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ABSTRACT

Stigma of Sexual Violence and Women's Decision to Work*

Our study is motivated by two disturbing evidences concerning women in India. On one hand, crime against women is on the rise while on the other, women's labor force participation rate (WLFPR) has been declining over the last three decades. We estimate the extent to which the decline in WLFPR can be assigned to increasing instances of crime against women. We argue that an increase in crime against women, increases the non-pecuniary costs of traveling to work, particularly in a traditional society marked by stigma against victims of sexual crimes. Our findings suggest that women are less likely to work away from home in regions where the perceived threat of sexual harassment against girls is higher. The estimate is robust to various sensitivity checks. Moreover, the deterrence effect of crime responds to the opportunity cost of work on one hand and the stigma cost of sexual crimes on the other.

JEL Classification: E24, J16, J18

Keywords: crime against women, labor force participation, stigma cost

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1 Introduction

Women empowerment in India in recent times is confronted with two serious predicaments – a rising trend of sexual crimes against women and a steady decline in the work force participation of women. While there is some interest to study these two issues separately, not much has been done to link these two disturbing pieces of evidence. In this paper we aim to bridge this gap in the literature by empirically examining whether violence against women is preventing them from joining the labor market.

The issue of rape and crimes against women in India has attracted much public as well as media attention in recent times both in domestic as well as the international press. The infamous *Nirbhaya* gang rape case that happened in Delhi in 2012 was one such shocking case that shook the collective conscience of the civil society in India and led to mass protests across India (Biswas, 2012). A careful study of the data, however, reveals that this was not an one off case – this is part of an alarming trend of reported rapes in India which has been rising for quite some time (Iyer et al., 2012). Many of these cases do not get reported in the media; although at a policy level they are, perhaps, equally important. In fact, such a trend is not limited to India either. Among international agencies and policy makers, there is a growing recognition of widespread prevalence of violence against women globally. In its first systematic review on violence against women, the World Health Organization reports that globally, 35% of women have experienced some violence either by an intimate-partner or by a non-partner (WHO, 2013).

Feminist discourse sees rape as an instrument of controlling women and therefore, is instrumental in supporting patriarchy. Brownmiller (1976) in her classic book *Against our will: men, women and rape* describes rape as "a conscious process of intimidation by which all men keep all women in a state of fear" (p. 15). Since then, this view was iterated by many other scholars. Griffin (2015) for example argues that "the threat of rape is used to deny women employment. In California, the Berkeley Public Library, until pushed by the Federal Employment Practices Commission, refused to hire female shelvers because of perverted men in the stacks. The fear of rape keeps women off the streets at night. Keeps women at home. Keeps women passive and modest for the fear that they be thought provocative (p 21)".

In the decade following the publication of Brownmiller's book, a number of survey based studies provided empirical support to her qualitative assertions. In one of such study Riger and Gordon (1981) used telephone interview of 1620 people living within the city limits of Philadelphia, San Fransisco and Chicago. They classified women's strategy against possible attacks in two groups – isolation and street savvy. In the first strategy, women choose not to expose themselves to situations which they thought could be dangerous such as going out to streets at night. Street savvy strategies on the other hand involves tactics that would reduce risk when exposed to danger such as wearing running shoe, keeping pepper spray in bags. In their data, very few men used isolation tactics while 41% of women took recourse to isolation tactics.

In another study Warr (1985) analyzed responses of a mail survey of Seattle residents done in 1981. Compared to other forms of crime, fear of rape is most significant for women. For age less than 35 rape is the most feared crime more feared than murder, assault and robbery. It ranks second for women in the age

group 36-50 and declines to 9th for women above age 66. Among women in each age group, the perceived seriousness of rape is very high virtually similar to that of murder. In response to the questions regarding the coping strategy, the two most prominent strategies are home security precautions and social and lifestyle precautions. However in the data, there is little correlation between fear of rape and home security precautions while there is a strong correlation between fear of rape and social and lifestyle precautions.

The studies cited above reveal that in response to the pervasive fear of rape, women often adopt the strategy of avoidance by modifying their lifestyle. We extend their position by arguing that in India quitting workforce can be one possible avoidance strategy taken by women. More importantly, we argue that the fear of rape is often conditioned by family culture – a woman hailing from a traditional family values will fear rape more than her liberal counterpart. Such fear may induce women quitting labor force which in turn leads to low overall rate of women's work force participation rate.

We must emphasize at this point that our study along with the body of scholarly work cited above, which are based on the U.S., shows that the fear of rape among women and their response to such fear cut across societies. Therefore, the conventional way of viewing societies in a traditional/modern binary and assigning patriarchy as a characteristic of traditional societies does not hold. This makes our work robust to churning of cultural values in India that emanates from the socioeconomic transformation that India experienced after economic liberalization started in 1991 (Nielsen and Waldrop, 2014).

The contribution of our work mainly rests on two focal points. First, we view women's low participation rate in the work force in India as a response to pervasive fear of sexual crime against women. Second, we probe an area that was not taken into consideration in the studies cited above. While it is found that rape is the most feared crime against women, the cultural values underlying such fear is not well analyzed in the literature. We argue that fact that women fear the rape most, stems from a patriarchal mindset that sees body as pure and as a property of some male member – her prospective husband. Such values will be stronger for families which have more conservative values and therefore the deterrent effect of crime against women on their workforce participation will be stronger for such families. We argue that India's declining workforce participation of women can partially be accounted for by rising crime against women.

The trend in women's labor force participation rate (WLFPR) reflects a stagnancy for an extended period of time between 1983-84 and 2004 before it started to decline between 2005 and 2010 (Lahoti and Swaminathan, 2013).[1] Lahoti and Swaminathan (2013) further mention that WLFPR declined in rural as well as urban India during this period of 2005-2010. In rural areas it declined from 33.3% to 26.5% while in the urban areas it declined from 17.8% to 14.6%. Besides the declining trend over time, the level of WLFPR in India has been much lower than in other Asian economies(Verick, 2014). The low level of WLFPR has serious implications for India's GDP. The United Nations Economic and Social Commission for Asia and Pacific finds that had Indian women's work force participation rate been the same as that of their male counterpart, India's GDP would increase by 60% between 2016 and 2025(Mathew, 2016).

[1]We use the phrase 'women's work force participation' and 'women's labor force participation' interchangeably in this paper to mean the proportion of women working in, or looking for, gainful employment.

In this paper, we investigate whether crime against women has played a role in keeping WLFPR low in India. Anecdotal evidence suggests that incidence of assault on women discourages them to go for work(Gupta, 2013). This finding is also observed in a survey based study by Sudarshan and Bhattacharya (2009). In a survey of non-working women in Delhi, they find that safety concern is an important factor that stop women from working outside home, second only to their engagement in domestic work. Our own calculation based on state level cross section data shows that there is a negative relation between specific crime rates such as rape, abduction and kidnapping and WLFPR (see Figure 2). Despite these general trends, we have not come across any study which has established (theoretically or empirically) that greater incidence of crime would *cause* lower work force participation of women. On the contrary, some studies have found positive correlation between these two (Mukherjee et al., 2001). It could be the case that working women are more active in reporting crime and this leads to the observed correlation, as the authors themselves point out. Similar suggestion is also made by Iyer et al. (2012) where they find that the incidence of crime against women is higher for *panchayat*s which are reserved for women. Such pattern, they argued, can be explained by rise in the reporting of crime (rather than actual incidence of crime) that is associated with greater empowerment of women.

Our work also adds to the body of research that has been devoted to studying women's labor force participation (WLFPR). It has been found that patterns of social organizations, the organization of the family and the kinship system play a major role in women's decision to participate in the labour force(Chamlou et al., 2011; Fernández, 2007). WLFPR varies considerably between developed and developing countries as well as across developing countries with the lowest female

participation rate being recorded in the Middle East, North Africa and South Asia (Verick, 2014). However, while in recent times WLFPR has increased in the first two regions, it has fallen in South Asia (Gaddis and Klasen, 2014). There is a substantial variation within South Asia as well. Bangladesh witnessed a rapid increase in WLFPR while the situation is particularly grim in India (Rahman et al., 2013).

There are a handful of papers that try to explain the puzzling phenomenon of stagnancy/decline of WLFPR in India. Klasen and Pieters (2015) did a comprehensive study by analysing the WLFPR in urban India between 1987 and 2001. They attributed the stagnancy of WLFPR in India to a combination of supply and demand side factors. On the supply side, rising family income and education of husbands are found to reduce WLFPR by a significant extent. The authors also found a standard U-shaped relation between WLFPR and education. Furthermore they find that the positive effect of education on WLFPR has declined as more women are choosing to pursue higher education. On the demand side, their paper showed that sectors that require more female workers have expanded at a very slow rate thereby explaining part of the stagnancy of WLFPR. Chatterjee et al. (2015) also find that a fall in the number of farming jobs without any commensurate increase of alternate employment opportunities found suitable for women is responsible to some extent in explaining the stagnancy and fall in WLFPR.

There exists an extensive literature on economics of crime as well. Following the seminal paper by Becker (1968) many models of criminal behaviour have been developed which try to analyse various determinants of crime. Most common among them include levels of education, unemployment levels, wage rates, labor stratification and local labor market opportunities. A few studies have looked at the effects of exogenous variation in institutional arrangements and weather shocks on crime

against women. Iyer et al. (2012) for instance, have analyzed the effect of women's political empowerment on the incidence of crimes against women. More specifically the authors look at the 1993 constitutional amendment that mandated a one third reservation for women at the level of village government, *Panchayats*. They examine whether increase in women's representation in *Panchayats* had any impact on crimes against women. Exploiting a state-level variation in the timing of these political reforms they find that mandated political representation for women led to a significant increase in the number of reported crimes against women. On the face of it, this seems to be bad news. A closer look at the evidence suggests that the effect might be driven by an increase in the reporting of crimes against women, suggesting that women feel more encouraged to report crimes against them when there are women in the local government. In another paper that relates incidence of crime against women with economic outcomes, Sekhri and Storeygard (2014) examine the effect of local precipitation shocks on crime faced by women.

Only a few papers have looked into the impact of crime on economic outcomes. Tita et al. (2006); Lynch and Rasmussen (2001); Linden and Rockoff (2008) find a negative effect of crime and violence on real estate prices. Bowen and Bowen (1999); Schwartz and Gorman (2003); Ceballo et al. (2004) find that exposure to violence in the neighborhood or in-school bullying has detrimental effects on children's perception of security, school attendance and grades.

Existing studies which look specifically at the effect of crime against women mostly focus on the health consequences - chronic conditions, negative health behaviors (smoking,alcohol abuse etc.) and effect on mental and reproductive health (Heise et al., 2002; Watts and Zimmerman, 2002; Krug et al., 2002; Campbell, 2002). Only Lloyd and Taluc (1999) have studied the impact of crime against women on economic

outcomes. They examine the effects of male violence (in intimate relationships) on WLFPR in low income areas of Chicago. They find that women who experience violence were as likely to be currently employed compared to those who did not.

To our knowledge, there has not been any systematic attempt to estimate the extent to which crime against women that originates outside the household affects women's economic decisions. The study closest to ours is Garcia-Reid (2007). They examine the effect of neighborhood environment (dangerousness) on school engagement among Hispanic girls. They find that neighborhood youth behaviour has a direct effect on school engagement of girls which is consistent with our theoretical expectation.

The theoretical background in this paper rests on a cost benefit framework – women decide to work if the pay off from working is greater than the costs. Costs include a component that is borne by men and women alike; such as travel costs. However, a part of it is specific to women – hazard associated with getting sexually attacked. The trauma of getting raped, for instance, can have long term effect on one's social behaviour. The papers mentioned above mostly deal with the behavioural consequences of sexual crimes against women. Our work, on the other hand, examines how perception (rather than actual incidence) of danger in a traditional social environment shapes one's decision to work. In particular, we enquire how the perception of getting sexually harassed affects WLFPR through the direct and implicit costs associated with traveling to work.

Our work is based on the prior that many components of the function that captures woman's pay-off, such as opportunity cost of staying at home (or that of joining

the workforce), economic condition of a family, attitude towards women etc. vary widely with the occupational and demographic structure of a society. For example, the trauma from any form of sexual harassment is a function of the stigma a society attaches to a victim of sexual crime. This varies with the characteristics of a society. Such stigma is likely to be high in conservative societies which value the *purity* of women strongly. Hence, in a conservative society crimes against women are expected to be a stronger deterrent of women's labor force participation than in a less conservative society.

Empirically, we test these possibilities using data from the India Human Development Survey (IHDS), 2005. Using neighborhood level aggregation on the perception of crime, we ask whether women are more or less likely to participate in the labor force in regions where perception of crime against women, outside the household, is higher. The rich nature of the IHDS data allows us to control for a range of covariates at the individual and neighborhood level. In addition, we allow for district fixed effects to address for the possibility that districts reporting a higher perception of crime against women are likely to be inherently different from districts reporting a lower perception of crime against women. Results indicate that women are less likely to work outside of their home in regions where they have a higher perceived threat of sexual harassment. To be precise, if the fraction of people who perceive crime against women to be high in the neighborhood increases by 1 per cent then it results in a decrease in women's workforce participation by 17 per cent. Moreover, this negative relationship is found to be stronger for younger, and hence more vulnerable, women and in households which are more orthodox. Our results are also robust to falsification exercises. The relevance of the cost benefit framework in analysing women's decision to participate in the labor force is also borne out

empirically. We find that crime has a higher deterrence effect when the opportunity cost of not working is low.

The rest of the paper is organized as follows. Section 2 outlines the analytical structure, Section 3 outlines the regression framework, Section 4 describes the data used for the analysis, Section 5 provides a discussion of our findings and Section 6 concludes.

2 Analytical Framework

An important mechanism underlying the relationship between crime against women and their decision to participate in the labor force is the perceived threat to a woman from being a victim herself. Specifically, consider two households in the same neighborhood. If one household has better information about the actual occurrence of crime then women in that household are more likely to be deterred from traveling to work than women who are less informed of the same occurrence. Here we outline a simple framework to understand the relationship between perception of crime in the neighborhood and the decision of an individual to work.

The latent decision to work outside the household is captured by the observed behavior as to whether an individual is actually employed. Specifically let us denote the event of joining the labor force by the following condition:

$$Work = \begin{cases} 1 & \text{if utility from working is} \geq \text{cost incurred from working} \\ 0 & otherwise \end{cases} \tag{1}$$

The net utility from working can be captured by the following expression

$$v = U(w - c) \tag{2}$$

where w is wage rate and c is the cost of going to work. The cost of traveling to work involves not only monetary cost of transportation but also the cost of being victimized by crime in the neighborhood. In that case, the probability of joining the labor force can be written as,

$$Pr(Work) = Pr(U(w - c) > \theta) \tag{3}$$

Here θ can be seen as the disutility of work or reservation income. The cost of going to work can further be written as

$$c = f(p, \gamma) \tag{4}$$

where p is the monetary cost of traveling to work and γ is the expected victimization cost of going to work. Note that p, the traveling cost, is likely to increase with the distance traveled to work and therefore $c_p > 0$. The component γ has two sub components: probability of being attacked (q) and the trauma of getting attacked (τ). Hence the expected victimization cost is:

$$\gamma = q \times \tau \tag{5}$$

The victimization cost is also likely to increase with distance traveled as the proba-

bility of being attacked (q) is likely to go up with increase in the distance traveled for work. Therefore, we can safely assume that $c_\gamma > 0$. A part of τ can be measured in monetary terms, say the hospitalization cost of the victim. But a more important part is the psychological cost which depends on how local culture values chastity. In a liberal society the stigma of getting sexually assaulted, for instance, is presumably lower than that in a conservative society. Hence, the same incidence of attack against women will have different implications for the cost of going to work in different societies. This means that the attack against women will have differential impact on WLFPR in societies with different cultural norms.

Formally, the probability of work can be estimated from the wage distribution. Suppose disutility from work (θ) follows the distribution function Φ. Let the probability of working be given by

$$\Pi = \Phi(U(w - c)) \tag{6}$$

The marginal effect of the probability of being attacked (q) on work participation is straight forward and given below:

$$\Pi_q = \frac{\partial \Pi}{\partial q} = -\Phi' U' c_\gamma \tau < 0 \tag{7}$$

Since $\Phi' > 0, U' > 0$, $c_\gamma > 0$, a positive trauma cost, τ implies $\Pi_q < 0$ i.e. work participation falls with an increase in the probability of attack.

Next we examine how this marginal effect (Π_q) varies with different parameters such as τ and w. The trauma of being attacked which is captured by τ is expected to be high in conservative families who assign a high value to chastity. We are interested in the absolute value of change of Π_q in response to a change in τ. For

simplicity, we take the distribution of disutility (Φ) to be uniform in the range $[\underline{\theta}, \overline{\theta}]$.

This would mean that the term Φ' is a constant. Let us call it k where $k = \frac{1}{\overline{\theta}-\underline{\theta}}$. For simplicity suppose, $c_\gamma = 1$. Hence, we have

$$\Pi_q = \frac{\partial \Pi}{\partial q} = -kU'\tau < 0 \tag{8}$$

Hence, we can derive a simple comparative static as follows:

$$\frac{\partial |\Pi_q|}{\partial \tau} = kU' + k\tau U''(-q) > 0 \tag{9}$$

From this equation we get the following proposition

Proposition 2.1 *The deterring effect of crime against women on women's labor force participation is stronger among the more conservative families than their less conservative counterpart.*

The intuition of this result is quite straight forward. With all other things equal, a conservative family that places a high value on chastity would be more traumatized with the prospect of its women getting sexually harassed than its liberal counterpart. This however, does not amount to say that there will be no trauma for a victim of sexual crimes from a liberal cultural background. Of course, the victim from a liberal family will also face the trauma. However, her trauma will not include the additional component that comes from the culture protecting the so called *honor of women*. Therefore, a high value of τ leads to a high cost of getting sexually harassed which in turn leads to a low probability of work force participation. From this we get our first proposition

Next we examine how existing market wage rates affect the deterring effect of crime against women. Specifically, we ask whether the marginal effect of rising crime on women's decision to work depends on the wage that one is likely to get. The comparative static result for wage is given by:

$$\frac{\partial|\Pi_q|}{\partial w} = kU''\tau < 0 \tag{10}$$

From this we get the following proposition

Proposition 2.2 *The deterring effect of crime against women is negatively related to expected wage rates.*

3 Empirical Framework

In this section we empirically test the predictions obtained in the previous section. The model yields three important predictions. First, crime against women deters women from participating in the labor force. Second, the marginal effect of crime on WLFPR depends on how society values a woman's chastity. In a conservative society, a woman's chastity is valued more which in turn would make the marginal effect stronger. Third, the marginal effect of crime on WLFPR depends on the market wage rate that one expects to earn if employed.

Our main empirical specification to address these questions is given by the following equation:

$$\text{ES}_{ihnd} = \beta_0 + \beta_1 \text{Crime}_{nd} + \beta_3 X_i + \beta_4 X_h + + D_d + \epsilon_{ihnd} \tag{11}$$

Where ES_{ihnd} is the employment status of a woman i from household h and

neighbourhood n in district d, Crime_{nd} is the variable capturing the perception about crime against women in the neighbourhood and X corresponds to all the individual as well as household level characteristics. The parameter of interest is β_1 which would give us the relationship between crime against women in a neighbourhood n and probability of woman i residing in that neighborhood to participate in the labor force.

There are a few empirical challenges associated with identifying β_1 consistently in this specification. First, there is a concern of reverse causality that comes at the household level; a woman who has to travel for work is more likely to be a victim of crime herself and hence more likely to have a higher perceived rate of crime. This positive relation between work status and perceived rate of crime may bias our results. To address this concern, we measure crime perception not at the household level but at a more aggregate level - in the neighborhood. Since the outcome variable is measured at the individual level and the crime indicator varies at a more aggregate neighborhood level, we cluster all the standard errors at the neighborhood level.

Given no data limitations, we would want to examine whether crime has any deterrent effect on women's decision to work. However the decision to work is a latent variable that cannot be observed. The variable that we can actually observe is the employment status of an individual which depends on both her decision to work and her ability to find a job. While her decision to work depends on the criminal environment in her neighbourhood, her employability largely depends on characteristics such as education, age etc. In this study we take the employment status as the dependent variable and make the assumption that the characteristics of the woman that determine her employability (education for example) does not depend on the crime characteristics in the neighbourhood.

A bigger challenge comes in terms of omitted variables. It is possible that regions with more traditional values experience higher rates of crime against women and women are also less likely to work outside home in these regions. Alternatively, regions that have fewer economic opportunities are also likely to be those that experience high crime rates. To address such concerns we include district fixed effects D_d in our model. We are then comparing neighborhoods within a district. This reduces the possibility of correlated unobservables at the district level that might simultaneously affect both crime rates and women's workforce participation rates.

To provide support to the comparative static results of our model, we ran a number of heterogeneity analyses to see how the marginal effect of crime on WLFPR varies with different characteristics of individuals as well as societies.

4 Data

We use individual and household level data from the first round of the India Human Development Survey (IHDS), 2004-2005. IHDS is a nationally representative survey of 41,554 households in 1503 villages and 971 urban neighborhoods across India. The data contains information on a rich set of individual and household level characteristics. Our dependent variable is the employment status (ES) of women in jobs outside of home. The IHDS data has details on the type of work each individual is involved in - whether he/she works at home (on the farm, with animals or in a family business) or outside of home as an agricultural wage laborer, non-agricultural wage laborer or in a salaried position. Using this information we construct a binary employment indicator (ES) taking value 1 for working outside of home. The reference category comprises of those who are not employed in any gainful activity either at home or outside.

Our main independent variable of interest is the perception of crime in the neighborhood. The data provides information about the perception of each household about different types of crime in their locality like conflicts, thefts, attacks/threats and, most importantly, harassment of girls. Specifically it asks 'How often are unmarried girls harassed in your village/neighbourhood?'. The response is a categorical variable that takes the values 0 for *never*, 1 for *sometimes* and 2 for *often*. We have aggregated these responses to the neighborhood level, to construct our measure of perception of crime against women as the proportion of households in the neighborhood who perceive that girls are harassed (responses 1 and 2) in their neighborhoods[2]. While the survey doesnt ask this question separately for married and unmarried girls, the perception of crime against women in general is likely to be correlated with higher incidence of harassment against unmarried girls. Hence, we use this question in the survey as a proxy for perception of crime against women in general[3].

The distribution of the perceived crime rate across the various districts of India is provided in Figure 3. The darker shades reflect higher proportion of people in the district who perceive high crime rates. What is most important for us is the substantial variation in the perception measure across, as well as, within the various states.

[2]The IHDS data has a village level identifier for household residing in rural areas. For the urban part of the data, IHDS provides urban-neighborhood indicators. The average sample size of an urban-neighborhood in the IHDS data is roughly 76 individuals.

[3]Unfortunately, we are also unable to conduct a sensitivity check on a sample of unmarried women. Since the avergae age at marriage is roughly 18 in the study sample and labor force participation is very low in the overall sample, we are left with very few observations who are unmarried and working. Effectively, we do not have enough variation to conduct the analysis separately for the unmarried sample.

The underlying identification in our estimation strategy comes from comparing regions with high perceived crime rates to ones with low perceived crime rates. Table 1 compares the mean characteristics for the observables in regions with high vis-a-vis low perceived crime rates. As can be seen, there is no significant difference in any of these characteristics across these groups. However, we do control for these variables in our regression specification. In addition, we also use a rich set of covariates like ownership of ration card, Kisan credit card as well as health/life insurance for anyone in the family to better capture the economic status of households. Further, we also include women's general awareness and exposure through variables like representation in *Mahila Mandal*(women's community group) and access to various mass media like radio, newspaper and television.

However, we cannot rule out the possibility that these neighborhoods might also differ along other unobserved characteristics even within a district. To allay our concerns further, we provide evidence from placebo tests that use crimes that are gender neutral and also consider men's work force participation rates.

5 Results

5.1 Baseline

Our paper is based on the premise that crime is a potential deterrent for women to work away from their home. One logical conclusion from this argument is that crime should be an effective deterrent for non agricultural work force, which unlike their agricultural counterpart, requires traveling to go to their workplace. Hence we restrict our analysis to non-agricultural employment. Since around 85 percent of working women in rural areas are employed in agriculture (Srivastava and Srivastava,

2010), we further restrict our sample to urban regions [4]. In addition, for our main analysis, we only look at women in the age group of $15 - 45$ years as it constitutes the more vulnerable and hence most relevant group of women for our analysis.

Table 2 presents the estimated relationship between crime and WLFPR for our baseline framework using a linear model[5]. Such a regression often suffers from endogeneity problem as locational factors are likely to be correlated both with local incidence of crime and with women's labor force participation rate thereby creating omitted variable bias. For instance it is possible that women are much less likely to go out for work in regions characterized by patriarchal values and at the same time there may be a higher rate of crime against women in these regions. Since the crime perception is measured at the neighborhood level, we address this by accounting for district level unobserved variation. Our identification comes from the comparison of neighborhoods within a particular district. Accordingly, all the columns in table 1 include the district fixed effects. Column 1 shows the bivariate relationship without controlling for any covariates. The coefficient indicates that crime serves as a significant deterrent for women's work force participation decision. Column 2 reports the results after controlling for individual characteristics. Specifically we control for age, a quadratic in age, years of education and marital status as these can affect the probability od participation in the labor market as well as their exposure to crime. Results in column 2 indicate that after controlling for these additional variables, the marginal effect of perceived crime rate on employment status of women does not

[4]We also estimated our baseline model for different samples; namely for women in rural regions and for women in agricultural jobs. In none of these models, we found crime to have a deterrent effect on WLFPR, possibly due to reasons discussed above

[5]We also provide a probit estimation of the baseline model in Table A1 that presents the odds-ratios. In spirit, the results reiterate the findings in the linear model higher crime against women reduces the probability of women participating in the labor force. However, the linear model is our preferred framework because fixed effects in non-linear models are known to generate inconsistent estimates (Greene et al., 2002)

change significantly.

The decision to participate in labor force is also dependent on factors pertaining to the household that she is a part of, which affect the benefits and opportunity costs of making this decision. For instance, the presence of children or older household members might increase the opportunity cost of employment for women hence affecting their decision to work. We control for a host of household variables such as household size(*HH size*), number of persons in the household involved in any kind of work (*HH Employed*), number of children (*HH Children*), the highest level of education by any member(*HH Education*), in Column 3. Column 4 additionally includes household income(*HH Income*) and other indicators for household economic status(*Economics Status*) like ownership of ration card, health insurance and life insurance. Column 5 controls for household social status(*Social Status*), namely caste and religions. Finally, column 6 accounts for exposure of women to various forms of media like newspapers, radio and television as well as participation in village level women's groups(*Awareness & Media Exposure*). It is important to include these variables to the extent that they might simultaneously affect both employment decisions and household's perception of crime in the neighborhood.

The coefficients on the control variables suggest similar results as found earlier in the existing literature on women's labor force participation decision (Klasen and Pieters, 2012; Mammen and Paxson, 2000). Age has a positive significant effect on employment status of women indicating that older women are more likely to work outside of home. However, the negative coefficient on the quadratic of age shows that the effect reverses after a certain level of age. There is a negative relationship between years of education and the employment status. Women who study more are likely to stay out of current labor force. Marital status negatively affects women's

decision to work. The negative coefficient on household income suggests that as income increases in the household, there is less need for women to work outside home - a less favored option in a conservative society.

The coefficient on household size is also negative suggesting that women may have more household chores to attend to in a big household or the household may be characterized by more traditional joint family values thereby discouraging women to work. Number of children shows a counter intuitive positive and significant effect. However it is to be noted that this variable captures the number of children in household aged $0 - 14$ years. These older kids often take care of their younger siblings thereby facilitating the decision of the mother to work outside of their home.[6]

The highest level of adult education in the household is negatively related to the employment status of women. Higher level of education might reflect a better job, thereby, fetching a higher income. Higher income implies a lesser need for the women of that household to work away from home. Indeed, the coefficient on income in column 4 suggests that women are less likely to work in households with higher levels of income.[7] Most importantly for us, though, is the stability of the effect of crime perception on WLFPR across all specifications. It doesn not change in Columns 5 and 6 as we add the social status indicators and women's exposure to media. This give us confidence that the estimated effect of crime is unlikely to be confounded by unobserved factors.

[6]We also ran the regression by controlling for an alternate variable indicating the presence of children in the 0-5 year age group. Our results remain unchanged.

[7]There is a possibility of non monotonic relationship between income and labour force participation. We explore this in the appendix. The sqaure of income term is negative significant indicating that there is an income threshold beyond which women with more family income are less likely to work. However, this does not change the qualitative relation between WLFPR and crime. Given the similarity of coefficients across Table 2 and Table A2, we choose the more parsimonious specification, without the income quadratic, as our preferred specification. We thank an anonymous referee for this suggestion.

The coefficient in the full specification, in Column 6, indicates that if the fraction of people who perceive crime against women to be high in the neighborhood goes up by 1% then it leads to a 17 % reduction in women's workforce participation.[8]

5.2 Placebo

While the coefficient stability across the various models, including district fixed effects and a rich set of observables, reduce the possibility of confounders, we cannot completely rule out unobserved factors driving the results in Table 2. To allay these concerns further, we conduct a placebo analysis in Table 3.

As discussed in our theoretical framework, the deterrent effect of crime works through the trauma attached to such crimes. Since gender neutral crimes (e.g. robbery) are unlikely to have the trauma effect through a higher stigma cost, it should not affect women's decision to participate in the labor force to the same extent as crime against women. Hence in Table 3 we present results from the regression of women's work force participation on gender-neutral crimes such as theft and break-in. The specification is comparable to the one in Column 6 of Table 2. As expected, there is no significant relationship between household perception about these sex-neutral crimes in the neighbourhood and women's decision to work.

Further, if the relationship in Table 2 is driven by correlated unobservables, like an underdeveloped labor market, then the spurious relationship should also show up in terms of men's labor market participation rate. Hence in Column 2, we regress perceived crime against women on men's labor force participation. Crime against women does not affect men's decision to work, as can be expected. These findings

[8]The average rate of women's employment in our sample is roughly 3% and approximately 14% of a population in a village perceive crime against women to be high.

give us some confidence that the results in Table 2 are not spurious.

5.3 Heterogeneity Analysis

The deterrence effect of crime on work force participation decision could be a result of various underlying factors. The empirical exercise in Section 5.2 shows that only sexual crimes against women matter for women's decision to work. Stigma attached to the victims of sexual crimes could explain this disparity, as outlined in our theoretical model. In this section, we empirically investigate this possibility. We use a range of proxies to capture social stigma that might be attached to the female victims of sexual crimes. This exercise allows us to determine more closely the channels through which the deterrence effect works.

5.3.1 Stigma Cost:Age

To study the effect of stigma cost, we start with a heterogeneity analysis that estimates the effect of crime on women's decision to participate in the work force, separately for different age groups. The stigma cost from crime is expected to be higher for younger women than their older counterparts. Since the stigma of sexual crimes is likely to be much higher for younger women in relation to older women, our theoretical model suggests that crime will be a more serious deterrent of women's decision to work for the younger group. Results in Table 4 confirm our theoretical expectations. Crime has a negative deterrent effect on employment status of women for age group $21-30$ and $31-40$. However there is no significant effect for older women.[9]

[9]It has to be noted that we also did not find any significant effect for the 15-20 age group. However one reason for this may be that a very low proportion of this group are employed in our sample and hence it is difficult to find any effect from such a low variation.

5.3.2 Stigma Cost: *Purdah* Practice

In addition to age, the stigma cost that the society attaches to a victim of sexual crime is expected to be higher in a more conservative society. This is because a conservative society is expected to place a high value on a girl's chastity. To see this effect, we conduct a heterogeneity analysis by dividing our sample into two subsamples - one group where a certain ritual namely the *Purdah* practice is observed among women and another group where women are not required to follow any such practice. *Purdah* refers to the practice in certain Muslim and Hindu societies of screening women from men or strangers by covering their faces with clothing.

The IHDS dataset asks each woman individually as to whether she practices *Purdah* and hence enables us to create these subsamples. For women in the *Purdah* sample, the stigma cost is expected to be high as they come from a conservative society. Our theory suggests that there will be a stronger deterrent effect of crime on women's labor force participation decision for this group. The results are in accordance with this expectation. Columns 1 and 2 in Table 5 show that though crime is a significant deterrent to women's work decision for both these groups, the magnitude is much higher for group of women who belong to societies that practice *Purdah*.

5.3.3 Stigma Cost: Domestic Violence

Stigma costs associated with sexual crimes against women are also likely to be much higher in patriarchal households compared to liberal households. Hence we construct a measure of patriarchy from the domestic violence questions in the IHDS survey. Specifically, women are asked whether they are beaten up by their husbands if they went out of the house without taking prior approval of the husband. Given a patriarch's tendency to control women's behaviour, a family in which a woman is beaten

up for stepping outside without permission must have deep rooted patriarchal values. Hence, we label such households as patriarchal and compare them with the relatively liberal households (where women are not beaten up). Our results are consistent with our theoretical prediction. As indicated in columns 1 and 2 of Table 6, in general crime reduces the work force participation rate for women in both cases. However, there is a bigger deterrence effect in the former set of households that practice higher levels of orthodoxy.

5.3.4 Opportunity Cost

Our theoretical framework suggests that a woman takes the decision to work or not after comparing the benefits of working with cost of working. Higher wages imply higher opportunity costs of not working. Hence the net deterrent effect of crime on work force participation decision, that we observe in section 5.1, is likely to be lower for individuals with the potential to earn higher wages. In other words, women are less likely to drop out of the labor force, because of crime, in markets that offer higher wages.

One way to investigate this possibility is to compare across individuals who would potentially earn the same wage but only differ in terms of their location in high as opposed to low crime neighborhoods. To do this we proceed in two steps. In the first step we estimate the following Mincerian earnings function for women:

$$W_{ihd} = f(X_i, H_h, D_d) \tag{12}$$

where W_{ihd} represents the wage of the i^{th} woman from household h and district d. On the right hand side of the estimation equation we include a vector of individual specific characteristics captured by X_i. This vector includes arguments of standard

Mincerian equation such as age, education, religion, caste, marital status of the ith woman and her community participation. The second vector argument of this function, represented by H_h, includes a bunch of household level characteristics pertaining to the i^{th} woman such as household composition, household economic status and number of working members in the household. We have also included a district level dummy D_d which allows us to compare women coming from the same district.

Using this function, we predict the wages for women in the full sample and then go on to define a woman as having a potentially high wage earning ability if her predicted wage is higher than the mean estimated wage of the sample. We then estimate equation 11 on sub-samples of women with potentially high and low wages. The results from this analysis are reported in Table 7. The marginal deterrent effect of crime is much higher when potential wages are low as depicted by the coefficient in column 2. In fact, the coefficients suggest that women are 8 times more likely to drop out of low-wage jobs compared to high-wage jobs, for the same increase in the rate of crime against women.

5.4 Differences in Perception by Gender

So far we have measured perceived crime at the household level where we do not observe whether the perception is that of a male member or a female member. However, it is natural that the perception of women should be a more relevant predictor of their own workforce participation. Hence we split the sample by the gender of the respondent, whose perception is reflected in the survey. Table 8 confirms this hypothesis. While a higher perception of crime of either male or female respondents

deters workforce participation of women, the effect of women's perception is almost twice as that of men's perception.

6 Conclusion

In this paper we ask whether perceived threat of sexual violence in the neighborhood affect a woman's decision to participate in the labor force. Our theoretical framework suggests that an increase in perceived crime against women, increases the cost of traveling to work. This increases the cost of participating in the workforce for a woman. At the margin, this implies that women would be less likely to participate in the labor force when perceived threat of crime against women is high. Our paper however goes a step further to argue that the marginal effect depends on the extent to which a society attaches stigma to victims of sexual crimes.

The issues of declining labour force participation of women and crime against women are well discussed in the broad literature. Most of these discussions treats the former as a labour market issue while the latter as a law and order situation. One important contribution of our paper is to connect these issues and see both of them in the general backdrop of a patriarchal value system. Patriarchy can be seen as a set as values that tend to control women's behaviour. While pervasive fear of rape force women to stay back at home within the control of patriarchy, women's work force participation does the opposite by empowering them. Hence, patriarchy as a social order finds its support in an atmosphere of fear. Against this general backdrop, our analysis probes into the relationship between patriarchy, WLFPR and crime against women.

Our findings point to a feedback mechanism – how patriarchy's attempt to control women through the instrument of rape gets reinforced in presence of patriarchal values. Our empirical analysis is static in nature and therefore cannot completely nail the dynamic nature of the feedback mechanism. Nevertheless, from our general framework, one can logically deduce a feedback mechanism that will lead to a *vicious cycle of patriarchy*. We have shown that fear of rape prevents women from joining the work force and the deterrent effect is stronger in conservative societies. But such societies are already characterized by a lower participation of women in the work force than their liberal counterparts. Therefore, in such a society women's work force participation will keep on shrinking over the generations and it will be only a matter of time that such a society will end up in a low level equilibrium with a highly patriarchal value system. We have seen such spiraling down mechanism in some South Asian countries where women students and workers get threats from religious fanatics.

It is important to note that more than the actual incidence of rape, what matters more is the perceived fear which in turn depends on people's trust on the institutions. Hence, even if two places have same number of reported cases of rape, the place with greater perceived threat of rape will see less work participation by women. This is consistent with our empirical strategy which uses fear perceptions rather than actual incidence of rapes.

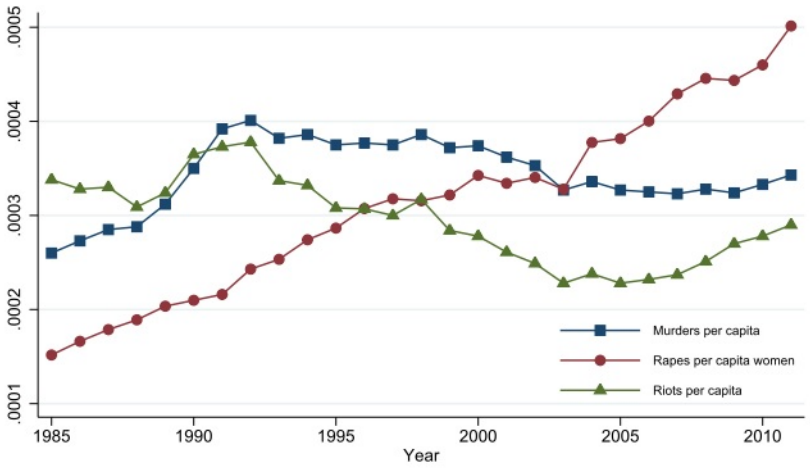
Besides the novelty of assuming a general theoretical position, our approach has some very important policy implication. One of the policies often followed in South Asian countries to encourage women to participate in social life is to dedicate parts of public transportation only to women. For example, separate seats are marked for women in buses and trains. While this is likely to reduce the probability of being

a victim of crime in some limited settings, it can hardly deal with the general environment of fear that works as a grand impediment to women's liberalization. Most of the studies on this issue treat the problem of sexual crime against women from a rational-technical perspective and therefore miss the underlying politics of the problem. The policy prescriptions coming out of such rational technical paradigm often include creating public spaces such as buses, trains, parks or gymnasiums exclusively for women. These policies could be effective in the short run in creating a sense of security for women in a limited way but fails to address the general problem of patriarchy. Some of the recent policies, however, have managed to confront dominant social value paradigm at the political level even though that was not the announced objective of the policies. The case of introducing women cab driver is one such example. In India, where cases of rape by cab drivers have hit the newsstand of late, such policy can definitely create a sense of assurance for women passengers. But besides this intended outcome, the policy of women cab drivers can also pose political challenge to patriarchy by questioning the notion of so called *male occupations* and *female occupations*(Baruah, 2017).

Our work seeks to look beyond the rational-technical solutions to the problem of sexual crime against women and enquire into the role of a patriarchal value system in general and society's attitude towards women's chastity in particular, in constituting rape as an instrument of control. At the policy level our framework suggests that policy based incentives be given to the families to overcome the fear and stigma attached to sexual crimes. Such policies may include tax incentives for families with working women as well as campaign directed towards male members of the family. Providing incentive to the family for empowering women is common when it comes to education policies targeting the girls. However, we do not see such interventions

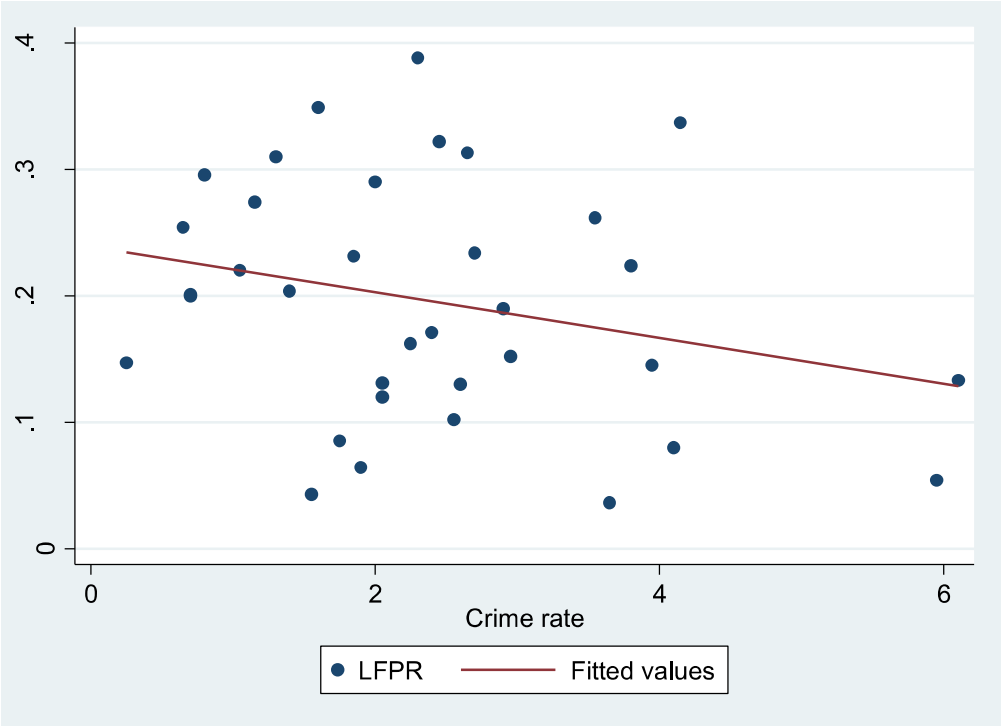
when it comes to enhancing women's labour market participation. Our framework suggests use of instruments that target the family.

Figure 1: *Trends in different types of crime*



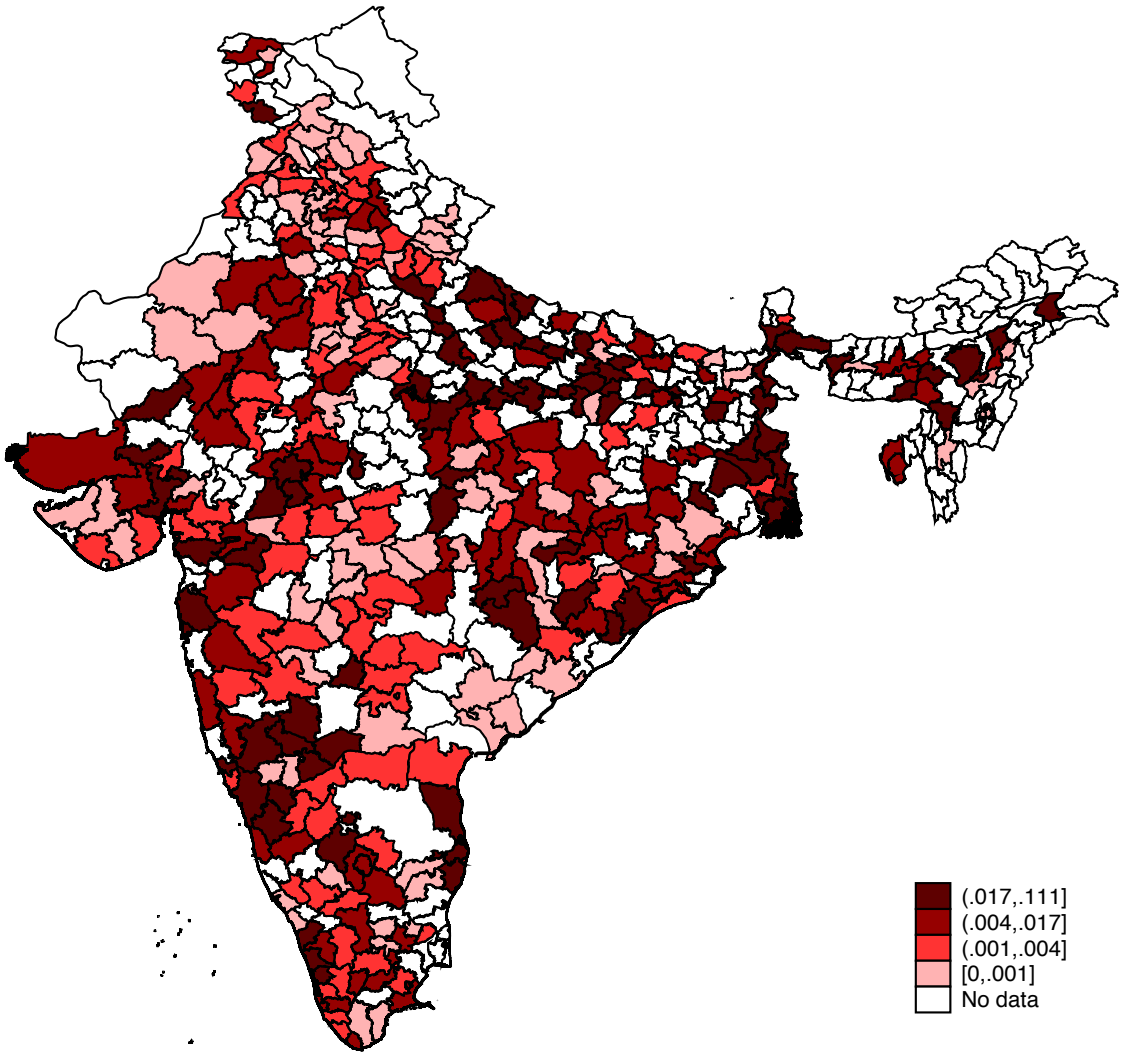
Source: National Crime Records Bureau 2007–2011, own calculations.

Figure 2: *Relationship between LFPR and number of rapes*



Source: National Crime Records Bureau 2008 and 66th round of the National Sample Survey, own calculations. *Notes:* X axis denotes crime rape against women in forms of rape and abduction reported in 2008 and are obtained from NCRB. Y axis denotes women's labor force participation rate in 2009, obtained from the 66th round of National Sample Survey (NSS).

Figure 3: *Distribution of perceived crime against women*



Source: IHDS, 2005, own calculations.
Notes: The map depicts district wise fraction of households reporting high perceived crime against women in their neighborhood. Darker shades represent higher fractions.

Table 1: *Summary*

	High Crime		Low Crime	
	Mean	SD	Mean	SD
Age	27.50	18.63	27.90	18.62
Education	6.24	5.00	6.20	5.09
Married	0.45	0.49	0.46	0.50
HH Size	5.90	2.69	5.81	2.66
Childen	1.86	1.63	1.78	1.60
Employed	1.74	1.15	1.76	1.15
HH Highest Education	9.77	4.50	9.76	4.67
Caste	0.44	0.49	0.48	0.49
Religion	0.78	0.41	0.73	0.43
Log HH Income	10.85	1.33	10.86	1.23
Observations	21091		51133	

Source: IHDS 2004–2005, own calculations.
Notes: Standard Deviation in parentheses. Sample consists of females aged between 15 and 45 years. Full Sample: Those who work at home plus outside of home plus the category. Baseline Sample: Only those who are employed outside of home plus the category. Sample of Interest: Urban Sample consisting of females employed in Non-Agricultural Wage labor plus the category Category: Those not involved in any from of employment

Table 2: *Crime against women and Women's LFPR: Baseline*

Dependent Variable: Employment Status						
	(1)	(2)	(3)	(4)	(5)	(6)
	None	+Individual	+Household	+HH Income	+HH Social Status	+Women's Exposure
Crime Against Women	-0.034***	-0.042***	-0.037***	-0.036***	-0.038***	-0.038***
	(0.012)	(0.012)	(0.011)	(0.011)	(0.011)	(0.011)
Individual Controls						
Age		0.015***	0.016***	0.016***	0.016***	0.015***
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age-sq		-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Education		-0.006***	-0.002***	-0.002***	-0.002***	-0.002***
		(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Married		-0.049***	-0.068***	-0.068***	-0.068***	-0.065***
		(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Household Controls						
HH Size			-0.021***	-0.021***	-0.021***	-0.020***
			(0.002)	(0.002)	(0.002)	(0.002)
HH Childen			0.017***	0.017***	0.017***	0.016***
			(0.002)	(0.002)	(0.002)	(0.002)
HH Employed			0.063***	0.066***	0.066***	0.064***
			(0.005)	(0.005)	(0.005)	(0.005)
HH Highest Education			-0.004***	-0.004***	-0.004***	-0.003***
			(0.001)	(0.001)	(0.001)	(0.001)
HH Income				-0.008***	-0.008***	-0.008***
				(0.001)	(0.001)	(0.001)
Economic Status	No	No	No	Yes	Yes	Yes
Social Status	No	No	No	No	Yes	Yes
Awareness & Media Exposure	No	No	No	No	No	Yes
Constant	0.039***	-0.113***	-0.119***	-0.044*	-0.045*	-0.016
	(0.003)	(0.024)	(0.023)	(0.024)	(0.023)	(0.025)
Observations	15,043	15,043	15,043	15,024	15,024	14,731
Adjusted R-squared	0.086	0.118	0.193	0.197	0.197	0.196

Source: IHDS 2004–2005, own calculations.
Notes: Standard errors in parentheses, adjusted for clustering at village level. Column 4 includes Economic Status consisting of: ownership of Ration Card, Health Insurance for anyone in the household, Life Insurance for anyone in the household, Kisan Credit card. Social Status in Column 5 includes religion and caste indicators. Awareness and Media Exposure in Column 6 include the representation of women in Mahila Mandals(village level women's groups) and exposure of women to various forms of media like newspapers, radio and television.
*** significant at 1%; ** significant at 5%; * significant at 10%.

Table 3: *Placebo*

Dependent Variable: Employment Status		
	Women	Men
	(1)	(2)
Gender Neutral Crime	-0.000	
	(0.021)	
Crime Against Women		0.012
		(0.028)
Individual Controls		
Age	0.014***	0.056***
	(0.002)	(0.003)
Age-sq	-0.000***	-0.001***
	(0.000)	(0.000)
Education	-0.002***	-0.017***
	(0.000)	(0.001)
Married	-0.065***	0.246***
	(0.006)	(0.015)
Household Controls		
HH Size	-0.020***	-0.060***
	(0.002)	(0.003)
Childen	0.016***	0.059***
	(0.002)	(0.004)
Employed	0.064***	0.133***
	(0.005)	(0.005)
HH Highest Education	-0.003***	-0.004***
	(0.001)	(0.001)
Log HH Income	-0.008***	0.004
	(0.001)	(0.002)
Economic Status	Yes	Yes
Caste & Religion	Yes	Yes
Awareness & Media Exposure	Yes	Yes
Constant	-0.020	-0.392***
	(0.025)	(0.049)
Observations	14,731	8,538
Adjusted R-squared	0.196	0.587

Source: IHDS 2004–2005, own calculations.
Notes: Linear probability models. Standard errors in parentheses, adjusted for clustering at village level. Column 3 additionally includes the variable Economic Status which consists of the following variables: ownership of Ration Card, Health Insurance for anyone in the household, Life Insurance for anyone in the household, Kisan Credit card. Column 4 additionally controls for Awareness and Media Exposure which includes the representation of women in Mahila Mandals(village level women's groups) and exposure of women to various forms of media like newspapers, radio and television.
*** significant at 1%; ** significant at 5%; * significant at 10%.

Table 4: *Crime against women and Women's LFPR: Age Vulnerability*

Dependent Variable: Employment Status					
	Age Groups				
	15-20	21-30	31-40	41-50	51-60
	(1)	(2)	(3)	(4)	(5)
Crime Against Women	0.006	-0.053***	-0.075***	-0.005	0.015
Individual Controls					
	(0.013)	(0.016)	(0.022)	(0.018)	(0.023)
Education	-0.001	-0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Married	-0.009	-0.054***	-0.119***	-0.031**	-0.003
	(0.008)	(0.008)	(0.019)	(0.015)	(0.011)
Household Controls					
HH Size	-0.010***	-0.024***	-0.032***	-0.019***	-0.015***
	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Childen #	0.007***	0.026***	0.019***	0.014***	0.009*
	(0.003)	(0.003)	(0.003)	(0.005)	(0.005)
Employed #	0.037***	0.061***	0.127***	0.066***	0.041***
	(0.006)	(0.006)	(0.010)	(0.008)	(0.007)
HH Highest Education	-0.001	-0.004***	-0.005***	-0.005***	-0.004**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Log HH Income	-0.004***	-0.007***	-0.013***	-0.009***	-0.005*
	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)
Economic Status	Yes	Yes	Yes	Yes	Yes
Awareness & Media Exposure	Yes	Yes	Yes	Yes	Yes
Caste & Religion	Yes	Yes	Yes	Yes	Yes
Observations	4,011	5,428	3,797	2,755	1,908
Adjusted R-squared	0.134	0.185	0.319	0.199	0.170

Source: IHDS 2004–2005, own calculations.
Notes: Linear probability models. All regressions include district Fixed Effects. Standard errors in parentheses, adjusted for clustering at village level. All regressions additionally include the following variables: Economic Status which consists of the following variables: ownership of Ration Card, Health Insurance for anyone in the household, Life Insurance for anyone in the household, Kisan Credit car;, Caste and Religion; Awareness and Media exposure which includes the representation of women in Mahila Mandals(village level women's groups) and exposure of women to various forms of media like newspapers, radio and television.
*** significant at 1%; ** significant at 5%; * significant at 10%.

Table 5: *Stigma Cost: Purdah System*

Dependent Variable: Employment Status		
	No Purdah	Purdah
	(1)	(2)
Crime Against Women	-0.032**	-0.053***
	(0.015)	(0.018)
Individual Controls		
Age	0.019***	0.012***
	(0.003)	(0.003)
Age-sq	-0.000***	-0.000***
	(0.000)	(0.000)
Education	-0.003***	-0.000
	(0.001)	(0.001)
Married	-0.086***	-0.050***
	(0.010)	(0.009)
Household Controls		
HH Size	-0.023***	-0.019***
	(0.002)	(0.002)
Childen #	0.018***	0.016***
	(0.003)	(0.003)
Employed #	0.079***	0.058***
	(0.007)	(0.006)
HH Highest Education	-0.002*	-0.004***
	(0.001)	(0.001)
Log HH Income	-0.008***	-0.008***
	(0.002)	(0.002)
Economic Status	Yes	Yes
Awareness & Media Exposure	Yes	Yes
Caste & Religion	Yes	Yes
Observations	7,038	6,114
Adjusted R-squared	0.250	(0.192

Source: IHDS 2004–2005, own calculations.
Notes: Linear probability models. All regressions include district Fixed Effects. Standard errors in parentheses, adjusted for clustering at village level.All regressions additionally include the following variables: Economic Status which consists of the following variables: ownership of Ration Card, Health Insurance for anyone in the household, Life Insurance for anyone in the household, Kisan Credit car;, Caste and Religion; Awareness and Media exposure which includes the representation of women in Mahila Mandals(village level women's groups) and exposure of women to various forms of media like newspapers, radio and television.
*** significant at 1%; ** significant at 5%; * significant at 10%.

Table 6: *Stigma Cost: Domestic Violence*

Dependent Variable: Employment Status		
	No Domestic Violence	Domestic Violence
	(1)	(2)
Crime Against Women	-0.029***	-0.082**
	(0.010)	(0.033)
Individual Controls		
Age	0.018***	0.012***
	(0.002)	(0.004)
Age-sq	-0.000***	-0.000*
	(0.000)	(0.000)
Education	-0.002***	-0.002*
	(0.001)	(0.001)
Married	-0.071***	-0.069***
	(0.008)	(0.014)
Household Controls		
HH Size	-0.021***	-0.020***
	(0.002)	(0.003)
Childen #	0.017***	0.018***
	(0.002)	(0.004)
Employed #	0.069***	0.069***
	(0.006)	(0.010)
HH Highest Education	-0.003***	-0.002*
	(0.001)	(0.001)
Log HH Income	-0.008***	-0.012***
	(0.001)	(0.003)
Economic Status	Yes	Yes
Awareness & Media Exposure	Yes	Yes
Caste & Religion	Yes	Yes
Obsevations	9,689	3,437
Adjusted R-squared	0.226	0.197

Source: IHDS 2004–2005, own calculations.
Notes: Linear probability models. All regressions include district Fixed Effects. Standard errors in parentheses, adjusted for clustering at village level.All regressions additionally include the following variables: Economic Status which consists of the following variables: ownership of Ration Card, Health Insurance for anyone in the household, Life Insurance for anyone in the household, Kisan Credit car;, Caste and Religion; Awareness and Media exposure which includes the representation of women in Mahila Mandals(village level women's groups) and exposure of women to various forms of media like newspapers, radio and television.
*** significant at 1%; ** significant at 5%; * significant at 10%.

Table 7: *Opportunity Cost*

Dependent Variable: Employment Status		
	Expected High Wage	Expected Low Wage
	(1)	(2)
Crime Against Women	-0.012***	-0.081***
	(0.005)	(0.024)
Individual Controls		
Age	0.003***	0.025***
	(0.001)	(0.003)
Age-sq	-0.000**	-0.000***
	(0.000)	(0.000)
Education	-0.001	-0.001
	(0.000)	(0.001)
Married	-0.018***	-0.093***
	(0.004)	(0.010)
Household Controls		
HH Size	-0.004***	-0.035***
	(0.001)	(0.003)
Childen #	0.003**	0.031***
	(0.001)	(0.004)
Employed #	0.018***	0.098***
	(0.003)	(0.007)
HH Highest Education	-0.001*	-0.004***
	(0.000)	(0.001)
Log HH Income	-0.007***	-0.011***
	(0.002)	(0.002)
Economic Status	Yes	Yes
Awareness & Media Exposure	Yes	Yes
Caste & Religion	Yes	Yes
Obsevations	8,341	6,390
Adjusted R-squared	0.067	0.258

Source: IHDS 2004–2005, own calculations.
Notes: Linear probability models. All regressions include district Fixed Effects. Standard errors in parentheses, adjusted for clustering at village level. All regressions additionally include the following variables: Economic Status which consists of the following variables: ownership of Ration Card, Health Insurance for anyone in the household, Life Insurance for anyone in the household, Kisan Credit car;, Caste and Religion; Awareness and Media exposure which includes the representation of women in Mahila Mandals(village level women's groups) and exposure of women to various forms of media like newspapers, radio and television.
*** significant at 1%; ** significant at 5%; * significant at 10%.

Table 8: *Gender differences in Perception*

Dependent Variable: Employment Status		
	Male Perception	Female Perception
	(1)	(2)
Crime Against Women	-0.025**	-0.055***
	(0.011)	(0.019)
Individual Controls		
Age	0.009***	0.021***
	(0.002)	(0.003)
Age-sq	-0.000***	-0.000***
	(0.000)	(0.000)
Education	-0.001**	-0.003***
	(0.001)	(0.001)
Married	-0.037***	-0.095***
	(0.006)	(0.010)
Household Controls		
HH Size	-0.017***	-0.026***
	(0.002)	(0.003)
Childen #	0.013***	0.021***
	(0.002)	(0.004)
Employed #	0.056***	0.079***
	(0.005)	(0.007)
HH Highest Education	-0.002**	-0.003***
	(0.001)	(0.001)
Log HH Income	-0.007***	-0.010***
	(0.001)	(0.002)
Economic Status	Yes	Yes
Awareness & Media Exposure	Yes	Yes
Caste & Religion	Yes	Yes
Observations	9,337	5,394
Adjusted R-squared	0.161	0.246

Source: IHDS 2004–2005, own calculations.
Notes: Linear probability models. All regressions include district Fixed Effects. Standard errors in parentheses, adjusted for clustering at village level. All regressions additionally include the following variables: Economic Status which consists of the following variables: ownership of Ration Card, Health Insurance for anyone in the household, Life Insurance for anyone in the household, Kisan Credit car;, Caste and Religion; Awareness and Media exposure which includes the representation of women in Mahila Mandals(village level women's groups) and exposure of women to various forms of media like newspapers, radio and television.
*** significant at 1%; ** significant at 5%; * significant at 10%.

Appendix: Supplementary Tables

Table A1: *Crime against women and Women's LFPR: Probit*

Dependent Variable: Employment Status						
	None	+Individual	+Household	+HH Income	+Women's Exposure	+Women's Exposure
Crime Against Women	-0.688***	-0.873***	-0.835***	-0.913***	-1.016***	-1.016***
	(0.230)	(0.236)	(0.291)	(0.295)	(0.313)	(0.313)
Individual Controls						
Age		0.215***	0.321***	0.321***	0.318***	0.318***
		(0.027)	(0.039)	(0.039)	(0.041)	(0.041)
Age-sq		-0.003***	-0.004***	-0.004***	-0.004***	-0.004***
		(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Education		-0.102***	-0.041***	-0.039***	-0.031***	-0.031***
		(0.006)	(0.010)	(0.010)	(0.011)	(0.011)
Married		-0.671***	-0.947***	-0.895***	-0.878***	-0.878***
		(0.078)	(0.105)	(0.106)	(0.109)	(0.109)
Household Controls						
HH Size			-0.654***	-0.652***	-0.629***	-0.629***
			(0.051)	(0.050)	(0.051)	(0.051)
HH Childen			0.567***	0.566***	0.543***	0.543***
			(0.056)	(0.055)	(0.056)	(0.056)
HH Employed			1.251***	1.306***	1.288***	1.288***
			(0.068)	(0.069)	(0.069)	(0.069)
HH Highest Education			-0.068***	-0.057***	-0.048***	-0.048***
			(0.011)	(0.011)	(0.012)	(0.012)
HH Income				-0.208***	-0.192***	-0.192***
				(0.024)	(0.028)	(0.028)
Economic Status	No	No	No	Yes	Yes	Yes
Social Status	No	No	No	No	Yes	Yes
Awareness & Media Exposure	No	No	No	No	No	Yes
Constant	-1.778***	-4.496***	-7.104***	-5.327***	-5.304***	-5.304***
	(0.448)	(0.565)	(1.685)	(1.742)	(1.781)	(1.781)
Observations	10,841	10,841	10,841	10,826	10,345	10,345

Source: IHDS 2004–2005, own calculations.
Notes: Standard errors in parentheses, adjusted for clustering at village level. Column 4 includes Economic Status consisting of: ownership of Ration Card, Health Insurance for anyone in the household, Life Insurance for anyone in the household, Kisan Credit card. Social Status in Column 6 includes religion and caste indicators. Awareness and Media Exposure in Column 7 include the representation of women in Mahila Mandals(village level women's groups) and exposure of women to various forms of media like newspapers, radio and television.
*** significant at 1%; ** significant at 5%; * significant at 10%.

Table A2: *Baseline with Quadratic in Income*

	(1)	(2)
	Comparison Tab 2 Col4	Comparison Tab 2 Col6
Crime Against Women	-0.037***	-0.038***
	(0.011)	(0.011)
Individual Controls		
Age	0.015***	0.014***
	(0.002)	(0.002)
Age-sq	-0.000***	-0.000***
	(0.000)	(0.000)
Education	-0.002***	-0.002***
	(0.000)	(0.000)
Married	-0.067***	-0.064***
	(0.006)	(0.006)
Household Controls		
HH Size	-0.021***	-0.020***
	(0.002)	(0.002)
Childen	0.017***	0.016***
	(0.002)	(0.002)
Employed	0.066***	0.064***
	(0.005)	(0.005)
HH Highest Education	-0.003***	-0.003***
	(0.001)	(0.001)
Log HH Income	0.008**	0.006**
	(0.003)	(0.003)
Log HH Income Square	-0.001***	-0.001***
	(0.000)	(0.000)
Economic Status	Yes	Yes
Social Status	No	Yes
Awareness & Media Exposure	No	Yes
Constant	-0.092***	-0.056**
	(0.025)	(0.026)
Observations	15,024	14,731
Adjusted R-squared	0.198	0.197

Source: IHDS 2004–2005, own calculations.
Notes: Linear probability models. All regressions include district Fixed Effects. Standard errors in parentheses, adjusted for clustering at village level. Economic Status consists of the following variables: ownership of Ration Card, Health Insurance for anyone in the household, Life Insurance for anyone in the household, Kisan Credit car;, Caste and Religion; Awareness and Media exposure includes the representation of women in Mahila Mandals(village level women's groups) and exposure of women to various forms of media like newspapers, radio and television.
*** significant at 1%; ** significant at 5%; * significant at 10%.

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