncelet et al. 2010; Singh 2012; UNODC 2008).[8] The trafficking risk may also be high in regions with developed transportation infrastructure and in regions adjacent to national borders because it is easier for recruiters to transport victims to their final destination from such areas. Isolated or impoverished regions are also more attractive to them because it is both harder for parents to seek assistance from law enforcement and easier to sell the idea of "lucrative jobs" to impoverished parents.

The third agent, the transporter, is responsible for arranging the travel of the victims to the destination region. Such agents include transport workers, illegal immigration actors, cross border

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[7] They are mainly professional brokers, but in addition, victim's friends, relatives, and even family could be recruiters. They sell the victim to local gangs, who can contact the trafficking syndicate. This case is likely to occur when the family/relative suffers from poverty or when the victim does not get along with his/her (step)parents. The other modes of recruitment include kidnapping and recruitment by former trafficking victims.

[8] Therefore, the victims' parents not only lose their child but also sometimes lose their assets, since they pay the brokers a job-placement fee or dowry (Joarder and Miller 2014).

traders, hotel management, and corrupt police and border security forces (Paul and Hasnath 2000).[9] To control victims during transportation, transporters inflict various modes of abuse, such as injecting sedatives, physical/sexual/verbal abuse, house arrest, starvation, the forced use of drugs and alcohol, and threats (ILO 2002, 30; Kara 2010).

After arriving at the destination region in or outside Bangladesh, the victims are sold to the last actor in the trafficking chain, the final abuser, at an underground auction or through bilateral bargaining. A majority of trafficking victims are sold to brothel/hotel owners, senior sex workers, or pimps, and they are then forced to engage in prostitution. The destinations and prices of victims vary with their age, beauty, skin color, and virginity status. In the case of victims sold in Bangladesh, the price ranges from 15,000 to 30,000 Bangladesh Taka (BDT) (Terre des hommes Italia 2005). The owner first allows local gangs to rape the victim or puts a sex worker symbol on his/her arms so that he/she gives up on returning home and agrees to engage in sex work (ILO 2002). If the victim is a virgin, clients may seek to rape her because her virginity is seen as giving her additional value.

2.2. Child sex workers in Bangladesh

Sex workers suffer from extremely low social status and severe discrimination. For example, although their retirement age is as early as approximately 30, they cannot marry or return to their hometown after retirement. Since they have a sex worker symbol on their arms or other parts of their body, it is difficult to hide their former occupation. Hence, it is also difficult to find a different job other than housekeeping, which is another type of the worst form of child labor. If they die, their bodies are thrown into a nearby river or buried without the proper ceremonies (Mondal and Islam 2006). Therefore, children enter the sex industry only for compelling reasons. The major reasons include

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[9] ILO (2002, 28) shows that, based on interviews with 100 trafficking victims in Bangladesh, approximately 60 percent of victims were directly transported by the recruiter, while some victims were handed off over five times before reaching their final destination.

living in poverty, desiring to escape from abusive family members, and becoming a victim of human trafficking (Islam and Smyth 2016).

The economic status of sex workers depends on their own characteristics and those of their clients because the sexual practices offered and their prices are determined by bargaining between the provider and client. Prices are generally higher for young, attractive, female workers who provide condom-free sex (Islam and Smyth 2012). They also depend on the client's characteristics, such as their occupation. Rickshaw pullers are charged the lowest price, whereas businessmen and service employees are among those who are charged the highest prices (Bloem et al. 1999). Further, the price increases during the daytime, given the scarcity of supply. Thus, the price varies across transactions and workers, ranging from BDT 50 to 500 (Karim et al. 2008).

This pricing mechanism increases the risk of clients who do not agree with the offered price becoming violent with sex workers (Willman 2008). This threat is exacerbated by the fact that a majority of sex workers trade sex in unsecured places, such as on the street or in the client's or worker's residence, in order to avoid detection by the police. Further, local gangs and corrupt police occasionally commit violence against workers and take away their money (Terre des hommes Italia 2005).

While working conditions vary across workers, this study particularly classifies workers into trafficked and nontrafficked workers. A significant distinction between the two is their outside options. Trafficked workers are always watched by their owners, such as senior sex workers and pimps. If they attempt to escape or refuse to work, the owner likely becomes violent and forces them to take drugs and imbibe alcohol. Eventually, they realize the impossibility of escaping (few outside options) and agree to engage in sex work (ILO 2002, 31; Terre des hommes Italia 2005). By contrast, nontrafficked workers are mainly self-employed and have relatively more freedom over their work.[10]

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[10] However, some nontrafficked workers are coerced to engage in sex work by their parents. The others initially start sex work voluntarily but end up working with pimps and brothel owners who

The fewer outside options available to trafficked individuals could cause them to work under even poorer conditions (Acemoglu and Wolitzky 2011; Chwe 1990). On the one hand, nontrafficked workers can choose the number of clients to take per day and whether to use condoms.[11] They also keep the whole payment from the client for their wage. On the other hand, trafficked workers' owners bargain with the clients, and therefore, the workers have no choice over their clients, sexual practices, or condom use (ILO 2002). The owners take part of the payment from the clients, and the workers receive the remainder as their wage. Furthermore, some owners/pimps do not allow their workers to use condoms, so that they can charge more money, which increases the risk of contracting an STD infection (Karim et al. 2008).

3. Dataset

3.1. CSEC survey

This study employs two types of data: survey data collected from child sex workers and administrative datasets at the district level. First, we use the *Commercial Sexual Exploitation of Children (CSEC) Pilot Survey*, which is a nationally representative survey for child sex workers. This survey was conducted in 2008 by the Bangladesh Bureau of Statistics with technical assistance from ILO. The survey covers rural and urban areas in 54 of the 64 Bangladeshi districts, and all types of sex workers were interviewed, such as those based in brothels, hotels, their own residences, and on the street and those who work as call girls. The interviews were conducted in the same manner regardless of the type of worker to maintain the comparability of their answers. Distinctive features of this dataset include that it exclusively samples child sex workers aged 17 or under, and it covers detailed information about

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take away their earnings.

[11] In fact, sex workers in general can physically tolerate 4 to 5 clients per day (Karim et al. 2008). Therefore, it is common for nontrafficked workers to take 2 or 3 clients per day and not to work every day.

human trafficking. A drawback of this dataset is, however, the lack of information at the sexual act level, making it impossible to control for worker fixed effects.

In general, the challenge in conducting a survey on sex workers arises from difficulties related to the sampling methodology. Given the informality and illegality of the industry, it may be difficult to list all child sex workers in the study area. A low response rate might be another concern. To mitigate these issues, the CSEC survey team concealed their official identity during the interview, and the team members included local NGOs and sex workers who were familiar with the study area and local sex workers.[12] Using this approach, 1418 responses from 1435 total workers in the sample were obtained, including 133 brothel-based girls, 198 hotel-based girls, 264 residence-based girls, 499 street-based girls, 141 boys, and 183 eunuchs. Finally, to adjust the difference in the sampling probability across regions and types of sex workers, the sampling weight of each respondent was computed based on the obtained sample and the estimated number of total sex workers by region and type. More details about the sampling methodology are documented in Online Appendix A1. Figure A1 in the online appendix depicts the distributions of the respondents' age and years of schooling. It appears that the youngest respondent was eight years old, and approximately half of the sex workers had zero years of schooling.

It should be emphasized that the trafficking victims in particularly exploitive conditions— such as those who are addicted to drugs, who are frequently tortured by their owners, or who do not receive wages—may be hidden by their owners and excluded from the sample list. However, this sample-selection problem should attenuate the estimated effect of trafficking victimization on

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[12] More specifically, the stratified random sampling was implemented with a total of 143 primary sampling units (PSUs) in six strata: (1) brothels, (2) divisional cities, (3) cities with the population of over 100,000, (4) district headquarters, (5) subdistrict headquarters, and (6) remaining towns. Then, a list of all child sex workers in each PSU was created with a help of local sex workers and NGOs. The survey team obtained a list with a total of 5239 child workers through this process. This implies that the number of child sex workers all over the country is estimated to be 18,902.

working conditions. Therefore, this should not qualitatively affect the interpretation of results.

In addition to the CSEC survey, we use administrative data at the district level, such as the 2001 population census and the 2011 district statistics (Bangladesh Bureau of Statistics 2007, 2013). We also employ information on the natural disasters that occurred before the survey. Since the CSEC survey includes data on the home district of respondents, we combine these datasets to explore the role of home district characteristics—such as the socioeconomic status and frequency of disasters—in the propensity to be entered into the sex industry through human trafficking.

3.2. Variables and summary statistics

Our main independent variable is the indicator of human trafficking victims. In the CSEC survey, the respondents were asked whether they were victims of human trafficking, and 101 respondents responded affirmatively.[13] We use this self-reported variable as an indicator of being a trafficking victim. According to this measure, 12.5 percent of child sex workers are victims of human trafficking after adjusting for the sampling weight, suggesting that as of 2008, approximately 2370 victims of trafficking were forced to engage in child sex work in Bangladesh.[14]

However, an obvious issue here is that this variable may contain reporting errors because of a poor understanding of the meaning of human trafficking. To test the validity of this measure, we first examine whether the respondents have knowledge regarding human trafficking. In this survey, the respondents were asked whether they have heard about human trafficking and from which information sources. Table 1 shows that 86.5 percent of the respondents have heard at least from one source, and

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[13] Specifically, the following question was asked: *Are you a victim of trafficking?* The answer options include *yes* and *no*.

[14] Islam and Smyth (2016) report that even larger proportion (27%) of adult sex workers in Bangladesh who entered the sex industry due to trafficking. However, we need to be cautious in comparing these datasets. First, they use a survey in 2005 with adult workers. Second, a half of their respondents were sampled from brothel-based workers, and they do not adjust the sampling weight.

the average respondents have heard from 1.88 sources with the most common sources being the radio, TV, and friends. While the knowledge level may differ with the self-reported victimization, 85.3 percent of nontrafficked workers still have access to information regarding human trafficking, confirming that the lack of information is unlikely serious.

Second, we investigate whether the self-reported victimization conforms to the definition of human trafficking by exploring the process of starting child sex work. Our dataset contains some relevant information, such as the reasons for entering the sex industry, how long the respondents resided in their current place, and whether the respondents currently work in the same district as their hometown (Table 2). In addition, the trafficked workers were asked two questions regarding the perpetrator of their trafficking (Table 3) and how they were approached (Table 4). Panel A of Table 2 shows that trafficked workers are more likely to start sex work due to deception or involvement of brokers.[15] The same patterns are confirmed in Tables 3 and 4. Table 3 reports that brokers were involved in 58.3 percent of trafficking. This proportion may actually be even higher because 21.1 percent of the victims reported that they were trafficked by strangers, possibly including brokers. Table 4 shows that the major promise used to lure victims into trafficking is the assurance of a job (49.4 percent), followed by the promise to marry (19.6 percent). Next, as shown in Panel B of Table 2, the victims are less likely to have resided in the same place since birth and work in the same district as their hometown. These patterns are consistent with the argument in Section 2 and the definition of trafficking in person by the UN (2000).[16]

To address further concerns regarding reporting errors due to fear of violence by the owners, this study employs an instrumental variable. We also conduct robustness checks by examining

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[15] Admittedly, the answer options are not mutually exclusive. For example, one can enter the sex industry because one's family is poor, and therefore, one could ask a broker, who could actually be a broker of human trafficking, to help them find a decent and well-paying job. In this case, his/her response could be either "poverty", "through a broker", or "deceived".

[16] See Footnote 1.

alternative definitions based on the reasons for starting sex work and whether the respondents can quit their job voluntarily (outside options).

[Table 1]

[Table 2]

[Table 3]

[Table 4]

Panels A and B of Table 5 present the individual and home district characteristics of trafficked and nontrafficked workers, respectively. It appears that trafficked workers are more likely to be female and from a rural area and to have been a student before engaging in sex work. Since trafficking brokers lure children into trafficking through false offers of a well-paying job, it is unsurprising that they target students who are interested in working in urban areas. The home district characteristics do not differ significantly between trafficked and nontrafficked workers. Figure 1 depicts the geographic distribution of trafficked and nontrafficked workers by their home district.

Panel C of Table 5 summarizes the outcome variables, such as the number of clients per week and the wage per client. It appears that trafficked workers take on more clients. The mean wage per client for nontrafficked workers is approximately BDT 100, which is comparable to the amount reported in other studies on Bangladeshi sex workers (Islam and Smyth 2012; Karim et al. 2008; Terre des hommes Italia 2005, 70).[17] Although it is lower than that of trafficked workers, this pattern disappears in the OLS results, which control for observed characteristics as demonstrated in Section 5.2. It also shows that victims are 21 percentage points more likely to take drugs and 16 percentage points more likely to experience violence from senior sex workers and pimps. They also face violence from gangs and clients and experience arrest. Further, 48 percent and 70 percent of trafficked workers

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[17] To compare wages from sex work with those from other occupations, Table A1 in the online appendix reports the daily sex-work wages and daily agricultural and nonagricultural wages in their home districts. This finding shows that if the sex workers had not entered the sex industry and if they had worked in their home district, they would have earned only 40 percent less.

have experienced the health problems of injury/accident and fever/headache, respectively, within that last six months. Although the prevalence of experiencing an STD within the last six months is comparable between trafficked and nontrafficked workers, the proportion of trafficked workers who use condoms consistently is significantly higher than that of nontrafficked workers who do so. A likely explanation for this is that, as shown at the bottom of the panel, nontrafficked workers do not have knowledge about STDs, and they may not notice such infections. We provide suggestive evidence supporting this in Online Appendix A3. However, this measurement error does not affect the interpretation of our main results in Section 5.

[Table 5]

[Figure 1]

4. Identification strategy

4.1. Estimation model

A key issue in estimating the effect of trafficking victimization on working conditions is sample selection driven by unobserved worker characteristics, such as attractiveness, health status, and outside options. This is likely if brokers target children with high profitability. Another source of bias is that our measure of trafficking victims relies on self-reported information.

We therefore mitigate these issues by estimating the following weighted 2SLS model:

$$Traf_{hdi} = \alpha_0 + \alpha_1 IV_h + \alpha_2 X_{hdi} + \alpha_3 H_h + \mu_d^T + \varepsilon_{hdi}^T \qquad (1)$$

$$Y_{hdi} = \beta_0 + \beta_1 Traf_{hdi} + \beta_2 X_{hdi} + \beta_3 H_h + \mu_d^Y + \varepsilon_{hdi}^Y \qquad (2)$$

where $Traf_{hdi}$ takes unity if sex worker i from district h who engages in sex work in district d is a victim of human trafficking and zero otherwise; Y denotes the working conditions, such as experiencing violence, drug use, and the logarithm of the number of clients per week and wage per client; IV denotes the instrumental variable; X denotes the set of individual characteristics, such as

demographics, education, and previous occupation; H denotes the characteristics of the home district that may be correlated with the probability of success in trafficking and the victims' productivity from sex work, such as their socioeconomic status and access to transportation and sanitation infrastructure; μ denotes the working-district fixed effects; and finally, ε is the residual. We use weighted least squares to adjust the heterogeneity of the sampling weight driven in the survey process.

4.2. Instrumental variable

For the instrument, we employ the frequency of natural disasters that occurred in the respondent's home district when they were in the age range with the highest victimization risk. As discussed in Section 2, disasters increase children's risk of becoming human trafficking victims. In particular, since disaster-affected girls seek jobs and marriage opportunities in urban areas, it is easy for brokers to lure them into trafficking (Bangladesh Institute of Peace and Security Studies 2011; ECPAT International 2011; Gazi et al. 2001; Kara 2010; Poncelet et al. 2010; Singh 2012; UNODC 2008).[18] We consider this feature in this study; Bangladesh suffered three disasters during the respondents' teen years—a 2004 flood, a 2007 flood, and a 2007 cyclone—and the average district experienced 1.9 disasters.[19]

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[18] In rural Bangladesh, girls are considered to be suitable for marriage after menarche, and the data show that most girls experience menarche between age 11 and 17 (Field and Ambrus, 2008). In addition, the ready-made garment industry is one of the most attractive job opportunities for young girls. Heath and Mobarak's (2015) survey conducted in garment factories shows that the youngest female workers are 12 years old. Given these arguments, we believe that the risk increases after around age 11, although there is no clear cutoff age for high victimization risk.

[19] It may be insightful to exploit the variations in rainfall for robustness. However, in the context of Bangladesh, it is difficult to predict the severity of floods from the rainfall level. Since three major rivers—the Ganges, Brahmaputra, and Meghna—drain into the Bay of Bengal through Bangladesh, the floods are triggered not only by rainfall in the district but also by rainfall in upstream districts and their flooding levels.

Three points should be emphasized regarding the validity of our instrument. First, unlike exposure to risk from cyclones, whose path is random, exposure to flooding risk is determined geographically. Therefore, flood-prone districts may have different characteristics from the others, causing spurious correlations. We address this possibility by controlling for the districts' exposure to flood risk. Specifically, we control for whether the district was severely affected by the nationwide flood in 1998. It was one of the most devastating floods in this country, and all of the flood-prone and riverside districts were severely affected. In addition, since the flood occurred 10 years before the survey, the respondents were too young to engage in sex work at that time. Therefore, the 1998 flood is unlikely to be a direct cause of the respondents' entrance into the sex industry. Given these features, controlling for the damage from this flood isolates regional heterogeneity, and the coefficient of disaster frequency between 2004 and 2007 then captures only the impact on victimization of having experienced disaster shocks.[20] The data on the 1998 flood come from the International Food Policy Research Institute (Del Ninno 2001 p11). It defines 30 out of 64 districts as severely affected. Figure A2 depicts the geographic distribution of disaster frequency between 2004 and 2007 (our instrument) and the districts affected by the 1998 flood. It appears that they do not overlap, suggesting that our instrument is unlikely to capture the regional characteristics of flood-prone districts after controlling for the variable of the 1998 flood.

Second, our specifications control for the working-district fixed effects to identify the within-working-district correlation between the working conditions and the disaster frequency of the workers' home districts.[21] We assume that the correlation is attributed to human trafficking. Controlling for the

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[20] There were also nationwide floods in 1987 and 1988. However, we do not use this information, because since that time, the government of Bangladesh has initiated various projects to reduce the flood risk, such as infrastructure development, and the vulnerability to floods has dramatically declined (Table A2). Therefore, the flood damage in 1987/1988 may not predict the flood vulnerability after 2004.

[21] In our dataset, the average district includes sex workers from 5.5 different home districts.

fixed effects is important for two reasons. First, natural disasters in a hometown may affect sex workers' working conditions by directly influencing the regional economy of the working district if these two locations are close to each other. Second, the disaster frequency in a hometown may be correlated with the disaster frequency in the working district, which, in turn, affects the sex workers' working conditions. These violate the exclusion restriction. The fixed effects capture the heterogeneity in the regional economy of the working district, thus addressing these issues.

Finally, disasters also cause impoverished children to enter the sex industry through other channels, such as coercion by their parents. Therefore, the net effect of natural disasters on the propensity for sex workers to enter the industry through human trafficking may be ambiguous. Nonetheless, we expect a positive net effect for two reasons. First, the Bangladesh Bureau of Statistics (2011, 152) demonstrates that while the poor adopt various risk-coping strategies in the face of negative shocks, it is rare for them to send their children to work in another place. Making the decision to engage in sex work might be triggered by other factors, such as living in permanent poverty. Therefore, after socioeconomic status, indicated by factors such as housing materials, is controlled for, the frequency of disasters should have a positive effect on the number of trafficking victims. Second, since trafficking recruiters are members of crime syndicates who seek to maximize their profit, they are likely to move across districts to find potential victims with higher profitability. Therefore, there are likely large incentives for them to look intensively for children in disaster-affected districts. Table A3 in the online appendix provides results supporting this argument. Columns (1) to (3) show that the frequency of disasters in the home district is positively correlated with the number and proportion of trafficked sex workers from that district, while the other district characteristics are not. The number of nontrafficked workers is correlated only with the population size.

4.3. Threats to identification

4.3.1. Unobserved heterogeneity

Our identification strategy may be subject to the following issues. First, unobserved worker characteristics, such as attractiveness, health status, and outside options, may differ between the sex workers from disaster-affected and nonaffected districts.[22] To address this issue, our specification controls for the district's exposure to flood risk. In addition, our instrument includes cyclone damage, which occurs exogenously. Nonetheless, this problem may still be likely if the disasters between 2004 and 2007 incidentally occurred in particular districts, such as districts with poor and unhealthy populations. Another possibility is selective entry into the sex industry; even if there is no correlation between disaster frequency and district characteristics, experiencing disasters can cause those who would not normally enter the sex industry, such as attractive and educated girls, to engage in sex work. This also causes a sample selection problem.

We adopt two approaches to assess these possible issues. First, we conduct a falsification test using the respondents who started sex work between 2004 and 2006. Given that nationwide disasters occurred in 2004 and 2007, the trafficking indicator and working conditions of these workers could be affected by the 2004 disaster but should not be affected by the 2007 disasters, since the workers had already started sex work by that time. We test this by regressing the working conditions on the frequency of disasters that occurred in 2007 and between 2004 and 2006 as follows:

$$Y_{hdi} = \gamma_0 + \gamma_1 Dis2007_h + \gamma_2 Dis2004\_2006_h + \gamma_3 X_{hdi} + \gamma_4 H_h + \mu_d + \varepsilon_{hdi}, \quad (3)$$

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[22] This issue can be mitigated by using time-varying information on natural disasters. Specifically, the use of disaster frequency that occurred during the age of high victimization risk, as the instrument enables us to control for the home district fixed effects and exploit within-home-district variation. However, we cannot use this approach, because in our sample, the age of respondents ranges from 8 to 17 years old. When the 2007 and 2004 disasters occurred, 98% and 76%, respectively, of the respondents from the affected districts were aged 11 or older and were therefore exposed to high levels of risk. As such, the home district fixed effects absorb over 80% of the variation in the frequency of disasters occurring after age 11.

where $Dis2007$ and $Dis2004\_2006$ denote the frequency of natural disasters that occurred in 2007 and between 2004 and 2006, respectively. Thus, our instrument is the summation of these variables. Significant coefficients of the 2007 disasters imply the violation of the exclusion restriction, but Table A4 demonstrates that none of the 24 outcomes are significantly correlated at the 10 percent level.

Second, we regress the unemployment rate and female literacy rate of the home district in the predisaster period (in 2001) on the instrument and the other district characteristics. The results in Columns (4) and (5) of Table A3 show that the disaster frequency is uncorrelated with these district characteristics. We also test the possibility of selective entry in Columns (6) and (7) by regressing the proportion of educated and young sex workers from the district. The coefficients of disaster frequency are insignificant for both columns, suggesting that disaster shocks do not affect the distribution of age or education level among sex workers.

4.3.2. *Credit constraints*

Natural disasters may trap affected households through credit constraints. This increases sex workers' incentive to trade (unprotected) sex with more clients to obtain remittances to send to their family (Robinson and Yeh 2011). However, we show in Online Appendix A2 that disaster frequency in the home district is not associated with daily income. We further test this possibility by examining the association between disaster frequency and both remittance behavior and condom use. Columns (1) and (2) of Table A5 report the result. The coefficients of disaster frequency are small and statistically insignificant, ruling out the possibility of the credit constraint issue.

4.3.3. *The persistent effect of disasters and selective exits from the sex industry*

The third issue is that disasters may negatively affect the attractiveness and health status of children in the district, which in turn lowers the wage of sex workers. Likewise, if disasters persistently aggravate

job opportunities in the home district, sex workers from severely affected districts may have no option of returning to their hometown. This increases their willingness to stay in the sex industry and therefore their effort level. To test these possibilities, we regress the unemployment rate and the proportion of disabled individuals in the district at the postdisaster period (in 2011) on the home district characteristics.[23] The results are reported in Table A3 (Columns (8) and (9)). The estimated disaster coefficients are statistically insignificant.

In addition, experiencing a disaster might also affect children's preferences, such as their social trust (Cassar, et al., 2017), risk (Cameron and Shah 2015), and time (Hanaoka, et al., 2018) preferences. In the context of Bangladesh, Ahsan (2014) shows that disasters make people more risk averse, while trusting behavior does not change. This concern could be crucial if disaster-affected and risk-averse workers hesitate to engage in condom-free sex and earn lower wages. However, as shown in Column (2) of Table A5, we do not find a systematic difference in condom use between workers from disaster-affected districts and those from nonaffected districts.

4.3.4. *Awareness of trafficking risk*

Finally, sex workers from disaster-affected districts may be more aware of trafficking risks and thus more likely to self-report victimization. However, this explanation is not supported by the results of the falsification test (Table A4). Furthermore, we test this issue by analyzing the association between disaster frequency and whether the worker has ever heard about human trafficking from their family, community members, or the media. The estimation result is presented in Column (3) of Table A5. It appears that, contrary to our prediction, the coefficient of disaster frequency is small and statistically insignificant.

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[23] Although the dependent variables should ideally be the data from 2008 when the survey was conducted, the official statistics from that year are not available.

5. Results

5.1. First stage result

Table 6 presents the determinants of trafficking victimization. Our main finding is that the disasters that occurred in the workers' home districts between 2004 and 2007 are positively related to trafficking victimization, while the 1998 flood is not. This is consistent with the argument that teenagers in disaster-affected areas are at especially high risk of becoming a trafficking victim. Column (1) demonstrates that one additional natural disaster increases the probability of sex workers entering the industry through human trafficking by 10.1 percentage points. The insignificant coefficient of the 1998 flood suggests that the regional characteristics of flood-prone districts are uncorrelated with trafficking victimization, strengthening the validity of our instrument. Regarding the other characteristics, trafficked workers are more likely to be from less populated districts and have previously resided in poor housing. These results are consistent with the fact that recruiters lure vulnerable children into trafficking by offering them well-paying jobs.

[Table 6]

5.2. Main results

This section shows the association between trafficking victimization and working conditions. Given that younger workers are more profitable for owners but also more likely to refuse to work (see Section 2), they may face different working conditions than older workers. Therefore, we present the IV results for workers aged 15 or younger, in addition to the full sample results. We also report the OLS results for comparison.

First, to ensure that the trafficking victims are involuntarily engaging in sex work under threat of punishment, we examine the effect on the freedom to quit their job voluntarily, drug use, and violence committed by senior sex workers or pimps, who are generally the owners of trafficking

victims. Table 7 shows that trafficking victims are over 80 percent more likely to report that they cannot leave their job voluntarily (Columns (2) and (3)). Furthermore, the results from young workers suggest that trafficking victims are more likely to use drugs and experience violence from senior sex workers or pimps than are nontrafficked young workers (Columns (6) and (9)). The table also reports false discovery rate q-values (Anderson 2008) to adjust the p-values of the outcomes, confirming the robustness of our results. These findings are consistent with the argument in Section 2; generally, trafficking victims initially refuse to work and are therefore exposed to more violence. However, with time, they eventually realize the impossibility of escaping and accept the job. Thus, even elderly workers still believe that they cannot quit. Finally, girls are more likely to experience violence than boys and eunuchs and less likely to believe that they can quit.

Second, in Table 8, we examine the victimization effects on the number of clients and wages. Column (2) shows that the number of clients per week is 190 percent larger.[24] The trafficked workers with the sample mean characteristics have 37.2 clients per week, whereas the nontrafficked workers take only 12.8 clients. The workload of trafficked workers is higher than workers in general can physically tolerate.[25] Further, Column (5) suggests that trafficked workers earn a 67.8 percent lower wage per client than that of nontrafficked workers.[26] The results are robust to the adjustment of the p-value with the multiple hypothesis testing and subsample estimations of young workers (Columns (3) and (6)). Finally, after adjusting the p-values, we find a lower daily wage of trafficked workers compared to nontrafficked workers (Columns (8) and (9)).

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[24] The average treatment effect is computed by exp(1.064)-1=1.90.

[25] Even adult sex workers can physically tolerate at most 4 to 5 clients per day, and they do not work every day in Bangladesh (Karim et al., 2008, p.19).

[26] It should be mentioned that the wage gap is not fully attributed to the share that the owner takes. The price of each transaction is determined by bargaining, and bargaining power with clients may differ between nontrafficked child sex workers and the owners of victims. Hence, it is unwise to assume that the clients pay the same amount regardless of the victimization status of the workers.

Intriguingly, unlike the significant victimization effects on experiencing violence and drug use among young workers, the impact of victimization on the number of clients among young workers is smaller than that among all workers, and it is only marginally significant. Similarly, in Column (6), the estimated wage gap per client is reduced to -50.6 percent. If owners use violence as a tool to force their trafficked workers to trade sex with more clients at a lower wage, we should expect an even larger impact among young workers. However, this does not necessarily contradict the hypothesis of coercion by the owner. These results can be explained by the owner's incentive to maintain the victim's productivity; if the owners treat their victims arbitrarily badly, the latter cannot work as hard or cannot be resold (Chwe 1990, 1113). Further, the brothels/hotels employing unhealthy workers may obtain a bad reputation for high STD risk and thus lose risk-averse clients. Thus, owners have incentives to care about the health condition of their workers. We elaborate on this possibility in Section 5.3.

Regarding other worker characteristics, the number of clients and daily wages increase with the age of workers. This is consistent with the argument that older workers can tolerate trading sex with more clients than younger workers can (Karim et al. 2008). Counterintuitively, the wage per client in our data does not change, presumably because our sample includes only child sex workers. Finally, educated and female workers earn higher wages per client and a higher daily wage.

[Table 7]

[Table 8]

5.3. Health consequences of victimization

This subsection examines the health consequences of victimization, such as experience of contracting STDs, suffering an injury/accident, and experiencing a fever/headache. Our findings regarding the victims' heavy workload suggest that they are also more likely to face health problems than nontrafficked workers. However, if the owners control the extent of their coercion to maintain the productivity of their victims, as suggested by the results from the young workers, we may not find

differences in health conditions between workers.

Table 9 shows mixed results. On the one hand, the trafficking victims are more likely to experience fever and headache. On the other hand, the impacts on STDs, injuries, and accidents are unstable across specifications and are statistically insignificant. These results suggest that the worse working conditions of the victims in terms of exposure to violence, higher number of clients, and lower wages lead to health problems, such as fever and headache, while the owners manage to shield them from STDs as STDs affect their productivity.

The findings from Table 9 raise another question about how owners maintain their workers' health conditions. To explore this issue, we test three types of compensation from owners. First, we examine the association with five binary indicators for the receipt of in-kind support: food, clothing, accommodation, usage of condoms, and access to medical facilities.[27] Panel A of Table 10 shows that trafficked workers are more likely to receive accommodation support and have better access to medical facilities (Columns (5) and (9)) than nontrafficked workers. It also appears that trafficked workers use condoms as frequently as nontrafficked workers (Column (7)), which may account for the insignificant difference in the prevalence of STDs. However, we need to be cautious about the interpretation of these results because the provision of accommodation may be a form of confinement rather than support. In addition, young trafficking victims are *less* likely to receive food support than nontrafficked workers in the same age group.

Second, owners may protect their workers from violence and abuse by clients, local gangs, and police. We test this hypothesis by examining the binary indicators for the experience of police detection and violence by local gangs and clients, as well as a dummy if the main clients include police or pimps. The hypothesis predicts a negative coefficient, but it is not supported in Panel B of Table 10.

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[27] Access to medical facilities is elicited from the following question: *From whom do you generally get medical treatment?* The answer options are (1) no treatment, (2) doctor, (3) pharmacy, (4) nurse, (5) Kabiraj, (6) clinic, and (7) other. The indicator takes unity if the answer includes (2), (3), (4), or (6).

Third, owners may provide victims with knowledge about STDs so that they can protect themselves from the risk of infection. In Panel C of Table 10, we test this possibility by examining workers' knowledge about HIV transmission and their awareness of STDs.[28] While Columns (19) and (20) demonstrate positive coefficients, they are statistically insignificant after adjusting the p-values. Therefore, the observed patterns do not support the hypothesis.

Given these results, the insignificant difference in the prevalence of STDs may be driven by the provision of in-kind support by the owners, such as condoms and medical facilities.

[Table 9]

[Table 10]

5.4. Robustness tests and alternative interpretations

In Online Appendix A2 (Panels A to K of Table A6), we test the robustness of our findings by examining the following: (Panels A to B) models with alternative definitions of trafficking victims; (C) the model with a reduced form; (D to G) plausibly exogenous instrumental variable models, which are robust to the violation of the exclusion restriction (Conley et al., 2012; Nevo and Rosen, 2012); (H) the model addressing selective exits from the sex industry; (I) the model excluding brothel-based workers; (J) the model addressing reporting errors; and (K) the model incorporating the nonlinear effects of age. The results are robust to the changes in the estimation models.

In Online Appendix A3, we test four alternative interpretations for more clients and lower wages for trafficked workers—(1) poor quality of service, (2) secret use of condoms, (3) receipt of in-

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[28] Data on the knowledge about HIV/AIDS are elicited from the following questions. *How do you think HIV/AIDS is transmitted?* Multiple answers are allowed. The answer options include (1) mother to child, (2) blood transfer, (3) use of the same needle, (4) unprotected sex work, and (5) other. We generate two binary indicators for whether the respondent knows that infection can occur through unprotected sex and through sharing injection needles with someone. Awareness of STDs is elicited from the following question: *Are you aware of sexual diseases? Yes/No.*

kind support, and (4) coercion by clients—and two alternative interpretations for comparable health outcomes— (5) poor knowledge about STDs and (6) poor access to medical services. However, these hypotheses cannot fully explain the observed patterns.

6. Conclusions

We employed survey data collected from child sex workers in Bangladesh and uncovered economically and statistically significant gaps between the working conditions of trafficked workers and those of nontrafficked workers. Trafficking victims are more likely to suffer from drugs and violence and to involuntarily engage in sex work than nontrafficked workers. Furthermore, they trade sex with 190 percent more clients and earn 67.8 percent lower wages per client. As a result of such exploitative conditions, they are also more likely to suffer from fever and headaches. In contrast, we do not find systematic differences in their experiences with STDs, injuries, or accidents. We also provide evidence that trafficked workers have better access to medical facilities than nontrafficked workers, and the frequency of using condoms is comparable between the workers. These findings suggest that the owners manage to protect the trafficked workers from STDs despite their worse working conditions as STDs affect their productivity.

These findings suggest that trafficking victims suffer from two areas of coercion. First, they are forced to engage in an occupation whose working conditions are poor in general. Second, they are forced to work under particularly poor conditions even within that occupation. This study suggests that the second area of coercion crucially affects the workers' experience with violence, their wages, and the overall labor supply. However, although existing studies have reported that victims of trafficking suffer from poor health (Oram et al. 2012; Tsutsumi et al. 2008), this is partly attributed to the first area of coercion. In other words, this is a common issue for sex workers regardless of their trafficking victimization.

The following policy implications can be derived. First, the risk of trafficking increases for

disaster-affected individuals attempting to find job and marriage opportunities. This confirms the importance of programs in such areas that raise children's awareness of the risk of trafficking as well as their knowledge about common trafficking approaches and how to escape from trafficking brokers. Second, it also suggests that the provision of effective disaster relief and rehabilitation programs not only reduces poverty but also protects affected children from the risk of human trafficking. Third, it is not suitable to evaluate sex workers' working conditions by their condom use and prevalence of STDs alone because the owners have an incentive to protect their workers from STDs. Both practitioners and researchers should assess their conditions with a broader range of outcomes, including exposure to violence and receipt of pecuniary and non-pecuniary support. Fourth, if the relationship between the owner and trafficked worker is characterized by the principal-agent framework, as argued by Acemoglu and Wolitzky (2011) and Chwe (1990), their working conditions may improve if they have outside options available. Such interventions could include programs to rescue the victims and to support their rehabilitation. However, these implications must be interpreted with caution since they hinge on the validity of our identification strategy and the dataset. Further studies are required to draw conclusions.

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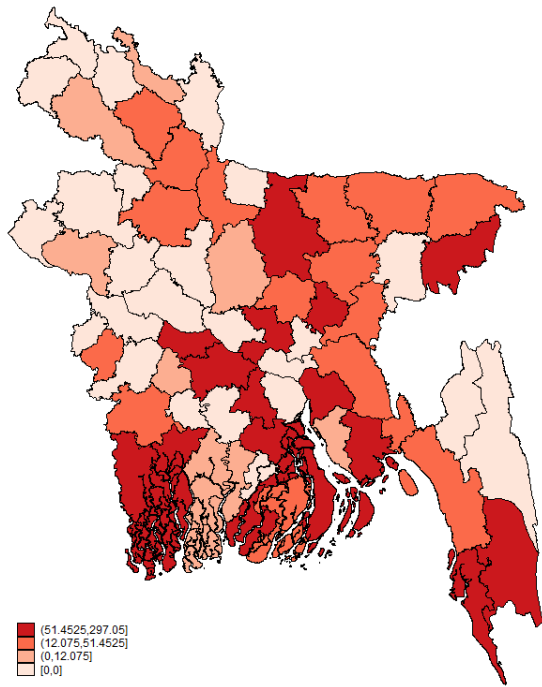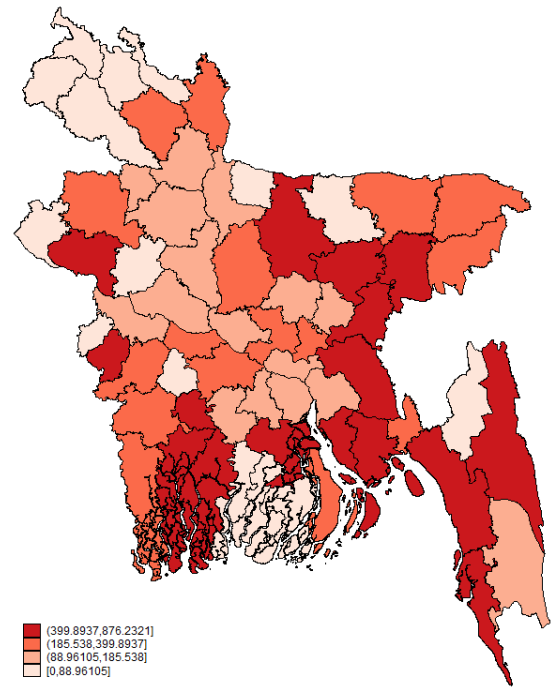
(a) Trafficked Sex Workers	(b) Nontrafficked Sex Workers

The statistics are adjusted by the sample weight.

Figure 1: Geographical Distribution of Sex Workers by Home District

Table 1: Sources of Information Regarding Human Trafficking

		Self-reported victim		
	Total	Yes	No	Diff.
Had heard about human trafficking from at least one source	86.5%	94.8%	85.3%	***
Number of information sources	1.88	2.15	1.84	***
Information sources:				
Newspaper	10.4%	12.1%	10.2%	
Radio/TV	68.9%	78.3%	67.5%	***
Friends	54.7%	69.7%	52.5%	***
Family	9.6%	9.1%	9.7%	
Neighbors	28.9%	28.9%	28.9%	
Leaflet/Poster	9.8%	9.6%	9.9%	
Others	5.2%	6.8%	5.0%	
N	1,418	101	1,317	

Multiple answers were allowed. The statistics are adjusted by the sample weight. * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level.

Table 2: Process of Starting Sex Work by Self-Reported Trafficking Victimization

		Self-reported victim		
	Total	Yes	No	Diff.
	%	%	%	
Panel A: Reasons for Sex Work				
Poverty	52.8	30.7	56.0	***
Harassment from family	12.5	14.6	12.2	
Deceived (marriage, job, etc.)	9.4	17.6	8.2	***
Through a broker	7.4	30.2	4.1	***
Victim of circumstances	6.3	4.2	6.6	
Own interest	5.9	2.5	6.4	**
Other	5.7	0.2	6.5	***
Panel B: Mobility				
Residing in the current place since birth	25.9	5.1	28.9	***
Working in the same district as hometown	53.7	26.2	57.7	***
N	1,418	101	1,317	

The statistics are adjusted by the sample weight. * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level.

Table 3: Perpetrator of Human Trafficking

	%
Broker	58.3
Lover/friend	26.8
Stranger	21.1
Neighbor	12.3
Relative	10.4
Husband	3.7

The data were collected from 101 self-reported victims of human trafficking. Multiple answers were allowed. The statistics are adjusted by the sample weight.

Table 4: Approach of Human Trafficking

	%
Assurance of job	49.4
Promise to marry	19.6
Sold by family, relative, lover, or friend	17.3
Kidnapped	7.4
Other	6.4

The data were collected from 101 self-reported victims of human trafficking. The statistics are adjusted by the sample weight.

Table 5: Summary Statistics

	Trafficked (N=101)		Nontrafficked (N=1317)		
	Mean	S.D.	Mean	S.D.	
Panel A: Worker Characteristics					
Age	15.58	1.30	15.46	1.68	
Years of schooling	2.95	2.90	2.50	2.88	
1 if a boy#	0.04	0.20	0.08	0.28	**
1 if a eunuch#	0.03	0.18	0.10	0.30	**
1 if previous occupation was as a student ##	0.23	0.42	0.12	0.32	*
1 if previous occupation was wage work ##	0.21	0.41	0.23	0.42	
1 if previous occupation was sex work ##	0.05	0.22	0.06	0.23	
1 if previous occupation was in another category ##	0.02	0.15	0.09	0.29	***
1 if Muslim	0.96	0.20	0.92	0.26	
1 if original residence was made of better-quality material	0.48	0.50	0.36	0.48	
1 if hometown was urban	0.23	0.42	0.41	0.49	***
Panel B: Home District Characteristics					
Frequency of disasters: 2004-2007	1.99	0.90	1.84	0.91	
1 if severely affected by the 1998 flood	0.43	0.50	0.45	0.50	
Log (Population)	14.45	0.63	14.48	0.63	
Number of train stations	7.39	8.42	8.94	11.18	
Log (Number of migrants)	11.40	1.17	11.51	1.01	
Daily wage for children in agricultural sector	141.4	40.1	138.7	66.9	
Proportion of residences made from poor-quality material	10.69	7.88	8.77	5.27	*
Proportion of households with access to tap water	4.13	9.91	4.13	8.47	
Panel C: Outcome Variables					
1 if unable to quit voluntarily	0.33	0.47	0.22	0.41	
1 if uses drugs	0.37	0.49	0.16	0.36	***
1 if has experienced violence from senior sex workers or pimps within the past year	0.24	0.43	0.08	0.28	**
Clients per week	23.78	13.36	17.27	11.87	***
Wage per client	119.21	88.45	107.18	84.22	
Wage per day	453.10	259.81	346.26	257.19	***
1 if has experienced STDs within the last 6 months	0.49	0.50	0.43	0.50	
1 if has experienced injury/accident within the last 6 months	0.48	0.50	0.18	0.39	***
1 if has experienced fever/headache within the last 6 months	0.70	0.46	0.53	0.50	***
1 if receives food support	0.44	0.50	0.23	0.42	***
1 if receives clothing support	0.23	0.42	0.21	0.41	
1 if receives accommodation support	0.20	0.40	0.10	0.30	
1 if always uses condom	0.54	0.50	0.38	0.48	**
1 if has access to hospital/clinic/pharmacy	0.93	0.26	0.80	0.40	***
1 if has been arrested within the last year	0.64	0.48	0.23	0.42	***
1 if has experienced violence from a gang within the last year	0.46	0.50	0.16	0.36	***
1 if has experienced violence from a client within last year	0.26	0.44	0.12	0.32	**
1 if clients include police or pimps	0.32	0.47	0.32	0.47	
1 if knows HIV can be contracted through unprotected sex	0.91	0.28	0.76	0.43	***
1 if knows HIV can be contracted through shared injection needles	0.75	0.44	0.54	0.50	***
1 if aware of STDs	0.95	0.21	0.81	0.40	***
1 if sends remittances to family	0.41	0.49	0.63	0.48	***
1 if had heard about human trafficking from at least one source	0.95	0.22	0.85	0.35	***

We compute the number of clients per week by multiplying the average working days per week and the average number of clients per day. However, it is challenging to obtain reliable data on the wages of child laborers. As

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prices vary across clients, data on the wage earned from each transaction are unavailable. Therefore, we compute this variable by dividing the average daily wage in cash by the average number of clients per day. The statistics are adjusted by the sample weight. * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level. [#] reference is a girl. [##] reference has no job.

Table 6: First Stage Result: Determinants of Trafficking Victims

	Sample:	Full		Age<=15	
		OLS	Probit	OLS	Probit
		(1)	(2)	(3)	(4)
Frequency of disasters from 2004-2007		0.101***	0.111***	0.205***	0.471***
		(0.037)	(0.037)	(0.054)	(0.094)
Age		0.000	0.002	0.006	0.021
		(0.006)	(0.010)	(0.015)	(0.043)
Years of schooling		0.004	0.004	0.001	-0.009
		(0.006)	(0.008)	(0.010)	(0.027)
Boy		-0.098	-0.122	-0.144	-0.422**
		(0.079)	(0.125)	(0.094)	(0.212)
Eunuch		-0.065*	-0.124*	0.037	0.189**
		(0.038)	(0.068)	(0.049)	(0.094)
Previous occupation was as a student		0.029	0.033	-0.029	0.054
		(0.042)	(0.043)	(0.036)	(0.061)
Previous occupation was wage work		-0.009	-0.002	-0.059	-0.131
		(0.029)	(0.041)	(0.061)	(0.133)
Previous occupation was sex work		-0.061	-0.049	-0.184*	
		(0.054)	(0.084)	(0.101)	
Previous occupation was in another category		-0.134**	-0.207***	-0.252***	
		(0.053)	(0.076)	(0.056)	
Muslim		0.041	0.059	0.169**	0.456**
		(0.036)	(0.080)	(0.069)	(0.225)
Original residence was made of better-quality material		-0.035**	-0.041***	-0.035	-0.161
		(0.016)	(0.013)	(0.047)	(0.102)
Hometown is urban		-0.051	-0.057	0.011	0.069
		(0.049)	(0.070)	(0.068)	(0.115)
Observations		1,302	797	468	165
Working district fixed effects		Yes	Yes	Yes	Yes
Home district characteristics		Yes	Yes	Yes	Yes
F statistics of the excluded instrument [#]		26.0		31.7	
Proportion of negative fitted value (%)		21.1		24.1	
Proportion of fitted value greater than 1 (%)		0.0		0.0	
R-squared		0.232		0.383	

The sample size is reduced to 1302 because of missing values. The estimation result is adjusted by the sample weight. Marginal effects at the mean are reported in Columns (2) and (4). Standard errors clustered at the working district level are in parentheses. * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level. The sample size is smaller in the probit model due to the collinearity of working-district fixed effects. # Effective F statistics for the Montiel-Pflueger robust weak instrument test are reported in Columns (1) and (3) (Montiel Olea and Pflueger 2013). The critical value for τ=10% is 19.7 for both columns. Home district characteristics include the variables reported in Panel B of Table 5.

Table 7: Second Stage Result: The Impact of Trafficking Victimization on Experiences of Coercion and Violence

	1 if unable to quit			1 if uses drugs			Violence from senior sex workers or pimps		
	OLS	IV	IV	OLS	IV	IV	OLS	IV	IV
	Full	Full	Age<=15	Full	Full	Age<=15	Full	Full	Age<=15
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Trafficking victim	0.190***	0.825*	0.894***	0.225***	0.468	0.485***	0.121**	0.338	0.499***
	(0.046)	(0.436)	(0.221)	(0.042)	(0.320)	(0.151)	(0.055)	(0.219)	(0.057)
		[0.046]**	[0.001]***		[0.078]*	[0.002]***		[0.078]*	[0.001]***
Age	-0.011	-0.012	0.002	0.002	0.002	-0.025*	-0.013	-0.013	-0.026
	(0.009)	(0.010)	(0.024)	(0.006)	(0.006)	(0.015)	(0.013)	(0.013)	(0.016)
Years of schooling	-0.006	-0.009	-0.015	-0.001	-0.002	-0.002	-0.003	-0.003	-0.006
	(0.006)	(0.008)	(0.013)	(0.006)	(0.006)	(0.012)	(0.005)	(0.005)	(0.008)
Boy	0.083	0.143**	0.063	0.131***	0.154***	0.117**	-0.092**	-0.071**	-0.105**
	(0.052)	(0.058)	(0.056)	(0.048)	(0.056)	(0.056)	(0.038)	(0.031)	(0.051)
Eunuch	0.454***	0.489***	0.436***	0.029	0.042	0.079	-0.087**	-0.075**	-0.141***
	(0.089)	(0.081)	(0.154)	(0.057)	(0.056)	(0.087)	(0.037)	(0.033)	(0.055)
Previous occupation was as a student	-0.072*	-0.089**	-0.008	0.029	0.022	-0.045	-0.027	-0.033	0.000
	(0.038)	(0.043)	(0.041)	(0.052)	(0.048)	(0.092)	(0.047)	(0.050)	(0.034)
Previous occupation was wage work	-0.010	-0.008	0.093	0.022	0.023	0.120	0.013	0.014	0.095
	(0.048)	(0.061)	(0.097)	(0.037)	(0.041)	(0.091)	(0.043)	(0.042)	(0.061)
Previous occupation was sex work	-0.030	0.000	0.077	-0.071	-0.059	-0.143	0.001	0.011	-0.016
	(0.067)	(0.071)	(0.092)	(0.079)	(0.075)	(0.138)	(0.043)	(0.045)	(0.029)
Previous occupation was in another category	-0.009	0.081	0.219**	-0.024	0.011	-0.089	-0.052*	-0.021	0.010
	(0.044)	(0.097)	(0.095)	(0.029)	(0.062)	(0.060)	(0.029)	(0.053)	(0.073)
Muslim	0.073	0.043	0.133	0.011	-0.001	0.072	-0.010	-0.020	-0.003
	(0.098)	(0.081)	(0.134)	(0.076)	(0.075)	(0.092)	(0.039)	(0.037)	(0.051)
Original residence was made	0.059*	0.081**	0.054	-0.018	-0.009	-0.004	0.029	0.036	0.080*
of better-quality material	(0.030)	(0.039)	(0.067)	(0.048)	(0.051)	(0.055)	(0.031)	(0.033)	(0.042)
Hometown is urban	0.040	0.078*	-0.006	0.071**	0.086*	0.034	0.026	0.039	-0.028
	(0.038)	(0.045)	(0.060)	(0.031)	(0.049)	(0.040)	(0.026)	(0.033)	(0.043)
Working district fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Home district characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,302	1,302	468	1,302	1,302	468	1,302	1,302	468

The estimation result is adjusted by the sample weight. Standard errors clustered at the working district level are in parentheses. Anderson's (2008) q-values, which adjust the p-values of 6 IV coefficients are in brackets. * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level. Home district characteristics include the variables reported in Panel B of Table 5.

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Table 8: Second Stage Result: The Impact of Trafficking Victimization on Working Conditions

	Log clients per week			Log wage per client			Log wage per day		
	OLS	IV	IV	OLS	IV	IV	OLS	IV	IV
	Full	Full	Age<=15	Full	Full	Age<=15	Full	Full	Age<=15
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Trafficking victim	0.191***	1.064***	0.547*	-0.114	-1.134***	-0.706***	-0.033	-0.403	-0.552*
	(0.071)	(0.388)	(0.331)	(0.095)	(0.293)	(0.210)	(0.074)	(0.362)	(0.286)
		[0.009]***	[0.063]*		[0.001]***	[0.003]***		[0.098]*	[0.042]**
Age	0.035***	0.035**	0.022	0.007	0.007	-0.012	0.040***	0.040***	0.023
	(0.012)	(0.014)	(0.030)	(0.011)	(0.013)	(0.028)	(0.009)	(0.008)	(0.028)
Years of schooling	-0.004	-0.007	0.011	0.027***	0.030***	0.007	0.027***	0.028***	0.022
	(0.007)	(0.010)	(0.019)	(0.009)	(0.012)	(0.028)	(0.006)	(0.007)	(0.019)
Boy	-0.363***	-0.280***	-0.430***	-0.383***	-0.481***	-0.448***	-0.660***	-0.696***	-0.763***
	(0.051)	(0.105)	(0.083)	(0.090)	(0.117)	(0.091)	(0.091)	(0.101)	(0.120)
Eunuch	-0.036	0.012	0.216**	-0.385***	-0.441***	-0.186	-0.448***	-0.468***	-0.102
	(0.107)	(0.128)	(0.095)	(0.108)	(0.117)	(0.177)	(0.075)	(0.074)	(0.196)
Previous occupation was as a student	0.035	0.011	-0.110	0.038	0.066	0.152	0.095*	0.105**	0.092
	(0.064)	(0.053)	(0.098)	(0.054)	(0.069)	(0.208)	(0.048)	(0.049)	(0.118)
Previous occupation was wage work	0.041	0.044	0.019	0.012	0.009	0.009	0.023	0.022	-0.001
	(0.074)	(0.083)	(0.072)	(0.090)	(0.103)	(0.153)	(0.070)	(0.073)	(0.147)
Previous occupation was sex work	0.083	0.125	0.087	0.058	0.011	0.154	0.099	0.082	0.158
	(0.083)	(0.105)	(0.122)	(0.085)	(0.107)	(0.188)	(0.072)	(0.077)	(0.125)
Previous occupation was in another category	0.074	0.198	0.173	0.042	-0.102	-0.241	0.116	0.063	-0.140
	(0.099)	(0.135)	(0.167)	(0.132)	(0.177)	(0.195)	(0.108)	(0.147)	(0.158)
Muslim	-0.123	-0.164**	0.015	0.059	0.108	0.246	-0.012	0.006	0.331
	(0.076)	(0.067)	(0.101)	(0.101)	(0.116)	(0.159)	(0.120)	(0.129)	(0.204)
Original residence was made	0.092	0.122	0.106	0.186***	0.151**	0.143	0.236***	0.223***	0.161*
of better-quality material	(0.084)	(0.080)	(0.094)	(0.062)	(0.065)	(0.131)	(0.037)	(0.039)	(0.096)
Hometown is urban	-0.033	0.020	-0.041	0.062	-0.000	0.030	0.025	0.003	-0.004
	(0.050)	(0.068)	(0.078)	(0.066)	(0.102)	(0.141)	(0.060)	(0.068)	(0.107)
Working district fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Home district characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,302	1,302	468	1,297	1,297	466	1,297	1,297	466

The estimation result is adjusted by the sample weight. Standard errors clustered at the working district level are in parentheses. Anderson's (2008) q-values, which adjust the p-values of 6 IV coefficients, are in brackets. * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level. Home district characteristics include the variables reported in Panel B of Table 5.

Table 9: Second Stage Result: The Impact of Trafficking Victimization on Health Condition

	STDs			Injury/Accident			Fever/Headache		
	OLS	IV	IV	OLS	IV	IV	OLS	IV	IV
	Full	Full	Age<=15	Full	Full	Age<=15	Full	Full	Age<=15
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Trafficking victim	-0.030	-0.058	0.584*	0.219***	-0.358	-0.343	0.075	0.909***	0.751***
	(0.147)	(0.480)	(0.343)	(0.057)	(0.302)	(0.367)	(0.075)	(0.290)	(0.196)
		[0.548]	[0.133]		[0.216]	[0.266]		[0.006]***	[0.001]***
Age	0.017	0.017*	0.022	0.011	0.011	0.007	0.010	0.010	-0.001
	(0.010)	(0.010)	(0.021)	(0.007)	(0.008)	(0.013)	(0.016)	(0.014)	(0.015)
Years of schooling	0.011	0.011	-0.010	-0.003	-0.001	-0.001	-0.002	-0.005	-0.011
	(0.009)	(0.009)	(0.009)	(0.005)	(0.005)	(0.020)	(0.011)	(0.009)	(0.018)
Boy	-0.191***	-0.194**	-0.152	-0.019	-0.074	-0.106	-0.105*	-0.025	-0.097**
	(0.064)	(0.082)	(0.116)	(0.026)	(0.051)	(0.092)	(0.058)	(0.085)	(0.046)
Eunuch	-0.101	-0.102	-0.021	0.012	-0.020	-0.012	-0.090	-0.045	-0.085
	(0.128)	(0.131)	(0.133)	(0.040)	(0.047)	(0.043)	(0.115)	(0.128)	(0.112)
Previous occupation was as a student	-0.065	-0.065	0.087	-0.082	-0.067	-0.025	0.044	0.021	0.147
	(0.073)	(0.067)	(0.079)	(0.057)	(0.045)	(0.142)	(0.066)	(0.056)	(0.162)
Previous occupation was wage work	-0.037	-0.037	-0.029	0.085	0.083*	0.069	0.043	0.046	-0.013
	(0.044)	(0.043)	(0.074)	(0.058)	(0.050)	(0.057)	(0.043)	(0.051)	(0.067)
Previous occupation was sex work	0.095	0.094	0.405***	-0.116	-0.144**	-0.101	0.100	0.140	0.319*
	(0.093)	(0.092)	(0.127)	(0.078)	(0.063)	(0.142)	(0.101)	(0.095)	(0.178)
Previous occupation was in another category	-0.076	-0.080	0.163*	-0.095**	-0.176**	-0.256***	-0.062	0.056	0.203**
	(0.064)	(0.080)	(0.095)	(0.040)	(0.075)	(0.095)	(0.059)	(0.078)	(0.086)
Muslim	0.052	0.054	0.157	0.101***	0.128***	0.187*	-0.079	-0.119	0.020
	(0.098)	(0.090)	(0.097)	(0.025)	(0.034)	(0.102)	(0.116)	(0.111)	(0.130)
Original residence was made of better-quality material	-0.036	-0.037	-0.074	0.020	-0.000	0.089***	-0.003	0.026	0.008
	(0.061)	(0.057)	(0.089)	(0.040)	(0.037)	(0.026)	(0.057)	(0.046)	(0.072)
Hometown is urban	0.087**	0.086	0.046	0.002	-0.033	0.023	0.087*	0.138**	0.121**
	(0.042)	(0.052)	(0.054)	(0.030)	(0.058)	(0.082)	(0.049)	(0.060)	(0.053)
Working district fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Home district characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,302	1,302	468	1,302	1,302	468	1,302	1,302	468

The estimation result is adjusted by the sample weight. Standard errors clustered at the working district level are in parentheses. Anderson's (2008) q-values, which adjust the p-values of 6 IV coefficients are in brackets. * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level. Home district characteristics include the variables reported in Panel B of Table 5.

Table 10: Owner's Investment in the Health of the Victim

Panel A: In-kind support	Food		Clothing		Accommodation		Always uses condoms		Access to hospital/clinic/pharmacy	
	Full	Age<=15	Full	Age<=15	Full	Age<=15	Full	Age<=15	Full	Age<=15
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Trafficking victim	-0.296	-0.577***	-0.365	-0.439*	0.470**	-0.115	0.378	-0.138	0.566***	0.316
	(0.417)	(0.151)	(0.390)	(0.262)	(0.204)	(0.167)	(0.503)	(0.372)	(0.178)	(0.300)
	[0.486]	[0.001]***	[0.486]	[0.197]	[0.060]*	[0.486]	[0.486]	[0.743]	[0.005]***	[0.486]
Observations	1,302	468	1,302	468	1,302	468	1,302	468	1,302	468

Panel B: Protection from violence	Arrested		Violence from gang		Violence from client		Clients include police or pimps	
	Full	Age<=15	Full	Age<=15	Full	Age<=15	Full	Age<=15
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Trafficking victim	0.087	0.601*	0.341*	0.469*	0.212	0.366*	-0.159	-0.093
	(0.483)	(0.310)	(0.193)	(0.274)	(0.219)	(0.191)	(0.375)	(0.278)
	[0.750]	[0.211]	[0.211]	[0.211]	[0.365]	[0.211]	[0.730]	[0.730]
Observations	1,302	468	1,302	468	1,302	468	1,302	468

Panel C: Health knowledge	Knows HIV can be infected through unprotected sex		Knows HIV can be contracted by sharing an injection needle		Aware of STDs	
	Full	Age<=15	Full	Age<=15	Full	Age<=15
	(19)	(20)	(21)	(22)	(23)	(24)
Trafficking victim	0.571*	0.457**	-0.220	-0.380	-0.287	-0.223
	(0.332)	(0.209)	(0.536)	(0.401)	(0.181)	(0.212)
	[0.230]	[0.211]	[0.518]	[0.289]	[0.230]	[0.289]
Observations	1,302	468	1,302	468	1,302	468

The trafficking victim variable is instrumented. The estimation result is adjusted by the sample weight. Standard errors clustered at the working district level are in parentheses. Anderson's (2008) q-values, which adjust the p-values of the coefficients in each panel are in brackets. * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level. All the columns control for home district characteristics, worker characteristics, and working-age fixed effects.

Online Appendix
(NOT FOR PUBLICATION)

A1. Sampling Methodology

The sampling methodology of the CSEC survey is as follows. Considering the geographical variation in the concentration of sex workers, the sampling was implemented separately in six strata: (1) brothels, (2) divisional cities, (3) cities with a population of over 100,000, (4) district headquarters, (5) subdistrict headquarters, and (6) remaining towns. The survey respondents were selected based on stratified random sampling. In the first stage, a total of 143 primary sampling units (PSUs) were randomly selected, including 12 brothels, 19 divisional cities, 22 cities with a population of over 100,000, 40 district headquarters, 10 subdistrict headquarters, and 40 remaining towns. Then, a list of all child sex workers in each PSU was created with the help of local sex workers and NGOs. The survey team obtained a list of a total of 5239 child workers through this process. This implies that the number of child sex workers across the country is estimated to be 18,902.

In the second stage of the sampling procedure, 12 girls were randomly selected in the PSU of the brothel stratum, while in the remaining strata, 12 girls, 4 boys, and 4 eunuchs were selected. In selecting the girls from the PSU of the brothel stratum, if the number of girls on the list was fewer than 12, all the girls in the list were sampled. Girls in the other strata were sampled from three categories: street-based, hotel-based, and residence-based workers. If the number of girls in a category exceeded 4, the survey team randomly selected 4 girls in that category. If the total number of girls in a PSU exceeded 12 but the number in a category was fewer than 4, the survey team selected all workers from the category with a shortage and more than 4 from the others so that a total of 12 girls from each PSU were interviewed. Thus, the number of sampled girls was fewer than 12 only if there were fewer than 12 girls in the PSU. Regarding the sampling of boys and eunuchs, the survey team randomly selected at most 4 workers regardless of category.

Consequently, 1435 workers were sampled, and the survey team obtained 1418 responses, including those of 133 brothel-based girls, 198 hotel-based girls, 264 residence-based girls, 499 street-based girls, 141 boys, and 183 eunuchs. To adjust the difference in sampling probability across regions and types of sex workers, the survey team computed the sampling weight based on the obtained sample and the estimated number of total sex workers by region and type. For example, the sampling probability of brothel-based workers is higher than that of the other types of workers. For more details on the computation of the sampling weight, see the Bangladesh Bureau of Statistics (2009).

A2. Robustness Tests

A2.1. Alternative Definition of Trafficking Victims

This section uses two alternative definitions of victims. First, those who reported the reason as either being "deceived" or enticed "through a broker" in Table 4 may include some trafficking victims. Therefore, this section defines the respondent as a victim if either he/she self-reports that he/she is a victim or he/she states that his/her reason for starting sex work was being "deceived" or enticed "through a broker". As a result, we consider 231 of the 1418 respondents to be trafficking victims. The proportion of victims was 23.3 percent after adjusting the sample weight.

Second, we use the indicator of whether the worker can quit the job voluntarily as an alternative measure of trafficked workers. As argued in Sections 1 and 2, few outside option (impossibility of escaping) is a major cause of the poor working conditions among trafficked workers. Therefore, this could be a more objective proxy for trafficked workers.

The estimation results are reported in Panels A and B of Table A6 and are qualitatively the same as the benchmark results. It should be noted that the point estimates in Panel A are larger than the benchmark result. This is consistent with our expectations; in the benchmark definition, some victims are included in the control group, causing the estimated gap in the working conditions to be smaller.

A2.2. Reduced Form

In Panel C of Table A6, we report the result from reduced-form estimation that regresses the working conditions on the frequency of natural disasters. We find the result consistent with the benchmark result.

A2.3. Sensitivity to the Violation of the Exclusion Restriction

2SLS assumes zero correlation between the instrument and the error term in the second-stage equation. In other words, $\gamma=0$ is required in the following equation:

$$Y_{hdi} = \beta_0 + \beta_1 Traf_{hdi} + \beta_2 X_{hdi} + \beta_3 H_h + \mu_d + \gamma IV_h + \varepsilon_{hdi} \qquad (A1)$$

However, this may not hold strictly if the disaster frequency is correlated with the workers' unobserved characteristics, such as attractiveness, health condition, and outside options. Therefore, we employ two methods to provide bounds on an endogenous variable of interest with one instrument that does not necessarily have zero correlation with the unobserved error term.

The first method proposed by Conley et al. (2012) allows γ to be nonzero, but it requires information on the support of γ, $[\gamma_{\min}, \gamma_{\max}]$. If the support is known, regressing $Y_{hdi} - \gamma_0 IV_h$ using the 2SLS for all $\gamma_0 \in [\gamma_{\min}, \gamma_{\max}]$ provides the bounds of β_1. Existing studies have employed various

criteria to determine support (Coşar and Demir 2016; Fatas and Mihov 2013; Nunn and Wantchekon 2011). In this study, we assume that the effect of disaster frequency on the working conditions through trafficking victimization is comparable to or larger than the effect through the other channels. More specifically, we allow γ to take 25 to 50 percent of the total effect of disaster frequency on the working conditions. We therefore employ three potential supports for γ: between zero and 0.25 multiplied by the coefficient in the reduced form results (Panel B of the table); between zero and 0.33 multiplied by the coefficient; and between zero and 0.5 multiplied by the coefficient. We conduct these tests only for the specifications with a significant coefficient of trafficking victimization in Tables 7 to 9.

The results are reported in Panels D, E, and F of Table A6. They show that in the full sample models, the bounds do not include zero, as long as the effects of disaster frequency through the other channels account for less than 33 percent of the total effects. Further, the results for freedom to leave the job and wage per client are robust even when 50 percent of the disaster frequency effect is attributed to the other channels.

Although the method of Conley et al. (2012) is insightful, it is challenging to determine the support for γ. Therefore, we also followed a second method as proposed by Nevo and Rosen (2012). This method does not require information on the support for γ, but it does require the following two assumptions to hold. First, the indicators of trafficking victims and disaster frequency have the same direction of correlation as the error term. Second, the absolute value correlation between disaster frequency and the error term is not greater than the absolute value correlation between the indicator of trafficking victimization and the error term. The latter assumption is intuitive, as claimed by Nevo and Rosen (2012). Regarding the former assumption, we exploit the result of the falsification test in Table A4. The coefficient of disaster in 2007 in the specification should capture the correlation between the error term and the instrument. Thus, the endogenous regressor must be negatively correlated with the error term in the equation of wage per client and positively correlated with that of freedom to quit and the number of clients. However, trafficked workers, who are expected to be more attractive and educated, should demonstrate the opposite patterns; they have higher outside options and earn higher wages, and therefore do not have to trade sex with as many clients. Thus, to satisfy the first assumption, we estimate the bounds for the effect of nontrafficked workers, i.e., $1 - Traf_{hdi}$.[29] Regarding drug use, violence by owners, STDs, and fevers/headaches, it is difficult to predict the signs of correlation with trafficking victimization. Thus, we do not estimate the bounds of these variables. The results reported in Panel G of Table A6 show that the bounds do not include zero for the three dependent

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[29] Fitzsimons and Malde (2014) also transform the endogenous variable to estimate the bounds.

variables.

A2.4. Selective Exit from the Industry

Some sex workers may leave the job after working for a few years because they escape, are freed, or perish; Kara (2010, 265) estimates that the average duration of enslavement of a sex trafficking victim in South Asia is approximately 3.3 years. Therefore, our sample includes only those who cannot leave the job, causing a sample selection problem. This problem is particularly critical for those who have been working as sex workers for a long time. Therefore, we use the subsample of workers who entered the sex industry in 2004 or later. Panel H of Table A6 demonstrates that the results do not change qualitatively.

A2.5. Brothel-Based Workers

Brothel-based workers may face different working conditions since adult prostitution in brothels is legal.[30] Hence, we drop the samples of these workers in Panel I of Table A6. Again, we find qualitatively equivalent results.

A2.6. Reporting Errors

Since our respondents are young and uneducated, the data might be subject to reporting errors. Thus, we drop the respondents aged 10 or under. Panel J of Table A6 shows that our findings are robust to the change in the sample.

A2.7. Nonlinear Effects of Age

Finally, we also report the results when controlling for age dummies to reveal the nonlinear effects of age on the outcomes in Panel K of Table A6.

A3. Alternative Interpretations
A3.1. Alternative Interpretations for More Clients and Lower Wages

This section tests the following four alternative interpretations of the greater number of clients and lower wages among trafficked workers: (1) poor quality of service, (2) secret use of condoms, (3) receipt of in-kind support, and (4) coercion by clients. First, the literature shows that workers trading

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[30] Bangladesh has 14 registered brothels, where only adult prostitution is legalized. Thus, child workers in the brothels take steroids to make them look more mature (ECPAT International 2011).

in protected sex earn lower wages (Arunachalam and Shah 2012). This suggests that trafficked workers may earn lower wages because they use condoms more frequently than nontrafficked workers. Then, they have to voluntarily take on more clients to earn a subsistence level of income. Similarly, trafficked workers may be so unmotivated to work that clients' willingness to pay for their service decreases. However, these hypotheses do not fit the data; as shown in Table 10, we find insignificant differences in condom use. Furthermore, if poor motivation drives lower wages, we should find even larger negative effects on the wages of young victims. This is counter to our finding in Table 8.

Second, trafficked workers may use condoms in secret as frequently as nontrafficked workers, even though their owners may order them not to use them. Therefore, they may receive payment from clients that is equal to that of nontrafficked workers but less than the amount the owner anticipates. This decreases the wage for trafficked workers since the owner still takes away the amount corresponding to condom-free sex. This potentially causes lower wages and the comparable frequency of condom use. However, it is not realistic to assume that trafficked workers can purchase and use condoms in secret, given that they are always watched by their owners.

Third, trafficked workers may alternatively receive in-kind support, such as food, clothing, and accommodations, from their owner. Owners might also protect their workers from violence and abuse by clients, local gangs, and the police. In line with this hypothesis, we find that trafficked workers are more likely to receive accommodation support and have better access to medical facilities, as shown in Table 10. However, we should be careful in interpreting these results because the provision of accommodation may be a form of confinement rather than support, and young victims are *less* likely to receive food support. In addition, we provide suggestive evidence that young victims are more likely to experience police detection and violence. Given these arguments, this hypothesis does not explain the large differences in the number of clients and wages per client.

Finally, for sex workers in Bangladesh, the most unwelcome clients are police and pimps. They threaten sex workers, commit violence, and pay less or even nothing. Trafficked workers may encounter these clients more frequently than nontrafficked workers do and may therefore have to take on more clients to earn sufficient income. However, we demonstrate in Table 10 that trafficking victimization is uncorrelated with the occupation of clients, in contrast to our hypothesis.

A3.2. Alternative Interpretations for Health Conditions

If the victims do not have knowledge about STDs or access to medical services, they are unlikely to notice an infection. This could be the main cause of the comparable health conditions between trafficked and nontrafficked workers. It should, however, be emphasized that this is unlikely to explain

the benchmark result for two reasons. First, we do not find a systematic difference even in experiencing injuries or accidents, which does not require specific knowledge or a medical test for symptoms to be assessed. Second, as shown in Table 10, trafficked workers have better access to medical facilities and are more aware of the risk of HIV through unprotected sex than other sex workers are.
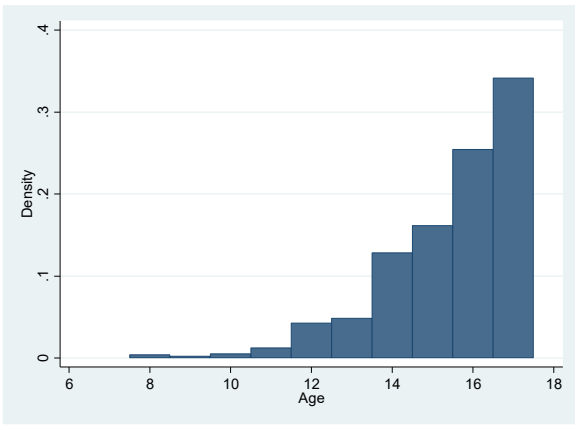
(a) Age
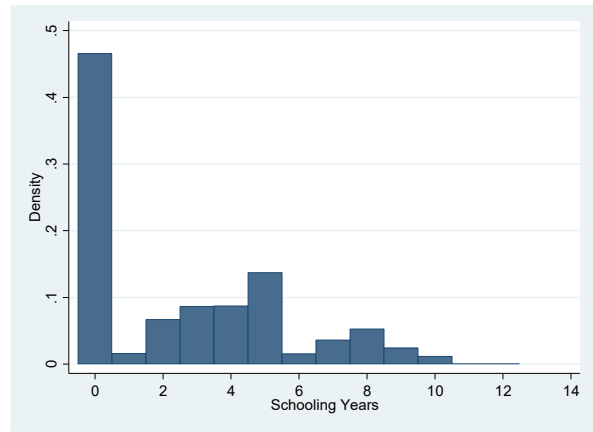
(b) Years of Schooling

The statistics are adjusted by the sample weight.

Figure A1: Distribution of Age and Years of Schooling
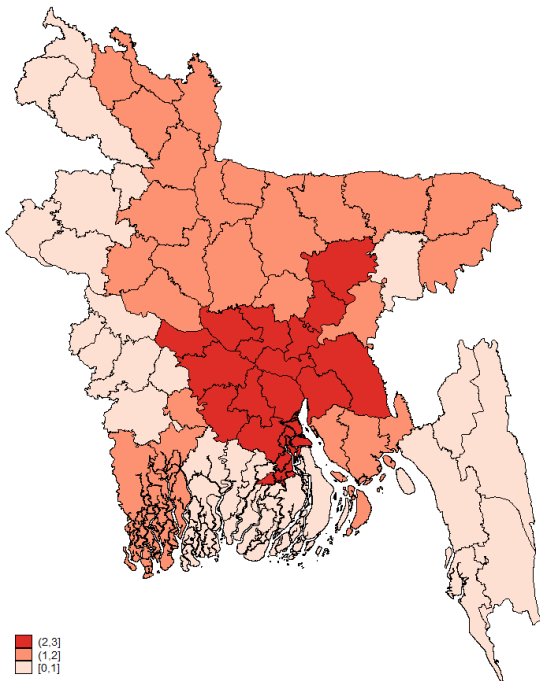
(a) Disasters between 2004 and 2007
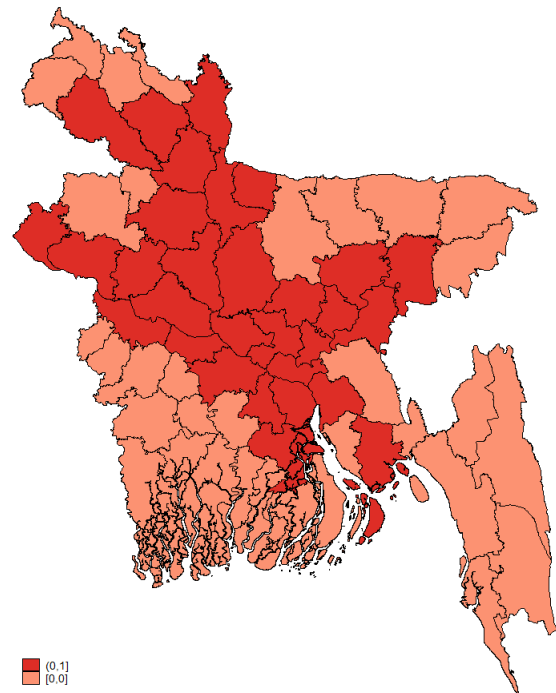
(b) The 1998 Flood

Figure A2: Geographical Distribution of Disaster Frequency

Table A1: Comparison of Daily Wage (Taka)

	Mean	S.D.
Commercial sex work	359.7	259.8
Average wage level in the home district of sex workers		
Agricultural wage for men	253.1	58.9
Agricultural wage for women	181.0	37.0
Agricultural wage for children	139.0	63.9
Nonagricultural wage for children	130.4	34.2

The statistics are adjusted by the sample weight.

Table A2: Severity of Major Floods

Year	1987	1988	1998	2004
(1) Deaths	1800	2379	918	747
(2) Percent of inundated land	40	61	67	38
(3) Days inundated	n.a.	34	59	55
(4) Peak water level above danger level	n.a.	11.46	11.45	n.a.
(1)/(2)	45.0	39.0	13.7	19.7

Sources: del Ninno et al. (2001), Asian Development Bank and World Development (2005)

Table A3: Disaster Frequency and Socioeconomic District Characteristics

	Number of trafficked workers (1)	Number of nontrafficked workers (2)	Proportion of trafficked workers (3)	Female literacy rate in 2001 (4)	Unemployment rate in 2001 (5)	Proportion of educated workers (6)	Proportion of workers starting sex work before age 15 (7)	Unemployment rate in 2011 (8)	Proportion of individuals with disabilities in 2011 (9)
Frequency of disasters from 2004-2007	20.824**	37.008	5.787**	-0.197	0.063	-5.430	1.780	-0.572	-0.295
	(8.200)	(37.300)	(2.340)	(0.996)	(0.060)	(4.621)	(3.108)	(1.603)	(1.694)
1 if severely affected by the 1998 flood	-18.199	-98.903	-3.321	-4.503**	-0.153	5.114	1.137	1.628	2.266
	(15.655)	(68.687)	(4.328)	(1.948)	(0.129)	(5.919)	(4.171)	(1.574)	(4.208)
Log (Population)	10.138	148.711*	-5.007	2.674	0.188	10.085	-0.193	-1.063	-19.663
	(20.482)	(76.383)	(4.796)	(2.602)	(0.122)	(10.720)	(5.238)	(1.647)	(14.538)
Number of train stations	-1.084	-0.375	-0.003	-0.453***	-0.019**	-1.198*	-0.424	-0.267*	0.348
	(1.639)	(5.859)	(0.337)	(0.167)	(0.009)	(0.616)	(0.412)	(0.152)	(0.339)
Log (Number of migrants)	-3.176	1.638	-0.689	2.996***	0.137	1.457	6.788	3.198	0.149
	(12.926)	(43.809)	(4.403)	(1.112)	(0.084)	(5.329)	(4.350)	(2.857)	(2.444)
Daily wage for children in agricultural sector	0.183	0.521	0.039	0.063**	0.004***	0.146*	0.019	0.035	-0.003
	(0.197)	(0.699)	(0.049)	(0.024)	(0.001)	(0.076)	(0.053)	(0.022)	(0.033)
Proportion of residences made with poor-quality material	3.087	-1.416	0.321	-0.668***	0.010	-0.029	-0.514	-0.100	0.934
	(2.536)	(5.698)	(0.599)	(0.195)	(0.011)	(0.794)	(0.564)	(0.157)	(0.846)
Proportion of households with access to tap water	0.221	-1.406	0.172	0.107	0.008	-0.075	-0.508	-0.274	0.546
	(1.050)	(4.325)	(0.342)	(0.114)	(0.007)	(0.471)	(0.489)	(0.212)	(0.439)
Constant	-138.172	-1,957.742	75.284	-28.845	-2.912	-110.103	12.566	-19.011	284.276
	(290.988)	(1,182.875)	(71.359)	(35.033)	(1.793)	(146.470)	(108.381)	(27.364)	(186.148)
Observations	57	57	57	57	56	57	57	56	56
R-squared	0.205	0.211	0.126	0.389	0.402	0.099	0.133	0.105	0.343

The number of sex workers is computed by the summation of sample weights for each home district. * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level. OLS coefficients are reported. Robust standard errors are in parentheses.

Table A4: Falsification Test

| | | Frequency of disasters in 2007 |
		Coef.	S.E.	N
(1)	1 if trafficking victim	0.087	(0.145)	645
(2)	1 if unable to quit voluntarily	0.023	(0.034)	645
(3)	1 if uses drugs	-0.032	(0.052)	645
(4)	1 if has experience violence from senior sex workers or pimps within the last year	0.014	(0.032)	645
(5)	Log clients per week	0.030	(0.099)	645
(6)	Log wage per client	-0.150	(0.106)	642
(7)	Log wage per day	-0.095	(0.061)	642
(8)	1 if has experienced STDs within the last 6 months	-0.099	(0.108)	645
(9)	1 if has experience injury/accident within the last 6 months	-0.029	(0.082)	645
(10)	1 if has experience fever/headache within the last 6 months	0.012	(0.098)	645
(11)	1 if receives food support	-0.129	(0.098)	645
(12)	1 if receives clothing support	0.030	(0.058)	645
(13)	1 if receives accommodation support	0.042	(0.081)	645
(14)	1 if always uses condoms	-0.041	(0.053)	645
(15)	1 if has access to hospital/clinic/pharmacy	0.033	(0.092)	645
(16)	1 if arrested within the last year	0.038	(0.079)	645
(17)	1 if has experienced violence from gangs within the last year	0.084	(0.059)	645
(18)	1 if has experienced violence from clients within the last year	-0.001	(0.097)	645
(19)	1 if clients include police or pimps	0.074	(0.049)	645
(20)	1 if knows HIV can be contracted through unprotected sex	-0.030	(0.121)	645
(21)	1 if knows HIV can be contracted through shared injection needles	-0.001	(0.058)	645
(22)	1 if aware of STDs	0.059	(0.090)	645
(23)	1 if sends remittances to family	-0.028	(0.022)	645
(24)	1 if had previously heard about human trafficking	0.087	(0.145)	645

The sample includes respondents who started sex work between 2004 and 2006. The other independent variables and working district fixed effects are included. The estimation result is adjusted by the sample weight. OLS coefficients are reported. Standard errors clustered at the working district level are in parentheses. * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level.

Table A5: Tests for Threats to Identification

	Sends remittances to family	Always uses condoms	Had heard about human trafficking
	(1)	(2)	(3)
Frequency of disasters from 2004-2007	-0.023	0.038	0.004
	(0.051)	(0.047)	(0.026)
Age	0.019**	(0.009)	0.018
	(0.009)	0.011**	(0.011)
Years of schooling	0.012	(0.005)	0.010**
	(0.009)	-0.115*	(0.004)
Boy	0.039	(0.058)	-0.047
	(0.080)	-0.228**	(0.061)
Eunuch	-0.052	(0.102)	0.045
	(0.055)	-0.013	(0.038)
Previous occupation was as a student	0.008	(0.052)	0.034
	(0.057)	-0.048	(0.028)
Previous occupation was wage work	0.051	(0.045)	0.033
	(0.034)	0.101	(0.041)
Previous occupation was sex work	-0.008	(0.108)	-0.019
	(0.075)	0.153*	(0.043)
Previous occupation was in another category	-0.021	(0.087)	-0.054
	(0.070)	0.006	(0.040)
Muslim	0.016	(0.119)	0.027
	(0.071)	0.016	(0.096)
Original residence was made of better-quality material	0.047	(0.059)	0.010
	(0.056)	-0.062*	(0.040)
Hometown is urban	0.046	(0.032)	0.023
	(0.046)	0.038	(0.027)
Observations	1,302	1,302	1,302
Working district fixed effects	Yes	Yes	Yes
Home district characteristics	Yes	Yes	Yes

The estimation result is adjusted by the sample weight. Standard errors clustered at the working district level are in parentheses. * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level.

Table A6: Summary of Robustness Checks

	1 if unable to quit		1 if uses drugs		Violence from senior sex workers or pimps		Log clients per week		Log wage per client		Log wage per day	
	Full	Age<=15	Full	Age<=15	Full	Age<=15	Full	Age<=15	Full	Age<=15	Full	Age<=15
Panel A: Definition of Victim (1)												
Trafficking victim	1.675**	1.004***	0.950	0.545***	0.687*	0.560***	2.160**	0.615	-2.308**	-0.793***	-0.820	-0.620**
	(0.729)	(0.358)	(0.636)	(0.168)	(0.351)	(0.175)	(0.921)	(0.466)	(0.908)	(0.297)	(0.813)	(0.261)
Observations	1,302	468	1,302	468	1,302	468	1,302	468	1,297	466	1,297	466
Panel B: Definition of Victim (2)												
1 if unable to quit			0.567	0.543**	0.410	0.558***	1.290**	0.612*	-1.376***	-0.791***	-0.489	-0.619*
			(0.520)	(0.217)	(0.288)	(0.148)	(0.575)	(0.338)	(0.533)	(0.213)	(0.401)	(0.321)
Observations			1,302	468	1,302	468	1,302	468	1,297	466	1,297	466
Panel C: Reduced Form												
Frequency of disasters from 2004-2007	0.084**	0.183***	0.047	0.099***	0.034	0.102***	0.108**	0.112	-0.115***	-0.144***	-0.041	-0.113**
	(0.034)	(0.035)	(0.032)	(0.037)	(0.021)	(0.031)	(0.046)	(0.079)	(0.030)	(0.038)	(0.036)	(0.051)
Observations	1,302	468	1,302	468	1,302	468	1,302	468	1,297	466	1,297	466
Panel D: Conley et al. (2012) 25%												
Trafficking victim: upper bound	1.253	1.303		0.804		0.758	1.701	1.063	-0.275	-0.031		0.073
: lower bound	0.217	0.288		0.051		0.119	0.192	-0.101	-1.749	-1.220		-1.051
Observations	1,302	468		468		468	1,302	468	1,297	466		466
Panel E: Conley et al. (2012) 33%												
Trafficking victim: upper bound	1.253	1.303		0.804		0.758	1.701	1.063	-0.197	0.023		0.118
: lower bound	0.155	0.223		0.014		0.081	0.112	-0.143	-1.749	-1.220		-1.051
Observations	1,302	468		468		468	1,302	468	1,297	466		466
Panel F: Conley et al. (2012) 50%												
Trafficking victim: upper bound	1.253	1.303		0.804		0.758	1.701	1.063	-0.020	0.133		0.205
: lower bound	0.027	0.084		-0.068		-0.001	-0.053	-0.235	-1.749	-1.220		-1.051
Observations	1,302	468		468		468	1,302	468	1,297	466		466

Panel G: Nevo and Rosen (2012)												
Nontrafficked worker: upper bound	-0.825	-0.894					-1.064	-0.547				
: lower bound									1.134	0.706		0.552
Observations	1302	468					1302	468	1297	466		466
Panel H: Selective Exit												
Trafficking victim	0.806*	0.992***	0.584*	0.536***	0.407*	0.547***	1.083***	0.488	-1.253***	-0.936***	-0.520	-0.787**
	(0.457)	(0.258)	(0.306)	(0.179)	(0.224)	(0.087)	(0.367)	(0.351)	(0.408)	(0.297)	(0.487)	(0.372)
Observations	1,127	438	1,127	438	1,127	438	1,127	438	1,122	436	1,122	436
Panel I: Exclusion of Brothel Workers												
Trafficking victim	0.738*	0.831***	0.559*	0.534***	0.303	0.491***	1.341***	0.656**	-1.138***	-0.705***	-0.211	-0.448*
	(0.428)	(0.202)	(0.319)	(0.134)	(0.197)	(0.049)	(0.336)	(0.314)	(0.292)	(0.202)	(0.323)	(0.252)
Observations	1,179	428	1,179	428	1,179	428	1,179	428	1,178	427	1,178	427
Panel J: Age Restriction												
Trafficking victim	0.825*	0.891***	0.471	0.494***	0.339	0.505***	1.063***	0.550*	-1.132***	-0.693***	-0.399	-0.542*
	(0.436)	(0.221)	(0.320)	(0.146)	(0.218)	(0.057)	(0.388)	(0.328)	(0.292)	(0.214)	(0.361)	(0.287)
Observations	1,293	459	1,293	459	1,293	459	1,293	459	1,288	457	1,288	457
Panel K: Nonlinear Effects of Age												
Trafficking victim	0.801*	0.878***	0.503	0.523***	0.318	0.475***	1.136***	0.658**	-1.173***	-0.702***	-0.393	-0.478
	(0.453)	(0.234)	(0.314)	(0.144)	(0.206)	(0.074)	(0.362)	(0.258)	(0.299)	(0.236)	(0.412)	(0.293)
Observations	1,302	468	1,302	468	1,302	468	1,302	468	1,297	466	1,297	466

The other independent variables and working-district fixed effects are included. The estimation results are adjusted by the sample weight. Standard errors clustered at the working district level are in parentheses. * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level

	STDs		Injury/Accident		Fever/Headache	
	Full	Age<=15				
Panel A: Definition of Victim (1)						
Trafficking victim	-0.118	0.656	-0.727	-0.385	1.844***	0.843***
	(0.994)	(0.512)	(0.691)	(0.397)	(0.635)	(0.205)
Observations	1,302	468	1,302	468	1,302	468
Panel B: Definition of Victim (2)						
1 if unable to quit	-0.071	0.653*	-0.434	-0.383	1.101***	0.840**
	(0.612)	(0.365)	(0.384)	(0.406)	(0.390)	(0.345)
Observations	1,302	468	1,302	468	1,302	468
Panel C: Reduced Form						
Frequency of disasters from 2004-2007	-0.006	0.119	-0.036	-0.070	0.092***	0.154***
	(0.051)	(0.080)	(0.036)	(0.081)	(0.030)	(0.056)
Observations	1,302	468	1,302	468	1,302	468
Panel D: Conley et al. (2012) 25%						
Trafficking victim: upper bound		0.975			1.443	1.156
: lower bound		0.059			0.180	0.169
Observations		468			1,302	468
Panel E: Conley et al. (2012) 33%						
Trafficking victim: upper bound		0.975			1.443	1.156
: lower bound		0.013			0.118	0.113
Observations		468			1,302	468
Panel F: Conley et al. (2012) 50%						
Trafficking victim: upper bound		0.975			1.443	1.156
: lower bound		-0.079			-0.024	-0.010
Observations		468			1,302	468

Panel H: Selective Exit						
Trafficking victim	-0.029	0.569	-0.461*	-0.430	0.845***	0.608***
	(0.411)	(0.347)	(0.266)	(0.388)	(0.273)	(0.235)
Observations	1,127	438	1,127	438	1,127	438
Panel I: Exclusion of Brothel Workers						
Trafficking victim	0.099	0.618*	-0.394	-0.350	0.842***	0.708***
	(0.452)	(0.336)	(0.285)	(0.345)	(0.285)	(0.189)
Observations	1,179	428	1,179	428	1,179	428
Panel J: Age Restriction						
Trafficking victim	-0.057	0.587*	-0.357	-0.334	0.910***	0.739***
	(0.479)	(0.340)	(0.302)	(0.359)	(0.290)	(0.193)
Observations	1,293	459	1,293	459	1,293	459
Panel K: Nonlinear Effects of Age						
Trafficking victim	-0.055	0.655*	-0.358	-0.294	0.903**	0.738***
	(0.530)	(0.381)	(0.352)	(0.310)	(0.362)	(0.178)
Observations	1,302	468	1,302	468	1,302	468

The other independent variables and working-district fixed effects are included. The estimation result is adjusted by the sample weight. Coefficients are reported. Standard errors clustered at the working district level are in parentheses. * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level