

Work, Property, and Domestic Violence: A Kerala Case Study

Anjana G. Radhakrishnan

Sakhi Resource Centre for Women

Author Note

Anjana G. Radhakrishnan, Sakhi Resource Centre for Women,

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Abstract

While policymakers agree that achieving greater gender equality is a crucial component of successful development efforts, effective methods of increasing female empowerment are still heavily debated. While some experts argue for expanded property rights among women, others contend greater economic opportunities have more meaningful effects on measures of female empowerment. To contribute to this conversation, this study evaluates relative effects of female property ownership and employment on incidence of domestic violence as an indicator of female empowerment in Kerala - an Indian state often characterized as a 'gender-friendly state'. A field study was first conducted to determine relationships between female employment, property status, and domestic violence. Empirical specifications for statistical models were then selected on the basis of these findings, resulting in the exclusion of property status as a variable. Regression analysis was conducted on National Family Health Survey (NFHS) data to empirically evaluate the effect of female employment on likelihood of experiencing domestic violence. Models without instrumented variables resulted in ambiguous findings, suggesting endogeneity between key variables. Several instruments were tested, resulting in the use of caste as an instrumental variable in probit and bivariate probit models. When instrumented, female employment was found to unambiguously decrease the likelihood of experiencing domestic violence, controlling for other socioeconomic factors. These findings indicate that increasing employment opportunities for women remains an effective way to increase female empowerment, particularly within the Kerala context.

Keywords: female empowerment, employment, property, domestic violence, Kerala

Ranking fifth on the United Nation's Sustainable Development Goals, gender equality continues to be prioritized by global development efforts. However, more widely cited indices that measure progress towards gender equality, like the Gender-related Development Index (GDI) and Gender Empowerment Measure (GEM), continue to exclude indicators that measure violence against women and may thus fail to capture more nuanced elements of female empowerment. For example, domestic violence indicators can be used to achieve broader understandings of female bargaining power. In fact, such indicators have been previously used to measure female empowerment in similar studies (Hashemi et al., 1996; Jejeebhoy, 2000; Kabeer, 1997; Schuler et al., 1996).

In economic development, there are two major approaches to increasing levels of female empowerment. One approach emphasizes the importance of female employment in increasing perceptions of female empowerment (Farmer & Tiefenthaler, 1997; Hashemi et al., 1996; Schuler et al., 1996; Srinivasan & Bedi 2007; Tauchen et al. 1991), while the other favors increased property ownership rights as an avenue for increasing bargaining power (Agarwal, 1997; Dobash & Dobash, 1992; Panda & Agarwal, 2005). However, little literature assesses the relationships between employment, property status, and female empowerment or potential issues of endogeneity between variables. This study seeks to address this gap by delineating the relationships between female employment, property status, and empowerment¹ within the context of the Indian state of Kerala.

Kerala's consistently high performance on economic, human, and gender development indices has led the state to be dubbed the 'Kerala Model' within development communities (Drèze & Sen, 1989; Parayil, 1996; Véron, 2001). Kerala's history of matrilineal family structures and high-quality educational institutions are often used to explain its rapid progress to a more gender equitable society. However, when other indicators are examined, a more nuanced understanding of Kerala's progress towards gender equality can be reached. In fact, several scholars have noted that Kerala continues to battle with social and cultural norms which reinforce inequitable power structures, especially given the state's surprisingly low

¹ The definition for empowerment used in this study comes from Kabeer (2001) who defines empowerment as "The expansion in people's ability to make strategic life decisions in a context where this ability was previously denied to them".

levels of female labor force participation and high levels of gender-based violence, (Eapen & Kodoth, 2005; Mitra & Singh, 2007). Given these concerning statistics as well as higher levels of female property ownership due to matrilineal family structures, Kerala provides a rich context for an investigation of the relative effects of female employment and property ownership on female empowerment.

To inform the empirical specifications of this study, a case study was first conducted in 6 Keralan districts from August 2015 through February 2016. This broadly representative sample was used to assess relationships Keralan women perceived between their employment and property status with incidence of domestic violence and overall sense of empowerment. The following section details the case study framework and sample demographics. Section III presents case study results. Section IV draws on these findings to select variables and empirical specifications, before testing various models. Section V analyzes empirical findings, explores study implications, and suggests avenues for further research.

Section I: Case Study Framework

To capture responses from women in both rural and urban contexts, this case study was conducted in two rounds. Respondents were surveyed through a variety of methods including field observations, focus group discussions, in-depth interviews, and online questionnaires. The study was conducted in the six Keralan districts of Malappuram², Thrissur, Palakkad, Pathanamthitta, Alappuzha, and Thiruvananthapuram, resulting in a sample size of 110 respondents. The survey collected demographic information on respondents as well as respondents' opinions related to female employment, female property status, domestic violence, and the status of women within their contexts. In this way, the variables included in empirical specifications and models could be directly drawn from the population.

Table 1 presents respondents' demographics and variables of interest to this study.

[Table 1]

Respondents ranged from ages 20 to 73, although the majority fell between ages of 25 to 50. Only a small fraction of women interviewed had never been married with approximately 95 percent of

² The survey was first piloted in Malappuram district. Several issues with the survey questions were noted and changes were subsequently made. As a result, these respondents were not included in the final analysis.

respondents being ever-married³. During the first round of data collection, very few respondents were employed full-time or part-time. As employment status and its relation to empowerment was a key question in the study, a second round of data collection was conducted among employed women of different socioeconomic strata, including women at working women's hostels and women currently employed at IT Technopark, Trivandrum. The employment rate presented in Table 1 thus may not accurately reflect actual levels of female labor force participation in Kerala.

Section II: Case Study Analysis of Key Variables

Employment Status

Female employment is defined as any work that garnered wages and was further categorized as full-time or part-time/informal. Approximately 70 percent of respondents reported they were currently employed. Respondents in rural areas were typically employed as anganwadi workers, asha workers, or involved in MNREGs⁴ or Kudumbashree⁵ micro-enterprises. Respondents in urban areas were typically employed as office clerks, nurses, bank tellers, administrators and IT professionals.

Among urban respondents, approximately 72 percent of employed women reported that they maintained control over their own income while the remainder reported that they had to hand over their income to their husbands or to their natal household head. The majority of ever-married respondents stated that they were significantly involved in large household purchase decisions (refrigerator, dishwasher, etc.). One respondent stated that she alone made all household purchasing decisions. Overall, urban respondents reported significant bargaining power within the household in managing household finances.

In contrast, among rural respondents, approximately 76 percent of employed women reported that despite earning their own income, they had to transfer control over their earnings to their husbands. Many

³ Women who have ever been married, regardless if widowed or divorced at the time of data collection, are referred to as 'ever-married' in this study.

⁴ Mahatma Gandhi National Rural Employment Guarantee Act is a government scheme that aims to guarantee 'right to work' by providing at least 100 days of wage employment to every household whose adult members volunteer to do unskilled manual work.

⁵ Kudumbashree is community-based, women-oriented initiative which helps organize micro-enterprises and other economic initiatives to fight absolute poverty and empower women at the local level.

of these respondents felt unhappy in handing over their income as they perceived it as loss of financial control. Despite lacking direct control over their own income, however, most respondents stated that their husbands did not deny them money for regular, daily expenditures. In contrast, when making large household purchases, rural respondents reported having minimal involvement in making such decisions. Overall, rural respondents did not report significant bargaining power in making household purchases, regardless of employment status.

In total, the majority of respondents reported that their employment status did not cause friction within their marriages. Respondents generally stated that their husbands were supportive of their employment as the additional income was useful for the household. Approximately 9 percent of respondents even reported that their husbands “helped” or assisted with domestic responsibilities in order to support their wives’ activities⁶. In contrast, several women interviewed at IT Technopark reported that they or their colleagues felt pressure to leave the workforce because of domestic responsibilities or stress from conflicts with husbands and other family members. This may reflect the greater strain and pressure on household members exerted by the high demands of IT industry employment.

Respondents in both contexts overwhelmingly linked their employment status directly to an increased sense of empowerment. Respondents who worked full-time or part-time reported feeling increased confidence in their capabilities to earn and make independent decisions as well as greater connectivity to their communities. Many women emphasized the importance of personal growth. For these respondents, it was the realization that they were *capable* of earning income, building professional relationships, and travelling on their own that provided them with an increased sense of empowerment. There is a strong linkage to be made here with Amartya Sen’s capabilities approach (Agarwal & Panda, 2007; Sen, 1993) as it is clear that respondents viewed employment as directly related to an increase in their capabilities. Even women who did not keep direct control over their income felt that outside

⁶ When female respondents say their husbands “help” with domestic responsibilities, this is a wide range from those who simply grate a coconut to those who split chores equally.

exposure and increased knowledge that they gained as a result of employment enhanced their leverage in household decision-making.

There is some concern, however, that such increases in bargaining power can lead to unintended negative consequences, as friction within the household increases through consistent challenges of the socially prescribed dominance of men (Aizer, 2010; Bloch & Rao, 2002; Chin, 2011; Luke & Munshi, 2011). However, in the four cases of employed women reporting current occurrence of domestic violence documented in this study, respondents reported taking employment *in response* to the violence. These cases highlight potential issues of endogeneity between female employment and incidence of domestic violence. In response to violence at home, women may be seeking work outside the house in order to reduce incidence of violence. Positive correlations between spousal violence and employment status may thus reflect the effect of spousal violence on the decision to work, rather than employment status causing increases in incidence of spousal violence. Termed the exposure reduction effect, this argument suggests that when time spent outside of the home increases, a woman is less exposed to the potential abuser which leads to a decrease in violence, leading women to seek avenues to engage in more activities outside the home (Aizer, 2010; Dugan et al., 1999, 2003). Based on such existing literature and findings from this case study, the empirical specifications of this study will attempt to delineate these relationships within the Kerala context by accounting for endogeneity.

Property Status

Female property ownership is defined as titling under the female's name either solely or jointly with another individual. Approximately 34 percent of respondents owned property in some form, with 17 percent of respondents reporting property titled solely in their names. The majority of respondents gained property ownership either through inheritance or dowry. Only 3 percent of respondents had purchased property using either household or own funds.

Urban respondents had property titled to their names about twice as often as rural respondents. Respondents reported finding it difficult to acquire property unless it was received through inheritance or dowry, citing high property values, minimal assets, and minimal bargaining power in this type of

purchasing decision within their households. Many respondents reported the main reason they did not currently own property was due to extant parents. A significant portion of respondents appeared confident that they would receive an equal portion of their natal family's inheritance.

Several respondents who owned property reported that owning property provided them with an overall sense of financial security. Those who owned property jointly with their husbands or children reported that they felt more secure and confident than if the property was solely in their husbands' or children's names. Female property ownership, thus, clearly confers a sense of security. For example, one respondent who reported currently experiencing domestic violence stated that even when she was treated very badly, she always felt 'at peace' because she owned property solely titled to her. Another respondent who did not own property stated that the lack of property gave her less security and self-confidence.

Similar to employment status, however, it appears that the *capability* of owning property is what imparts a sense of empowerment. For example, one respondent who had purchased the house where her family currently resides found the property purchase and managing associated loans to be empowering. The majority of respondents who owned property, however, did not find owning property to provide greater confidence or security within the marriage. Respondents who jointly owned property expressed that they did not feel true ownership of the property, being legally bound to their husbands. Respondents who owned property solely in their names also reported that managing properties was difficult and that due to fluctuating rents and maintenance costs, their properties failed to provide them with stable incomes. In comparison to their employment status, respondents who owned property generally reported that they did not link property ownership directly to an increased sense of empowerment. This may be a result of the non-fluidity nature of property. While property offers some measure of long-term financial stability, it cannot be easily liquidated to financially support a woman who wishes to exit a marriage.

As discussed in greater detail in the following sub-section, divorce as a threat point was found to be highly unlikely among this population, making it highly unlikely that a woman will exit her marriage regardless of property status. In fact, three cases were documented in this study where a respondent owned property, reported currently experiencing domestic violence, and indicated no intent to exit the

marriage. Female property status in the Kerala context thus does not appear to provide a significant deterrence against domestic violence.

Domestic Violence

Patterns of domestic violence differed slightly between rural and urban contexts. Most rural respondents reported alcoholism causing physical violence against women in their communities. Other respondents reported domestic violence cases caused by extramarital affairs, second marriages on the husband's side, paranoia, mobile misuse, and other household disputes. The types of abuses ranged from physical (hitting, beating) and psychological (neglect, verbal abuse, suspicion) to economic (withholding of money and access to resources). When discussing effective methods of preventing domestic violence in their communities, several respondents stated that court cases filed with the help of anganwadi workers had been effective in reducing incidence of domestic violence in their communities. Many respondents thought that targeting alcoholism would most effectively decrease rates of domestic violence. Respondents also thought that legal consequences for public sexual harassment were not immediate or severe enough to be a useful deterrent.

Most urban respondents reported cases of domestic violence caused by alcoholism, paranoia, and other household disputes. The types of abuses reported were often physical (hitting, beating) and psychological (neglect, verbal abuse, suspicion). Among the IT professionals in the sample, respondents most commonly reported experiences of emotional and verbal abuse inflicted by spouses and other family members pressuring respondents to quit their jobs. Several respondents also stated they either experienced physical abuse (hitting, slapping) themselves or were aware of other coworkers experiencing it. Urban respondents perceived the prevalence of domestic violence in their communities as a result of the 'male-biased Keralan mindset', characterized by possessiveness, inferiority complexes, and mismatched expectations between spouses and in-laws. When discussing effective methods of preventing domestic violence in their communities, most respondents pointed to a lack of gender equitable education and emphasized the need to shift social and cultural mindsets from a male-biased perspective. Relatedly, many women expressed a desire for their husbands and in-laws to be more accommodating of their

professional ambitions. Overall, respondents were doubtful that this type of change would occur in Kerala in the near future.

The Marriage Bargaining Model

The typical bargaining model for marriage which uses divorce as a threat point was found to be inapplicable for Keralan households. During the case study, women were asked hypothetical questions: If you had to leave your marriage, would your employment status or property status make it more likely that you would actually leave? In either case – whether the woman was employed full-time or owned property to which she could exit the marriage at any time – respondents reported that leaving the marriage would never be a viable option. In fact, the initial response when probed on this topic was laughter, indicating the sheer implausibility of the hypothetical situation. This response is indicative of the rigid nature of marriage constructs prevalent in India, placing the family unit above the individual even in extreme situations. Many respondents in this case study reported they would undergo any amount of personal pain to preserve their family unit. These responses not only reflect respondents' desires to maintain their social status but most importantly, their desires to protect their children's marital outcomes.

While almost all respondents in the rural sample reported that they would never leave their marriages regardless of employment status, approximately 21 percent of the urban respondents stated that their employment status *did* provide them with enough confidence to leave the marriage. These respondents said their employment status not only gave them the financial security necessary to exit an unhealthy marriage, but also provided them with greater self-esteem and a support system outside the household. The overwhelming majority of rural respondents similarly reported that they would not leave their marriages, regardless of property status. Among urban respondents, only 8 percent reported their property status provided them with enough confidence to leave the marriage if needed, citing the financial stability and shelter that their property status offered. Among the remainder of urban respondents, legal issues in selling property, existing loans on the property, maintenance costs, and the sustainability of living solely off the property limited respondents' confidence in exiting their marriages. Overall, evidence from this case study indicates women do not view property status as increasing their sense of

empowerment or view exiting the marriage as a viable option regardless of property status. Based on these results, property status was dropped from the empirical analysis conducted in the following section.

Section III: Empirical Specifications

Empirical analysis was conducted using 2005-2006 data collected during the third round of National Family Health Survey (NFHS)⁷ data collection. The sample was restricted to Keralan women who experienced violence committed by their husbands in the past 12 months and had at least one child between the ages of 0 and 5 in the household⁸. A dummy for experiencing spousal violence was constructed and used as the key dependent variable in this study. A dummy was also constructed for female employment in the past 12 months and used as the key independent variable. Households with incomplete data were dropped resulting in a final sample size of 570 households⁹. Table 2 provides descriptive statistics of the sample.

[Table 2]

On average, approximately 10 percent of women in the sample reported spousal violence. However, according to Sakhi Resource Centre for Women (2004), NFHS estimates for gender-based violence in Kerala underreport by as much as 30 percentage points. This trend of under-reporting occurs despite the higher levels of educational attainment reflected in this sample set and demonstrates a limitation of study results.

The following regression model was constructed based on case study analysis:

$$V = \alpha_h H + \alpha_m M + \alpha_w W + \alpha_e X + \varepsilon$$

where V is a dummy variable for spousal violence experienced by the woman in the previous 12 months. V can be considered a function of variables which capture household's economic position (H), husband's socio-economic characteristics (M), wife's socio-economic characteristics (W) and additional explanatory

⁷ NFHS is a large-scale, multi-round survey conducted in a representative sample of households throughout India. It collects detailed data on households, employment, and women's issues.

⁸ This sample restriction was used to test instrument variables for biprobit models.

⁹ The empirical analysis in this paper relies on a relatively small data set. Recently published studies (Bhattacharya et al., 2009; Bloch and Rao, 2002; Panda and Agarwal, 2005; Srinivasan and Bedi, 2007) rely on data sets of 130 to 500 households. While small sample sizes are difficult to generalize, they allow for in-depth analysis on sensitive issues if internal validity is tested as in this study.

variables (X). The household's economic position (H) includes the amount of land owned by a household, the quality of housing material, and the household's wealth index¹⁰. The husband's socio-economic characteristics (M) includes his occupation as categorized by 'blue-collar' or 'white-collar'¹¹, level of educational attainment, and age. The wife's socio-economic characteristics (W) includes her employment status as defined as wage work outside the home, level of educational attainment, and age. Other variables considered in this model include the number of children between the ages of 0-5 in the household, caste, and type of marital family as categorized as joint or nuclear. All α represent coefficients to be estimated while ε , the error term, represents factors unaccounted for by the model. As the dependent variable is dichotomous, operating under the assumption that ε follows a normal distribution, a probit model will be used to estimate coefficients.

As discussed in previous sections, endogeneity between a woman's decision to undertake wage work outside the home and incidence of domestic violence is highly likely. The endogeneity arises as a woman who experiences spousal violence may be more motivated to reduce time spent in the household and may thus be more likely to seek work outside the home. In such cases, it becomes difficult to isolate the causality between variables. Studies in different contexts have shown how the ambiguous impact of female employment on domestic violence rates transforms once endogeneity is accounted for in simultaneous equation models (Bhattacharya et al. 2009; Gibson-Davies et al. 2005; Heath 2014). To address potential endogeneity, the model above controls for socio-economic variables likely to influence both female work participation and incidence of violence, such as the household's economic position or husband's occupational status. A simultaneous two-equation model will also be used to further isolate endogeneity between these variables:

$$E_w = \beta X_2 + \gamma$$

¹⁰ The wealth index is calculated by NFHS through partial-component analysis of 33 household assets and housing characteristics

¹¹ 'Blue-collar' occupations include unskilled/skilled manual labor, agricultural labor, and service jobs. 'White-collar' occupations include sales, clerical, professional/technical/managerial jobs.

where female employment status (E_W) is a function of a vector of explanatory variables (X_2) that are tested and determined to have no effect on the likelihood of V . Assuming the error term (γ) is normally distributed, both equations will be simultaneously estimated under a bivariate probit model.

Similar studies (Bhattacharya et al., 2009; Chin, 2011; Heath, 2013) utilize rainfall shocks, household bargaining power, family type, number of children, and caste as instrumental variables. Three variables are tested as possible instruments and utilized to estimate coefficients in the following section. As Bhattacharya et al. (2009) note, caste can be a very strong candidate for instrumentation after controlling for other socio-economic factors as it simultaneously captures socio-economic standing and can determine work status without having significant effects on the likelihood of experiencing spousal violence. As noted in previous sections, economic needs most strongly influence a woman's decision to work. Thus, the number of young children in a household and family type (joint or nuclear) are also strong candidates for instrumentation as these variables are likely to influence female employment status without directly affecting domestic violence, after controlling for other factors.

Section IV: Results

Table 3 displays bivariate correlations between domestic violence and selected variables.

[Table 3]

As expected, socio-economic variables were generally found to have negative relationships with incidence of spousal violence. The average quality of housing material, wealth index, educational levels, and husband's occupation are significantly lower in households which report incidence of domestic violence. Although slightly above traditional significance levels, it is interesting to note that households experiencing domestic violence tend to own more agricultural land. Although property ownership is not attributed to specific household members within this data set, these findings provide further evidence that property status may not be a significant factor in estimating the likelihood of experiencing domestic violence.

Looking at the key independent variable of this study, it initially appears that female employment status is associated with increased levels of spousal violence. This result mirrors similar findings in Panda

and Agarwal (2005). However, as noted above, it is likely that endogeneity between the dependent and independent variables may confound results. Table 4 presents estimates of different specifications of the violence equation probit model, testing for potential endogeneity.

[Table 4]

Specification 1 includes all household, husband, and wife covariates discussed in the previous section. As in the bivariate analysis, there appears to be a positive relationship between female employment status and incidence of spousal violence. The coefficient indicates that women who engage in paid work outside the household are 3.4 percentage points more likely to experience spousal violence. However, this relationship is not statistically significant.

To identify sources of the positive relationship between the dependent and independent variable noted in Specification 1, female employment status is broken down into occupational type – agricultural laborer, self-employed agricultural laborer, non-agricultural work – in Specifications 2 through 4. Although all relationships remain statistically insignificant, it is interesting to note that these specifications result in conflicting relationships between female self-employed agricultural labor and incidence of domestic violence, and between agricultural wage work and violence. These ambiguous relationships further point to endogeneity. Specifications 3 and 4 test potential instruments for the bivariate probit model. Specification 3 includes the number of children at or under 5 years old as well as a dummy to indicate nuclear family structure. Specification 4 includes a dummy variable to indicate belonging to ‘lower castes’, which includes other backward castes and scheduled castes. In both specifications, while family type is found to be statistically significant, the number of children and lower castes variables are found to be statistically insignificant in the domestic violence equation. This indicates that the number of children under the age of 5 within a household and caste may be useful instrument variables. Bivariate probit models will be used to test all three potential instruments. Table 5 presents maximum likelihood estimates of these models.

[Table 5]

Columns 1 and 3 present estimates for the employment equation. The employment equation in Column 1 is instrumented using number of children and family type. Neither variable is found to be significant, indicating these variables may not be useful in isolating endogeneity. Column 3 is instrumented using number of children, family type, and caste. Here, caste is found to be highly significant in determining female employment status, while number of children and family type remain insignificant. Columns 2 and 4 present estimates for the instrumented violence equation. When instrumented, the spousal violence variable shifts in direction and magnitude. In single equation probit estimates, female paid employment outside the home was estimated to *increase* the likelihood of experiencing spousal violence by 1 to 4 percentage points depending on the specification and type of labor. In contrast, the bivariate probit models show that female employment *decreases* the likelihood of experiencing spousal violence. Unlike the results of single equation probits, the bivariate probit model estimates are significant. Other coefficient estimates are also stable in the tested bivariate probit models. Columns 3 and 4 instrument the work equation using family composition, family type, and caste. These specifications present the best model tested in this study. Women of upper-caste backgrounds are found to undertake employment outside the house at significantly lower rates than women of the lower caste backgrounds. Other socio-economic indicators also present stable estimates in the work equation. The coefficient estimates show that female engagement in paid work outside the home decreases the likelihood of experiencing domestic violence by 3 percentage points at statistically significant levels.

Section V: Conclusions and Next Steps

This study presents evidence that female employment outside the home has a significant effect in reducing spousal violence. This effect may be caused by the easing of economic strain within the household as well as increased female mobility, bargaining power, and empowerment as found in the case study results in Section II. Further, this study demonstrates the need to treat female employment status and incidence of domestic violence as simultaneously determined. Estimates that do not account for endogeneity by failing to evaluate the possibility that violence at home may motivate a woman to seek

work outside the home are likely produce ambiguous results as shown in coefficient changes between single equation and simultaneous equation probit models in Section IV.

During preliminary research, information on female property ownership was found to be entirely missing in data sets like the NFHS, the National Sample Survey, and Indian Census. As the property status variable was dropped, this gap in the data did not affect this study. However, this lack of information reflects the general lack of attention female property status traditionally receives in development discussions and remains an issue to be addressed. Further, a study conducted by Sakhi Resource Centre for Women (2004) indicates that there is widespread under-reporting of domestic violence by the NFHS within the state of Kerala and most likely across India as well. Future data collection should attempt to remedy these issues.

Overall, the results presented in this paper suggest that while female property status provides a sense of financial stability for the household, it fails to directly provide a sense of empowerment to these women as property ownership does not necessarily translate into a credible exit option. Women's access to employment opportunities, on the other hand, was found to play a key role in reducing their vulnerability to violence through exposure reduction and amelioration of economic stress. Based on these results, policies which encourage female employment in regular wage work and help women leverage bargaining power within the household may prove more effective in reducing incidence of domestic violence within the Kerala context.

Table 1
Respondents' Demographics

	<u>Total (n=110)</u>	<u>Percentage</u>
<u>Marital Status</u>		
Married	90	0.82
Widowed	11	0.10
Separated	3	0.03
Single	6	0.06
<u>Religious Affiliation</u>		
Hindu	75	0.68
Muslim	21	0.19
Christian	14	0.13
<u>Respondent's Employment Status</u>		
Full-time Employed	56	0.51
Part-time/Informally Employed	21	0.19
Unemployed	33	0.30
<u>Respondent's Property Status</u>		
Own Name	19	0.17
Own Name & Jointly with Husband	2	0.02
Jointly with Husband	14	0.13
Jointly with Children	2	0.02
None	73	0.66
<u>Dowry (n=104)</u>		
Demanded by Husband or His Family	36	0.35
Given, but not 'Demanded'	61	0.59
No Dowry Given	7	0.07

Table 2.

Descriptive Statistics (married women living with husband in past 12 months) – weighted data

<u>Variable</u>	<u>Mean</u>	<u>Standard Deviation</u>
Violence in the past year	0.102	0.303
Work in the past year	0.242	0.429
Agricultural Land Owned (hectares)	0.035	0.289
Quality of House ¹	2.842	0.411
Wealth Index ²	4.208	0.932
Husband's Age	36.011	6.550
Husband's Educational Level ³	2.001	0.623
Husband's Occupation ⁴		
Husband Drinks Alcohol	0.360	0.480
Wife's Age	29.677	5.766
Wife's Educational Level ³	2.121	0.637
Number of children, aged 0-5	1.365	0.714
Caste	2.324	0.725
General Castes	0.477	0.500
Other Backward Castes	0.370	0.483
Scheduled Castes/ Scheduled Tribes	0.153	0.360
Family Structure ⁵	1.665	0.473

¹House quality was categorized as kaccha/weak = 1, semi-pucca/medium quality = 2, pucca/strong = 3²Wealth Index was split into five quintiles with where the poorest quintile = 1 and the richest quintile = 5³Educational level was categorized as no education = 0, primary education = 1, secondary education = 2, higher education = 3⁴Husband's Occupation was categorized by type where unemployed = 0, unskilled/skilled manual labor = 1, services = 2, agricultural labor = 3, sales = 4, clerical jobs = 5, professional/technical/managerial = 6⁵Family structure was categorized as joint = 0, nuclear = 1

Table 3.

Bivariate Relationships between Domestic Violence and Selected Variables

<u>Variable</u>	<u>DV=0</u>	<u>DV=1</u>	<u>P-value*</u>
Agricultural Land Owned (in hectares)	0.027	0.104	0.057
Quality of House	2.861	2.672	0.001
Wealth Index	4.293	3.466	0.000
Husband's Age	36.016	35.983	0.971
Husband's Educational Level	2.035	1.707	<0.001
Husband's Occupation	2.555	1.690	<0.001
Wife's Age	29.703	29.466	0.766
Wife's Educational Level	2.145	1.914	0.009
Wife engaged in paid work outside home	0.178	0.241	0.237
Number of children, aged 0-5	1.359	1.414	0.583
Family Structure: Nuclear	0.315	0.517	0.002
Caste	3.266	2.586	0.000
General Castes	0.496	0.310	0.007
Other Backward Castes	0.379	0.293	0.200
Scheduled Castes/Scheduled Tribes	2.371	1.914	0.000
Total Sample Size	512	58	

* This column lists p-values for two-tailed t-test.

Table 4.

Single Equation Probit Estimates – Probability of Experiencing Violence

Variable	Specification 1	Specification 2	Specification 3	Specification 4	Specification 5
Land Owned by household	0.063* (2.05)	0.061* (2.05)	0.061* (2.04)	0.057 (1.90)	0.060* (2.04)
Condition of house – kuccha/semi-pucca	-0.005 (0.13)	-0.011 (0.29)	-0.013 (0.33)	-0.012 (0.33)	-0.015 (0.40)
Wealth Index – poorest/poorer	0.138** (2.68)	0.133** (2.64)	0.137** (2.67)	0.120* (2.37)	0.116* (2.34)
Wealth Index – middle	0.123** (3.41)	0.122** (2.64)	0.125*** (3.51)	0.112** (3.18)	0.113** (3.23)
Husband's education- none	0.101 (1.24)	0.078 (0.98)	0.075 (0.95)	0.076 (0.95)	0.082 (1.05)
Husband's education – primary/secondary	0.049 (1.10)	0.026 (0.57)	0.025 (0.54)	0.029 (0.65)	0.027 (0.61)
Husband's age	0.005 (1.41)	0.004 (1.16)	0.004 (0.257)	0.004 (1.09)	0.003 (1.02)
Husband's occupation –blue collar	-	-	-0.115 (1.67)	-0.112 (1.67)	-0.103 (1.56)
Husband's occupation – white collar	-	-	0.157* (2.19)	-0.154* (2.21)	-0.141* (2.05)
Wife's education- none	0.034 (0.44)	0.024 (0.33)	0.024 (0.32)	0.026 (0.36)	0.026 (0.36)
Wife's education – primary/secondary	0.012 (0.31)	0.010 (0.25)	0.008 (0.21)	0.006 (0.17)	0.005 (0.13)
Wife's age	-0.005 (-1.38)	-0.005 (1.24)	0.005 (1.19)	-0.005 (1.17)	-0.004 (1.07)
Wife's occupation – agri. wage labourer	-	-	0.025 (0.31)	0.028 (0.36)	-0.017 (0.32)
Wife's occupation – agri. self-employed	-	-	0.001 (0.00)	-0.009 (0.06)	-0.001 (0.00)
Wife's occupation – non-agricultural	-	-	0.031 (0.44)	0.035 (0.51)	0.029 (0.85)
Wife engaged in paid work outside home	0.031 (0.97)	0.034 (1.11)	-	-	-
Number of children, age 0-5	-	-	-	0.012 (0.76)	0.013 (0.85)
Nuclear family	-	-	-	0.046* (1.97)	0.046* (1.99)
Lower Castes	-	-	-	-	0.038 (1.66)
<i>N</i>	570	570	570	570	570
<i>R</i> ²	0.105	0.119	0.118	0.128	0.156

Note. Absolute value of t-statistics in parentheses. 'Lower castes' denotes other backward castes and scheduled castes/scheduled tribes.

Table 5.

Bivariate Probit Estimates – Probability of Working and Experiencing Violence

<u>Variable</u>	Marginal Effects Working Bivariate Probit (1)	Marginal Effects Violence Bivariate Probit (2)	Marginal Effects Working Bivariate Probit (3)	Marginal Effects Violence Bivariate Probit (4)	Marginal Effects Work IV (5)	Marginal Effects Violence IV (6)
Land Owned by household	-0.039 (0.03)	0.003** (3.32)	-0.070 (0.03)	0.001 (0.65)	-0.003 (0.07)	0.104 (1.03)
Condition of house – pucca	-	-	-	-	0.104 (1.66)	-0.046 (0.50)
Condition of house – kuccha/semi-pucca	-0.503 (1.65)	0.031*** (5.24)	-0.572** (3.05)	0.011** (3.09)	-	-
Wealth Index – poorest/poorer	1.397** (3.42)	0.209*** (20.58)	0.997*** (3.74)	0.107*** (11.84)	-	-0.026 (0.14)
Wealth Index – middle	1.273*** (4.16)	0.126*** (16.52)	1.018*** (5.98)	0.066*** (11.04)	-0.025 (0.27)	-0.019 (0.14)
Husband's education- none	-0.975 (0.78)	0.027** (3.13)	-0.636 (0.90)	0.021*** (4.01)	-	0.295 (1.60)
Husband's education – primary/secondary	-0.511* (2.40)	0.005 (0.68)	-0.476* (2.41)	0.007 (1.50)	0.073 (0.99)	0.140 (1.80)
Husband's age	-0.075** (3.21)	-0.002*** (5.38)	-0.071*** (4.07)	-0.001*** (4.05)	-0.014** (3.06)	0.016 (1.82)
Husband's occupation –blue collar	4.809*** (8.26)	-0.011 (0.59)	5.021*** (5.93)	-0.008 (0.73)	0.080 (1.70)	-0.265 (1.63)
Husband's occupation – white collar	4.885*** (8.30)	-0.063** (3.29)	5.198*** (6.76)	-0.033** (2.94)	0.115* (2.22)	-0.320 (1.93)
Wife's education- none	-0.828 (1.36)	-0.009 (0.77)	-0.978** (3.24)	0.015* (2.51)	-0.163 (1.43)	0.148 (1.03)
Wife's education – primary/secondary	-1.023*** (6.47)	-0.062*** (5.43)	-1.056*** (7.60)	-0.014* (2.35)	-0.244*** (5.47)	0.203 (1.77)
Wife's age	0.114*** (5.10)	0.006*** (10.14)	0.106*** (5.70)	0.002*** (6.31)	0.021*** (4.22)	-0.025 (1.87)
Wife engaged in paid work outside home	-	-0.178*** (21.82)	-0.174 (1.34)	-0.030* (2.47)	-	0.844 (1.89)
Number of children, age 0-5	-0.188 (1.38)	-	0.031 (0.19)	-	-0.026 (1.64)	-
Nuclear family	-0.018 (0.13)	-	0.031 (0.19)	-	-0.0004 (0.01)	-
General	-	-	-0.715*** (3.60)	-	-	-
Other Backward Castes	-	-	-0.681*** (4.49)	-	-0.061 (1.72)	-
Scheduled Castes/Scheduled Tribes	-	-	-	-	-0.066* (2.46)	-
<i>N</i>	570	570	570	570	570	570

Note: Absolute value of t-statistic in parentheses

References

- Agarwal, B. (1997). Bargaining and gender relations: Within and beyond the household. *Feminist Economics*, 3(1), 1-51.
- Agarwal, B. & Panda, P. (2007). Toward freedom from domestic violence. *Journal of Human Development*, 8(3).
- Bloch, F. & Rao, V. (2002). Terror as a bargaining instrument: A case study of dowry violence in rural India. *American Economic Review*, 92(4), 1029-1044.
- Dobash, R.E. & Dobash, R. (1992). *Women, violence and social change*. London: Routledge.
- Dreze, J. & Sen, A. (1989). *Hunger and public action*. Oxford: Clarendon Press.
- Eapen, M. & Kodoth, P. (2005). Looking beyond gender parity: Gender inequities of some dimensions of well-being in Kerala, *Economic and Political Weekly*, 40(30), 3278-3286.
- Farmer A. & Tiefenthaler J (1997). An economic analysis of domestic violence. *Review of Social Economy*, 55(3), 337-358.
- Gibson-Davis, C. M., Magnuson, K., Gennetian, L.A., & Duncan, G.J. (2005). Employment and the risk of domestic abuse among low-income women. *Journal of Marriage and Family*, 67(5), 1149-1168.
- Hashemi, S. M., Schuler, S. R., & Riley, A. P. (1996). Rural credit programs and women's empowerment in Bangladesh. *World Development*, 24(4), 635-653.
- Heath, R. (2014). Women's access to labor market opportunities, control of household resources, and domestic violence: Evidence from Bangladesh. *World Development*, 57, 32-46.
- Jejeebhoy, S. J. (2000). Women's autonomy in rural India: Its dimensions, determinants, and the influence of context. In *Women's Empowerment and Demographic Processes: Moving Beyond Cairo*. H. Presser and G. Sen, (Eds.). New York: Oxford University Press.
- Kabeer, N. (1997). Women, wages and intra-household power relations in urban Bangladesh. *Development and Change*, 28, 261-302.

- Mitra, A. & Singh, P. (2007). Human capital attainment and gender empowerment: The Kerala paradox, *Social Science Quarterly*, 88(5), 1227-1242.
- Parayil, G. (1996). The 'Kerala model' of development: development and sustainability in the Third World, *Third World Quarterly*, 17(5), 941-957.
- Sakhi Resource Centre for Women. (2004). *A study on gender based violence in Kerala*. Trivandrum, Kerala.
- Schuler, S. R., Hashemi, S.M., Riley, A.P., & Akhter, S. (1996). Credit programs, patriarchy and men's violence against women in rural Bangladesh. *Social Science and Medicine*, 43(12), 1729-1742.
- Sen, A.K. (1993). Capability and well-being. In *The Quality of Life*. M. Nussbaum and A.K. Sen (Eds.). Oxford: Oxford University Press, 30-66.
- Srinivasan S. & Bedi A.S. (2007). Domestic violence and dowry: evidence from a south Indian village. *World Development*, 35(5), 857-880.
- Tauchen, H.V., Witte, A.D., & Long, S.K. (1991). Domestic violence: a non-random affair. *International Economic Review*, 32(2), 491-511.
- Véron, R. (2001) The 'new' Kerala model: Lessons for sustainable development, *World Development*, 29(4), 601-617.