Crime and Women's Labor Force Participation

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Abstract

Our study is motivated by two disturbing evidences concerning women in India. On one hand the number of crimes against women (CAW) is on the rise in India while on the other hand womens labor force participation rate (WLFPR) has been declining over the last three decades. How much of this decline in WLFPR can be assigned to increasing instances of crime against women? We estimate the marginal effect of CAW on WLFPR and the extent to which the relationship depends on the traditional values of the society. Our findings suggest that women are significantly discouraged from labor force participation by the perception of higher crimes-against-women. Moreover, the relationship is particularly strong when society attaches a high stigma cost to crimes-against-women.

Keywords: Crime-against-women, Labor-force-participation, stigma-cost

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1   Introduction

Our research is motivated by two disturbing evidences concerning women in India. On one hand the number of crimes against women is on the rise in India while on

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the other hand women's labor force participation rate (WLFPR) has been declining over the last three decades.

The recent incidence of the Delhi gang rape case created sensation attracting across the board attention to the issue of rape in particular and crimes against women in general. A careful study of the data, however, reveals that the trend of reported rapes was rising in India for quite some time [Iyer et al., 2012](see fig 1).

Fig 1 around here

In fact, India is not alone. There is a growing recognition among international agencies and policy makers about the widespread prevalence of violence against women globally. In it's first systematic review on violence against women, the World Health Organisation reports that globally, 35% of women have experienced some violence either by an intimate-partner or by a non-partner [WHO, 2013].

The other striking picture is that of women's labor force participation rate (WLFPR). The trend in WLFPR reflects a stagnancy for an extended period of time between 1983-84 and 2004 before it started with a decline between 2005 and 2010. Lahoti and Swaminathan find that in the period 2004-05 to 2009-10 WLFPR declined in both rural and urban India. 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 has been much lower than that in the other Asian emerging economies. The low level of WLFPR has a serious implication for GDP for India. The United Nations Economic and Social Commission for Asia and Pacific finds that had India reached the same WLFPR as in the U.S.A.(86%) , India's GDP would have increased by 4.2% a year. Education is often cited as a factor that could account for the decline in WLFPR. Women are now increasingly enrolled in higher education and hence opt out of labor force. In order to validate this hypothesis one should look at age-wise WLFPR and it would be expected that the younger age group (15 to 24 years) will have a lower participation. However education can explain only a part of the decline in WLFPR between 2004-05 to 2009-2010 as the decline is consistent across all age groups [Chowdhury, 2011]. Neff et al. [2012] examined trends in rural WLFPR between 2004-05 to 2009-10 and concluded that though rural participation declined across all age groups, the largest relative impact is seen for 15-24 age group as it constituted 29 percent of total rural labor force.

In this paper, we investigate whether these trends are purely coincidental or whether crime against women have played a role in keeping WLFPR low in In-

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dia. Anecdotal evidence suggests that a higher incidence of rape or other attack on women discourage them to go for work. This belief is also confirmed by [Sudarshan and Bhattacharya, 2009], who, in their survey of non-working women Delhi, find that safety concern is the second most important reason behind their decision not to 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 Fig 2). Despite these general trends, the hypothesis that greater incidence of crime would stop women from participating in the work force is neither theoretically unambiguous nor empirically clear. It could be the case that working women are more active in reporting crime against them and this is what the data shows[Mukherjee et al., 2001].

Fig 2 around here

A substantial amount of research has been devoted to studying women's labor force participation. Women's labor force participation rate (WLFPR) is usually found to be lower than male participation rate and numerous studies have examined the reasons behind this gender gap in labor force participation rate. Notable reasons include the role of women as care-givers, lesser economic opportunities for women and social restrictions. Most relevant for us is the literature that provides explanations for the variation in WLFP across or within a country (Semyono, 1980). One strand emphasizes the role of industrialization as the determining factor for women's labour force participation in an economy. A standard income-leisure model of labor supply is utilised to explain trends in female LFPR. A well known hypothesis in this regard is a U- shaped pattern of female LFPR in the process of development [Goldin, 1994]. At very low stages of development, a subsistence economy is mainly agrarian based (home based) and makes heavy use of female labor force. As the economy develops the manufacturing sector takes over from agricultural sector. However the industry expands at a slower rate than the contraction of agricultural sector thereby resulting in an initial reduction of female LFPR. It is also hypothesized that as an economy develops income rises and hence the incentive for women to work may become weaker. Also with development, more women are enrolled into higher education thereby delaying entry into labor force. As the economy develops even more, service and government sector expand thereby pulling the women back into labor force. Also the economy often develops labor shortages that lead to higher availability of part time jobs. More women are usually absorbed into such part time jobs. The empirical support for this U-shaped hypothesis comes from a number of cross country studies [Goldin, 1994, Mammen and Paxson, 2000]. However panel

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analyses do not always support this U-shaped curve [Cagatay and Ozler, 1995, Tam, 2011, Gaddis and Klasen, 2011].The scale of U-shape also varies between countries and periods of time. A large literature along similar lines also exists in the context of India. Ahasan and Pages [Ahasan and Pages, 2008] analysed the regional differences in female LFPR in 1990s and found female wages to have a strong positive effect on participation. Dasgupta et al [Dasgupta and Goulder, 2005] looked at rural female LFPR using NSS data for the year 1999-2000 and their results show that supply of female labor below poverty line households is negatively affected by wage rate. Neff et al. [2012] also found support for a household income effect. Using data on rural women LFPR between 2004-05 and 2009-10 their results show that probability of females' participation falls with an increase in male wage level. Ahasan and Pages [2008] also found evidence for a negative effect of increase in men's earnings on female LFPR. Using NSS data on urban female LFPR between 1987 and 2004, Klasen and Lamanna [2009] show that for women with less than secondary education the labor force participation decision is not affected by their own earnings potential. They are pushed into labor force due to underemployment of men in household and low level of household income. The effect is opposite for women who are highly educated. Higher expected female wages have positive effect on participation rate of women and participation is not that responsive to changes in household income.

The other view suggests that irrespective of economic development, patterns of social organizations, the organization of the family and the kinship system play a major role in the decision of a womans participation in the labour force[Chamlou et al., 2011, Fernández, 2007].

On the other hand, the economics literature has overlooked the issue of crime against women until recently. Much of the literature on crime against women focus on its health consequences - chronic conditions, negative health behaviors (smoking,alcohol abuse etc.) and effect on mental and reproductive health (Heise, Ellsberg and Gottmoeller 2002, Lancet 2002). This is not to say that the literature on the economics of crime, in general, is small. On the contrary, there exists an extensive literature on economics of crime. Following the seminal paper of Becker [Becker, 1968] many models of criminal behaviour have been developed which try to analyse various determinants of crime. Most common determinants influencing the crime rate include levels of education, unemployment levels, wage rates, labor stratification and local labor market opportunities in general. However, only a handful of papers have looked into the impact of crime on economic outcomes. Tita et al. [2006], Lynch and Rasmussen [2001], Linden and Rockoff [2008] finds a negative effect of crime

and violence on real estate prices. Bowen and Bowen [1999], Schwartz and Gorman [2003], Ceballo et al. [2004] finds that exposure to violence in the neighborhood or in-school bullying has detrimental effects on children's perception of security, school attendance, grades and other student functioning at school in general. In comparison, the literature on crime against women is mainly restricted to domestic violence against women and its economic consequences Lloyd and Taluc (1999) examines the effects of male violence (in intimate relationships on the WLFP 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. Very few look at crime against women outside the household.

In a recent study, Iyer et al. [2012] have analyzed the effect of women's political empowerment on the incidence of crimes against women. More specifically the authors looked at the 1993 constitutional amendment that mandated a reservation of one-third for women at the level of village government, or Panchayats and tried to examine that whether such increase in women's representation 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 local government. Sekhri and Storeygard (2010) examine the effect of local precipitation shocks on appropriation risk faced by women and disadvantaged minorities using district level data from 2001-2007. The analysis shows that whereas dowry deaths and payments increase in response to a dry shock, sexual harassment decreases. They explain this incidence as a result of consumption smoothing mechanism and thus economically motivated. Sexual harassment, which reflects consumption of leisure, reduces during times of low income generation.

To our knowledge, there has not been any systematic attempt to understand the extent to which crime against women affect their economic decisions. The study closest to our question is Garcia-Reid [2007] who examines school engagement among Hispanic girls using a path model connecting a neighborhood environment variable (dangerousness) and social capital variables (teacher, parent and friend support). A survey was conducted in a school having an effective Hispanic population using the School Success Package (SSP) of measurement instruments which included measures for social support, neighborhood dangerousness and school engagement. The path

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model accounted for 25 per cent variation in school engagement. Thus, neighborhood youth behaviour was found to have a direct effect on Hispanic girl school engagement.

The social cost of crime against women can be understood in two ways – understanding the trauma experienced by the victims and analyzing its indirect effect on economic and social decision making in general. In this paper, we take the second route and see how the perception of unsafe environment, reinforced by the high number of reported crime against women, affects women's decision to participate in labor force (WLFPR) which is a key component of women empowerment. We work on the premise that the decision to join the labor force is a rational choice for an individual even though while making the decision the incentive structure a man faces can be quite different from that a woman faces. A woman chooses to join the labor force if her net pay-off from doing so is greater than that from not joining. The net pay-off is the return from the labor market minus the costs associated with joining the labor force. The cost side include direct costs such as transport costs as well as opportunity cost such as the cost of getting the household chores done. In a traditional set up, the latter is mostly the responsibility of a woman. Now the possibility of being abused while traveling to workplace adds to the cost side of labor force participation. Increasing incidences of reported crime against women increases the perceived probability of being attacked while going to workplace. Note that the expected cost of being abused by miscreants is the probability of being attacked times the trauma cost of such attack. Hence, any factor that affects either of these two components will have an effect on the marginal effect of crime on WLFPR.

Our work is based on the prior that many components of this pay-off function, such as opportunity cost of staying at home (or that of joining the workforce), cash requirement of a family, attitude towards women etc. vary widely with the occupational and demographic structure of a society. For example, the trauma from rape is a function of the stigma a society attaches to a rape victim which varies with the characteristics of a society. Such stigma should be high in the conservative societies which value the *purity* of women strongly. Hence, in such societies rape should be a stronger deterrent of women's labor force participation than that in a less conservative society.

Empirically, we test these theoretical possibilities using data from the India Human Development Survey (IHDS), 2005. Using village 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 house-

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hold, is higher. The rich nature of the IHDS data allows us to control for a range of covariates at the individual and village level. In addition, we allow for district fixed effects to address for the possibility that regions reporting a higher perception of crime against women are likely to be inherently different from regions reporting a lower perception of crime against women.

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 village. If one household has better information about the actual occurrence of crime then she is 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 utility from working can be captured by the monetary payoff from working - wage rate. On the other hand, 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,

$$Pr(Work) = Pr(w \geq c) \tag{2}$$

where w is the wage and c is the cost of going to the work. The cost of going to work can further be written as

$$c = c(p, \gamma) \tag{3}$$

where p is the monetary cost of traveling to work and γ is the victimization cost of going to work and $c'(p), c'(\gamma) > 0$. Note that both p and γ, and hence the cost, are likely to increase with the distance traveled to work. It is natural that crime against leads to an increase in the cost of participation in the labor force. In this way, crime is likely to deter participation both for men and women. However, the expected cost of participation in the labor force for an individual depends both on the probability of being subject to the crime as well as the cost to the individual if she is the victim. In other words, the component γ has two more subcomponents: probability of being attacked (q) and the trauma of getting attacked (τ).

$$\gamma = q \times \tau \tag{4}$$

A part of τ can be measured in monetary terms, say the hospitalization cost of the victim. But a more important part is 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 impact on the cost of going to work for different societies. This means that the attack against women will have differential impact on WLFPR in societies with different cultural norms.

3   Empirical Framework

We study the relationship between the prevalence of crime against women in a neighborhood and their decision to participate in the labor force. We go by the premise that a woman's decision to join the labor force is a rational choice, where she compares the costs and benefits of doing so. A woman would choose to enter the labor force only if the net benefit of doing so is greater than the net benefit of not entering it. The presence of crime in a neighborhood or in the work place would contribute negatively to this equation by increasing the cost of participation. In other words, we want to test whether crime perception by a household deters the women in that household to work outside the household. However, at the household level, there

is a high possibility of reverse causality. 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. To address this concern we measure crime perception in the neighborhood and the decision of a woman to work, living in that neighborhood.

This decision process is also dependent on a lot of factors pertaining to the individual in question and the household she is a part of, which affect the benefits and opportunity costs of making a particular decision.

The benefits of working would include wages earned, while the costs would be having to take care of household responsibilities in a limited amount of time, foregoing spending time with children etc. However, the decision to work or not is a latent variable that is not observed. The variable that is actually observed is the employment status of an individual, that is dependent on the woman's choice to work or not and her employability if she chooses to work. Apart from factors that are involved in the cost-benefit equation, a woman's employment status is also dependent on factors that would decide her employability, like her level of education and the local labor market conditions. Combining all these factors, we can think of the employment status of a woman to be related to the factors discussed above in the following way,

$$\text{ES}_{ihvd} = \beta_0 + \beta_1 \text{Crime}_{vd} + \beta_3 X_i + \beta_4 X_h + \beta_4 X_v + D_d + \epsilon_{ihvd} \tag{5}$$

Where ES_{ihr} is the employment status of a woman i from household h and village v in district d, and X corresponds to all the individual, household and village level characteristics. The parameter of interest is β_1 which would give us the relationship between crime against women in a region r and probability of woman i residing that region to participate in the labor force.

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. To address such concerns we allow for district fixed effects that compares villages within a district. In addition, we control for a rich set of covariates at the village level.

Since the outcome variable is measured at the individual level and the crime indicator varies at a more aggregate village level, we cluster all the standard errors at the village level.

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4 Data

We use individual and household level data from the first round of the India Human Development Survey (IHDS), 2004-2005. IDHS is a nationally representative survey of 41,554 households in 1503 villages and 971 urban neighborhoods across India. The data contains information of a rich set of individual, household and village 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 a family business) or outside of home as an agricultural wage laborer, non-agricultural wage laborer or in a salaried position. The variable to be used in our estimation is a binary variable (ES) taking value 1 for working outside of home. The reference category is those who work neither at home nor outside.

The main independent variable of interest is the perception of crime in the neighborhood. The data provides information about how each household perceive 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 again a categorical variable that takes the values 0 for never, 1 for sometimes and 2 for often. We have aggregated these responses into a continuous variable by aggregating them to the village level. Thus our village level measure of perception of crime against women is the proportion of households in the village who perceive that girls are harassed (responses 1 and 2) in their neighborhoods.

In addition, we control for a rich set of covariates at the village level - migration into village, distance to closest police station, Mahila mandal in village, public programs to promote employment schemes, women welfare etc -, household level - religion, caste, income level of the household, household size, number of children and working adults, exposure to mass media -, and individual level - age of the women, education level, marital status.

Table 1 provides the summary of the variables that are used in the analysis.

5   Results

Our baseline model considers the sample of women living in urban regions and going for non-agricultural jobs. The main premise in the paper is that crime is a deterrent to the decision of women to work outside their home. Hence we only consider non-agricultural jobs as people have to travel to work for these jobs. For the agricultural jobs, most of the time, work is done at home or very near home. We are restricting our sample to urban region for similar reasons. In the rural sector, the proportion of women going for non - agricultural jobs is very low. Moreover, anecdotal evidences show that women in urban sector have higher exposure and hence are more vulnerable to crimes against women than their counterparts living in rural sector.

To start with, results in column 1 in table 1 show that the perception of crime in the neighbourhood is negatively related with the employment status of women and the relationship is significant. However, there can be a lot of variation between the regions. Women are much less likely to go for work outside their home in more conservative regions characterised by stronger traditional values. On the other hand, there may be a higher rate of crime against women in these regions. Hence it is essential to control for regional effects. Given the cross section nature of our data we control for district fixed effects. In such a model, we identify the effect by comparing villages within a particular district. Column 2 reports the results after controlling for district fixed effects. In addition we also control for some demographic variables at the individual level namely age, years of education, marital status as all these factors can affect the decision of women to work. Results in column 2 show that even after controlling for these additional variables, there is still a negative relationship between perceived crime rate and the employment status of women though the coefficient has increased in magnitude.

Next we add a host of household variables such as household size, number of persons in the household involved in any kind of work, number of children in the household, highest level of education in a household. Results for the full specification model are reported in column 3 in table 1. [1]

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[1]In addition, the full specification model also contains some individual level variables such as caste, religion and some variables reflecting media exposure of the women namely the frequency of listening to radio, watching television and reading newspaper as well as some other household variables indicating the ownership of ration card, health insurance and life insurance for anybody in the household.

The significant negative relationship between crime rate and employment status of women is robust to the inclusion of all the control variables. 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 woman's decision to work as women may have to be engaged in domestic work more intensely after marriage. The negative coefficient on household income shows that as income increases in the household, there is a lesser need for women to work outside. 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 negative and significant effect. However it is to be noted that this variable captures the number of children in household aged $0 - 14$ years. Hence for many households the variable may capture the number of children aged above five years. These older kids do not have to be given much care and hence women in the household may not be constrained to work outside of their home. The highest level of adult education in the household is negatively related to the employment status. This may just reflect that higher the highest level of education, better would be the job type of that member, thereby, fetching a higher income and hence lesser the need for the women of that household to work outside of home.

The main takeaway from this full specification model is that even after controlling for the host of all these control variables, we get a significant negative relationship between the perceived crime rate in the neighbourhood and decision of women to go for work outside their home. Hence this provides support to our basic premise that the perception of crime may have a deterrent impact on women's decision to work.

Next we did a number of heterogeneity analyses. First we ran the regressions separately for different wage quintiles. Our theoretical framework suggests that a woman takes the decision to work or not after comparing the costs and benefits of working. At higher wage quintiles, the opportunity cost of not working is very high and hence one expects to see a lesser deterrent effect of crime on work force decision for those quintiles. Results in table 2 show a significant and negative coefficient on perceived crime rate for all the wage quintiles. However as expected, the magnitude of the coefficient decreases as one moves away from lower wage quintiles to higher

ones.

Next we did a similar heterogeneity analysis by considering different age groups. Younger women are more likely to be vulnerable to crime and the stigma cost from crime is also higher for younger women. Hence crime will be a more serious deterrent of women's decision to work for this group. Results in table 3 exactly convey the same idea. 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 aged women. It has to be noted that we also did not find any significant effect for the youngest group. However one reason for this may be that a very low proportion of this group are employed in non-agricultural jobs and hence it is difficult to find any effect from such low number of observations.

Finally table 4 shows the heterogeneity analysis with respect to stigma cost. Here we have divided our sample into two subsamples - one group where the $p$urdah 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. For women falling into the Purdah sample, the stigma cost will be very high as they are coming from a very conservative society. Hence it is expected that there will be a stronger deterrent effect of crime on women's labor force participation decision for this group. Our results are in accordance with this expectation. Though crime is a significant deterrent towomen's work decision for both these groups, the magnitude is much higher for the$P$urdah sample.

6   Conclusion

In recent times, the Indian media has seen a surge in reports on violence against women. Increasing media coverage of crime is likely to increase the perceived threat of crime against women. How does threat perception affect the decision to participate in the labor force? We argue that an increase in perceived crime against women, increases the cost of traveling to work, particularly in a society marked by a traditional stigma for women who have been victims of sexual crimes. 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 and the deterrent effect is likely to be stronger in traditional societies which attaches higher values to chastity of women.

We test this hypothesis using information on perceived crime against women from the IHDS data. Our reduced form estimates suggest that women are less likely to work away from home in villages where the perceived threat of sexual harassment against girls is higher. Moreover, the negative relationship is stronger for households that practice the *Purdah* system.

One of the policies often followed to make travel easier for women is to dedicate part 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, it might not have a significant impact on women's decision if the stigma cost of victimization is too high.

If improving women's economic participation (either getting educated or participating in the labor force or simply greater freedom to move around at own will) is the aim of a policy then it is important to understand which constraints, if relaxed, has the maximum effect. It could very well be the case that an awareness program to remove the stigma of sexual harassment is a greater facilitator of women's liberty. In future research our aim is to estimate the relative marginal effects of reducing stigma cost versus reducing the probability of being victimized on women's decision to join the labor force.
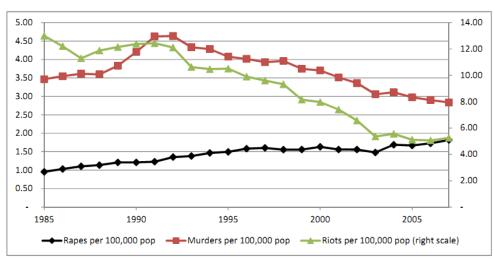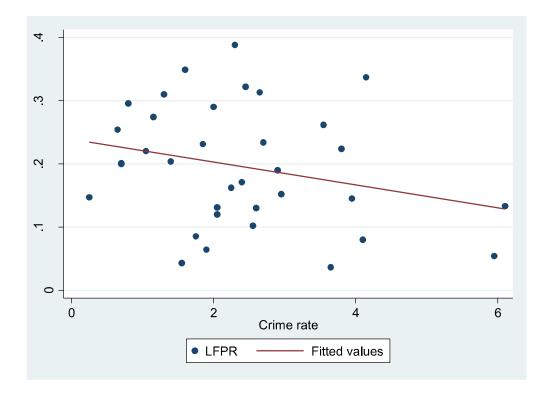
Figure 1: *Trends in different types of crime*

Nationwide Trends in Selected Crime Categories

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

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

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Table 1: *Summary*

Dependent variable: Probability of labor force participation				
	Baseline	Reference-Group	Non-Agri-Employment	Salaried-Employment
CAW	0.14	0.15	0.13	0.13
	(0.21)	(0.21)	(0.21)	(0.21)
Age	27.77	27.64	31.31	32.34
	(8.84)	(8.84)	(8.09)	(7.93)
Age group 15-24 years	42.47%	43.23%	21.02%	18.86%
	(0.49)	(0.50)	(0.41)	(0.39)
Age group 25-34 years	0.30	29.81%	39.10%	37.57%
	(0.46)	(0.46)	(0.49)	(0.48)
Age group 35-45 years	0.27	26.97%	39.88%	43.57%
	(0.45)	(0.44)	(0.49)	(0.50)
Married	0.65	64.80%	68.96%	60.74%
	(0.48)	(0.48)	(0.46)	(0.49)
Education	7.92	8.07	3.65%	8.86%
	(4.81)	(4.76)	(4.11)	(5.76)
Education: 0 years	0.18	16.98%	49.12%	21.09%
	(0.38)	(0.38)	(0.50)	(0.41)
Education: Some Primary (1-4 years)	0.04	4.31%	7.86%	4.85%
	(0.21)	(0.20)	(0.27)	(0.21)
Education: Primary (5-9 years)	33.22%	33.26%	32.22%	18.09%
	(0.47)	(0.47)	(0.47)	(0.39)
Education: Secondary (10-14 years)	31.81%	32.60%	9.23%	24.40%
	(0.47)	(0.47)	(0.29)	(0.43)
Education: Graduate ($\geq$15 years)	12.01%	12.39%	1.38%	31.33%
	(0.33)	(0.33)	(0.12)	(0.46)
Log_Income	10.89	10.91	10.45	11.23
	(1.32)	(1.33)	(0.65)	(0.95)
HH_Size	5.74	5.76	5.41	4.9
	(2.61)	(2.62)	(2.46)	(2.05)
N_Child	1.53	1.52	1.82	1.23
	(1.49)	(1.49)	(1.53)	(1.23)
N_Work	1.54	1.50	2.66	2.27
	(1.00)	(0.97)	(1.27)	(1.02)
Highest Education	10.20	10.35	6.03	10.42
	(4.41)	(4.33)	(4.55)	(5.05)
Purdah System	53.28%	53.20%	55.56%	66.73%
	(0.50)	(0.50)	(0.50)	(0.47)
No Purdah System	46.72%	46.80%	44.44%	33.27%
	(0.50)	(0.50)	(0.50)	(0.47)
Caste_Brahmin	8.73%	8.95%	2.36%	8.62%

Dependent variable: Probability of labor force participation

	Baseline	Reference-Group	Non-Agri-Employment	Salaried-Employment
	(0.28)	(0.29)	(0.15)	(0.28)
Caste_OBC	36.96%	36.53%	49.12%	35.18%
	(0.48)	(0.48)	(0.50)	(0.48)
Caste_SC	15.82%	15.43%	27.11%	16.47%
	(0.37)	(0.36)	(0.45)	(0.37)
Caste_ST	3.12%	3.12%	3.34%	6.00%
	(0.17)	(0.17)	(0.18)	(0.24)
Religion_Hindu	75.81%	75.74%	77.60%	77.75%
	(0.43)	(0.43)	(0.42)	(0.42)
Religion_Muslim	17.25%	17.18%	19.06%	10.85%
	(0.38)	(0.38)	(0.39)	(0.31)
Religion_Christian	3.09%	3.13%	1.96%	7.62%
	(0.17)	(0.17)	(0.14)	(0.27)
Religion_Sikh	1.86%	1.91%	0.59%	1.69%
	(0.14)	(0.14)	(0.08)	(0.13)
Religion_Buddhist	0.56%	0.56%	0.59%	0.69%
	(0.07)	(0.07)	(0.08)	(0.08)
Religion_Jain	0.95%	0.98%	0.00%	0.54%
	(0.10)	(0.01)	0	(0.07)
Religion_Tribal	0.39%	0.40%	0.20%	0.77%
	(0.06)	(0.06)	(0.04)	(0.09)
Religion_Other	0.07%	0.08%	0.00%	0.08%
	(0.03)	(0.03)	0	(0.03)
Religion_None	0.02%	0.02%	0.00%	0.00%
	(0.01)	(0.01)	0	0
Observations	14983	14474	509	1299

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 reference category. Baseline Sample: Only those who are employed outside of home plus the reference category. Sample of Interest: Urban Sample consisting of females employed in Non-Agricultural Wage labour plus the reference category Reference Category: Those not involved in any from of employment

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

Dependent variable: Probability of labor force participation			
	1	2	3
CAW	-0.0379***	-0.0452***	-0.0405***
	(0.0125)	(0.0124)	(0.0111)
Age		0.0149***	0.0155***
		(0.00194)	(0.00188)
Age-sq		-0.000212***	-0.000200***
		(3.00e-05)	(2.89e-05)
Education		-0.00613***	-0.00168***
		(0.000523)	(0.000471)
Married		-0.0487***	-0.0667***
		(0.00602)	(0.00606)
Log_Income			-0.00784***
			(0.00118)
HH_Size			-0.0209***
			(0.00164)
N_Child			0.0168***
			(0.00193)
N_Work			0.0649***
			(0.00466)
Highest_Education			-0.00308***
			(0.000666)
District FE			Yes
Constant	0.0393***	-0.112***	-0.00492
	(0.00277)	(0.0236)	(0.0382)
Observations	15,043	15,043	14,983
R-squared	0.098	0.131	0.214

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 following variables: ownership of Ration Card, Health Insurance for anyone in the household, Life Insurance for anyone in the household, Kisan Credit card, Caste, Religion and media exposure(Frequency of listening radio, reading newspaper and watching TV)
*** significant at 1%; ** significant at 5%; * significant at 10%.

Table 3: *Crime against women and Women's LFPR: Opportunity Cost*

Dependent variable: Probability of labor force participation

	1	2	3	4
	Wage Q1	Wage Q2	Wage Q3	Wage Q4
CAW	-0.0122**	-0.0206***	-0.00830**	-0.0101**
	(0.00523)	(0.00725)	(0.00337)	(0.00459)
Age	0.00371***	0.00595***	0.00501***	0.00433***
	(0.000859)	(0.00125)	(0.00107)	(0.00103)
Age-sq	-4.71e-05***	-7.60e-05***	-6.83e-05***	-5.55e-05***
	(1.35e-05)	(1.85e-05)	(1.64e-05)	(1.66e-05)
Education	-0.000517**	-0.000290	-0.000572**	-0.000693***
	(0.000222)	(0.000288)	(0.000232)	(0.000267)
Married	-0.0161***	-0.0269***	-0.0186***	-0.0205***
	(0.00311)	(0.00462)	(0.00357)	(0.00365)
Log_Income	-0.00359***	-0.00351***	-0.00171***	-0.000464
	(0.000669)	(0.000656)	(0.000412)	(0.000503)
HH_Size	-0.00733***	-0.00671***	-0.00506***	-0.00592***
	(0.000959)	(0.000925)	(0.000748)	(0.000872)
N_Child	0.00698***	0.00486***	0.00408***	0.00431***
	(0.00117)	(0.00115)	(0.000838)	(0.00109)
N_Work	0.0213***	0.0247***	0.0149***	0.0178***
	(0.00278)	(0.00331)	(0.00208)	(0.00308)
Highest_Education	-0.000447	-0.00176***	-0.000849**	-0.000725**
	(0.000361)	(0.000395)	(0.000334)	(0.000337)
Constant	0.0285	-0.0136	-0.0127	-0.0126
	(0.0221)	(0.0210)	(0.0185)	(0.0205)
Observations	14,602	14,623	14,586	14,594
R-squared	0.100	0.120	0.093	0.071

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: ownership of Ration Card, Health Insurance for anyone in the household, Life Insurance for anyone in the household, Kisan Credit card, Caste, Religion and media exposure(Frequency of listening radio, reading newspaper and watching TV)
*** significant at 1%; ** significant at 5%; * significant at 10%.

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

Dependent variable: Probability of labor force participation					
	1	2	3	4	5
	15-20	21-30	31-40	41-50	51-60
CAW	0.00533	-0.0503***	-0.0740***	-0.0152	0.0215
	(0.0128)	(0.0159)	(0.0213)	(0.0174)	(0.0219)
Age	0.0262	0.00363	0.00943	0.0349	0.0165
	(0.0266)	(0.0143)	(0.0296)	(0.0397)	(0.0548)
Age-sq	-0.000616	3.47e-05	-7.58e-05	-0.000405	-0.000162
	(0.000770)	(0.000281)	(0.000414)	(0.000435)	(0.000490)
Education	-0.00139	-0.000108	0.000887	-5.11e-05	0.000385
	(0.000904)	(0.000769)	(0.000917)	(0.000959)	(0.000778)
Married	-0.0182*	-0.0622***	-0.127***	-0.0305**	-0.00631
	(0.00945)	(0.00824)	(0.0189)	(0.0154)	(0.0110)
Log_Income	-0.00404***	-0.00621***	-0.0141***	-0.00868***	-0.00570**
	(0.00112)	(0.00217)	(0.00253)	(0.00206)	(0.00271)
HH_Size	-0.0107***	-0.0235***	-0.0348***	-0.0198***	-0.0158***
	(0.00202)	(0.00245)	(0.00316)	(0.00318)	(0.00335)
N_Child	0.00890***	0.0220***	0.0249***	0.0147***	0.0106**
	(0.00286)	(0.00322)	(0.00385)	(0.00492)	(0.00514)
N_Work	0.0372***	0.0643***	0.129***	0.0669***	0.0420***
	(0.00610)	(0.00615)	(0.00971)	(0.00766)	(0.00707)
Highest_Education	-0.000721	-0.00484***	-0.00541***	-0.00506***	-0.00389**
	(0.000773)	(0.00129)	(0.00136)	(0.00146)	(0.00169)
Constant	-0.224	0.209	0.171	-0.478	0.0106
	(0.230)	(0.190)	(0.529)	(0.913)	(1.530)
Observations	4,080	5,519	3,863	2,802	1,942
R-squared	0.188	0.240	0.371	0.266	0.305

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: ownership of Ration Card, Health Insurance for anyone in the household, Life Insurance for anyone in the household, Kisan Credit card, Caste, Religion and media exposure(Frequency of listening radio, reading newspaper and watching TV)
*** significant at 1%; ** significant at 5%; * significant at 10%.

Table 5: *Crime against women and Women's LFPR: Stigma Cost*

Dependent variable: Probability of labor force participation		
	1	2
	Purdah	No Purdah
CAW	-0.0624***	-0.0337**
	(0.0199)	(0.0149)
Age	0.0128***	0.0199***
	(0.00260)	(0.00318)
Age-sq	-0.000163***	-0.000265***
	(4.04e-05)	(4.87e-05)
Education	-0.000135	-0.00299***
	(0.000653)	(0.000754)
Married	-0.0518***	-0.0880***
	(0.00883)	(0.01000)
Log_Income	-0.00859***	-0.00869***
	(0.00199)	(0.00177)
HH_Size	-0.0192***	-0.0237***
	(0.00231)	(0.00248)
N_Child	0.0164***	0.0193***
	(0.00277)	(0.00301)
N_Work	0.0584***	0.0808***
	(0.00604)	(0.00750)
Highest_Education	-0.00431***	-0.00202**
	(0.00104)	(0.000967)
Constant	0.0126	-0.0164
	(0.0503)	(0.0860)
Observations	6,245	7,123
R-squared	0.227	0.277

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: ownership of Ration Card, Health Insurance for anyone in the household, Life Insurance for anyone in the household, Kisan Credit card, Caste, Religion and media exposure(Frequency of listening radio, reading newspaper and watching TV)
*** significant at 1%; ** significant at 5%; * significant at 10%.

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