Minimum wage and women's decision making power within households: Evidence from Indonesia

Jin Ho Kim[1] **and Benjamin D. Williams**

The George Washington University

Abstract

We estimate the effects of the minimum wage on women's intrahousehold bargaining power in Indonesia. Using regional minimum wages in Indonesia from 2000-2014 and a sample of married household heads and their spouses from a panel of Indonesian households, we implement a method that exploits differences in real minimum wage changes between geographically proximate districts. We exploit survey responses regarding participation in household decisions as a proxy for bargaining power. The minimum wage has a negative and statistically and economically significant effect on married women's bargaining power. We provide evidence that this negative effect is due to a relative improvement in labor market opportunities for married men compared to their wives in response to a minimum wage increase. The negative effect of the minimum wage on women's bargaining power is stronger among less educated women who rarely work in the formal sector. We also find

[1]Corresponding author: 2424 Pennsylvania Ave., Apartment 302 Washington DC 20037, phone: 1-202-830-5829, email: Jinhokim120@gmail.com. This paper has benefited from comments from Maike Hohberg, Remi Jedwab, Jann Lay, Jeremy Magruder, David Newman, Bob Rijkers, Roberto Samaniego, Stephen Smith, Jon Strauss, Andrew Waxman, and Tony Yezer, and conference and seminar participants at the Development Tea and SAGE seminar at the George Washington University, the 2017 Singapore Economics Review, the 2017 Asia-Pacific Conference on Economics & Finance, the 2018 meetings of the Southern Economics Association, the 2018 meetings of the Asian Econometric Society, the 2018 meetings of the China Econometric Society, the 2018 IAES Conference in London, and the 2019 Jobs and Development Conference (World Bank/IZA/NJD), as well as the editor, Marcel Fafchamps, and two anonymous referees. All remaining errors are our own.

that the minimum wage increases household expenditure on tobacco and alcohol, reduces their contributions to a common form of microfinance, and has a negative effect on children's health, consistent with a loss of women's bargaining power. These effects are driven primarily by less educated women. Our main results are robust to various specification choices.

1. Introduction

Economists and policy makers increasingly agree that gender equity and the empowerment of women are top priorities in economic development. The World Bank and the United Nations, among other major development institutes, recognize these as key development goals. Duflo (2012) surveys an extensive literature showing a complex interdependence between gender equity and women's empowerment and economic development. Empowering women and reducing gender inequality has been found to improve development outcomes such as fertility choice, welfare of children, labor force participation and labor productivity. And economic development, in some cases, has been found to promote the empowerment of women. These empirical findings have been supported by renewed interest in the development of theoretical models of household decision making. While the labor market environment plays an important role in these theoretical models, the empirical research is mostly limited to studies of well-targeted social welfare policies that identify causal effects through randomized controlled trial or natural experiments rather than studies of the impact of broad-based labor market policies.[2] This is particularly the case in the context of developing countries.[3]

One of the most widely implemented labor market policies both in developed and developing countries is the minimum wage. There is an extensive literature on the effect of the minimum wage on employment (see Congressional Budget Office, 2014 and Neumark and Wascher, 2015 for surveys) and on the wage distribution (see, for example, Neumark et al. 2004). While this literature focuses more on developed countries, and specifically the U.S., there is also ample evidence regarding the effects of minimum wage increases in developing countries, where the minimum wage is typically not binding for a large proportion of workers employed in the informal sector, and where the minimum wage tends to be closer to the

[2]See Doss (2001), Duflo and Chattopadhyay (2004), Allendorf (2007), Osmani and Khan (2007), Qian (2008), Anderson and Eswaran (2009), Ashraf (2009), Antman (2014), Jensen (2012), Heath (2014), de Brauw et al. (2014).

[3]An important exception is Majlesi (2016) who finds that shocks to labor demand for female labor have a positive effect on women's intrahousehold bargaining power.

average formal sector wage than it is in the U.S. (see, for example, Lemos, 2009; Alaniz, Gindling, and Terrell, 2011; and Magruder, 2013).

Several studies have found that the minimum wage has a differential impact on men and women in the labor market (Blau and Kahn, 2003; Botero et al., 2004; Rubery and Grimshaw, 2011; Hallward-Driemeier et al., 2015; and Majchrowska and Strawinski, 2018, among others). The majority of the evidence points to a narrowing of the gender wage gap as the minimum wage increases because women's wages are more likely than men's to be at or near the minimum wage. However, the textbook treatment of minimum wages as a price floor under perfect competition suggests that the reduction in the gender wage gap due to the minimum wage is potentially offset by a reduction in full time employment among women. Rubery and Grimshaw (2011) argue instead that employers enjoy monopsonistic power in the labor market and women tend to have less bargaining power for negotiating a higher wage due to various reasons, including their lack of bargaining power within the household, which limits their mobility. According to this argument, the wage gap narrows in response to a minimum wage increase, even accounting for any employment effects. However, wage gap studies tell us little about the impact of minimum wage policies on women who do not participate in the labor market or who work in the informal labor market where the minimum wage is not enforced. This is particularly problematic in countries where there is a large informal labor market and/or women's labor force participation is low.

To address this problem, in this paper we study the effect of the minimum wage on married women's intrahousehold bargaining power in Indonesia. In models of household decision making the spouses' threat points – defined as a counterfactual utility outside of the marriage – determine their intrahousehold bargaining power; see Manser and Brown (1980), McElroy and Horney (1981), Browning and Chiappori (1998), Pollak (2005), and Heath and Tan (2015), among others. Thus, married women may be affected by the minimum wage even if they do not participate in the labor force because the minimum wage affects their threat points, and their husbands' threat points, through its impact on labor market

opportunities. In Indonesia, the labor force participation rate for women is substantially lower than for men. Moreover, women who work are more likely than men to work in the informal sector. Therefore, it is plausible that, even if the average wage gap narrows in response to a minimum wage increase (Hallward-Driemeier et al., 2015), the average married woman still loses bargaining power at home as her threat point is not substantially changed relative to her husband's if taking a job in the formal sector is not a real threat.

We measure women's intrahousehold bargaining power using decision making indicators that consist of responses when asked who in the household makes decisions regarding different activities. This survey instrument has been used by several others to proxy for household bargaining power (Antman, 2014; Atkin, 2009; Friedberg and Webb, 2006; Majlesi, 2016). Friedberg and Webb (2006) find that for women in the US intrahousehold decision making is positively impacted by their current and past earnings and negatively affected by their husbands' current and past earnings. Using panel data from the Mexican Family Life Survey, Antman (2014) shows that married women's work status increases their probability of being involved in household decisions regarding large purchases. Majlesi (2016) finds that exogenous shifts to women's labor market opportunities in Mexico increase women's participation in a range of intrahousehold decisions.

Indonesia provides a fruitful testing ground to investigate the effect of the minimum wage on intrahousehold decision making. We use a sample of married couples from waves 3, 4 and 5 of the Indonesian Family Life Survey (IFLS), a household level panel dataset, which contain data from the years 2000, 2007, and 2014. During this period in Indonesia, the minimum wage is set at the province and district level each year, resulting in wide variation over time, across provinces, and across districts within some provinces. Furthermore, as noted above, this is a setting in which the effect on women's empowerment and gender equity is likely not fully captured by the effect on the gender wage gap, due to the low labor force participation rates, and low rates of employment in the formal sector, of women relative to men in Indonesia.

Our identification strategy exploits variation over time in differences in the minimum wage between geographically proximate districts in Indonesia, where minimum wages are set regionally. The difference in spatial differences (DSD) estimator that we use generalizes the more common difference in differences estimator by focusing on local differences in changes over time. We adopt the DSD methodology in this study in part because Magruder (2013) found that DSD estimates were not always consistent with difference-in-differences estimates. Using the DSD estimator and minimum wage data from Indonesia, Magruder (2013) found evidence of a positive effect of the minimum wage on formal sector employment and argued that difference-in-differences estimates were biased because regional minimum wages are set endogenously in Indonesia.

Our main finding is that the minimum wage has a negative and statistically significant effect on overall measures of married women's intrahousehold bargaining power. In addition, we find evidence of a negative effect of the minimum wage on married women's role in several individual dimensions of household decision making – decisions regarding large purchases, routine purchases, the use of contraception, and decisions regarding their children. To the best of our knowledge, this is the first paper that studies the empirical relationship between minimum wage policy and household decision making.

A negative effect of the minimum wage on women's household bargaining power can be explained by a positive effect of the minimum wage on married men's labor market opportunities relative to labor market opportunities for their wives. Thus, at least on average, women's bargaining power decreases as their relative threat point is diminished. To support this claim, we study the impact of the minimum wage on labor market outcomes for the same sample of married couples separately for men and women. While the minimum wage has a substantial effect on the average wages of both men and women who work full time in the formal sector, around three times as many men as women work full time in the formal sector. Moreover, the minimum wage increases the probability that men work full time in the formal sector and decreases the probability that they work in the informal sector but it does

not have these effects for women. Instead, the minimum wage increases the probability that women work part time in the formal sector and increases the probability that they engage primarily in unpaid family work, thus increasing the probability that their work is not subject to the minimum wage.[4] This suggests that the higher wages and the formalization of the labor market that Magruder (2013) documents as an effect of higher minimum wages benefits men more than women. Thus, the minimum wage does not universally improve women's empowerment or gender equity, despite previous findings that it reduces the wage gap, at least in the manufacturing sector in Indonesia (Hallward-Driemeier et al., 2015). This is in line with Duflo (2012) who argues that economic development policies do not necessarily bring about gender equity as a side effect.

Standard models of the household suggest that household decision making should not necessarily be affected by observed labor market outcomes, such as labor force participation or sector choice, because intrahousehold bargaining power is determined by their *counterfactual* labor market outcomes via threat points. We have two important findings that are consistent with this theory. First, we find that controlling for labor market outcomes only slightly mitigates the negative effect of the minimum wage on women's household bargaining power.[5] Second, we find that the negative effect of the minimum wage on women's bargaining power is much stronger among less educated women in Indonesia. These women are more likely to have a marital threat point that is not affected by the minimum wage, as it would be more difficult for them to obtain a full time formal sector job without more education.[6]

The impact of the minimum wage, or other labor market policies, on intrahousehold bargaining power is important to the extent that increased bargaining power for married women represents increased women's empowerment, which is a policy goal itself. But it also matters because this increased empowerment could impact other outcomes, such as reducing fertility

[4]Employers in Indonesia are only required to pay the minimum wage to full time employees; part time employees are exempt.

[5]Majlesi (2016), who studies women's household bargaining power in Mexico, shows a similar result.

[6]Kleemans and Magruder (2018) similarly find disparate impacts of internal migration on the Indonesian labor market by skill level and model this as a product of the large unregulated informal sector.

(see, e.g., Ashraf, Field, and Lee, 2014), improving children's health (Duflo, 2003, among others) and reducing domestic violence (Aizer, 2010). We report evidence that the minimum wage impacts other outcomes that men and women typically have different preferences for, in the direction that is consistent with a negative effect on women's bargaining power. We find that the minimum wage has a positive effect on the household's consumption of tobacco and alcohol, a negative effect on the household's contributions to an Indonesian form of microfinance that is commonly used by women, and a negative effect on children's health. In addition, these effects of the minimum wage are driven almost entirely by less educated women, the same group for which we find a stronger negative effect on bargaining power.

The following section will be devoted to discussing the labor market in Indonesia with a focus on the minimum wage and labor market environment by gender. In Section 3, we discuss the data and empirical strategy. Section 4 presents our main empirical results and robustness check and we conclude in Section 5.

2. Background on minimum wages in Indonesia

The unique history of minimum wages in Indonesia allows us to test our main hypothesis and explore the underlying mechanisms but also suggests the potential for endogeneity in standard regression estimates. A minimum wage law in Indonesia has been on the books since 1970, though it was largely unenforced before 1990. In the late 1980s, Indonesia experienced international pressure due to its low wages and worker exploitation, and minimum wage levels started to grow in response (see Harrison and Scorse, 2010, and Rama, 2001, for a more detailed discussion). During the 1990s the real minimum wage increased dramatically before stalling as nominal increases failed to keep up with high levels of inflation during the Asian financial crisis in 1997. Beyond its impact on the decline of real minimum wage, the Asian Crisis also served as a shock that provided the political and economic impetus that led to the demise of Suharto, the dictator in Indonesia from 1967 to 1998, and the subsequent political transformation that led to the enactment of the decentralization laws of 1999. These

laws allowed each local government to make autonomous policies in consideration of the local economy, including the determination of minimum wage rates. After the economy recovered from the crisis in 2001, the upward trend in the real minimum wage recovered and has since shown a consistent increase (Del Carpio et al., 2015). Figure 1 shows the resulting variation in real minimum wages across provinces from 1993 to 2014.

In each province a minimum wage council negotiates the minimum wage for the province. While the minimum wage varied across provinces before the decentralization laws of 1999, the final determination for each province was made centrally by the Ministry of Manpower. After these laws were passed, the province's governor was responsible for approval of the minimum wage proposed by the wage council. Figure 1 displays these province level minimum wages ("upah minimum provinsi"). In addition, in some provinces, minimum wage councils are also formed at a lower administrative level – for a group of districts (kabupatens) or cities (kotas), or for individual districts or cities. These minimum wage councils negotiate minimum wages for their region that exceed the province level minimum wage, and the negotiated minimum wage must also be approved by the governor of the province. This process leads to substantial variation in the minimum wage within some provinces. In 2000, only 5 provinces exhibited within province variation in the minimum wage, and within each of these provinces there were no more than 4 different regional minimum wages. By 2014, however, at least 14 out of Indonesia's 34 provinces had within province variation in the minimum wage. Moreover, in 2014 many provinces, such as West Java, had a different minimum wage for nearly every district or city. While Figure 1 demonstrates considerable variation across provinces in the province level minimum wage, as well as variation over time, the maps in Figures 2-4 demonstrate that there was also substantial within province variation in the minimum wage in each year.

The spatial variation in minimum wages is a potential source of endogeneity for regression analysis, as suggested by Magruder (2013). Our concern is based on the purpose of the minimum wage law in Indonesia which is specified in the regulations of the Ministry of

Manpower. Though the various regulations of the labor market have gone through revisions over the years, the core purpose of the minimum wage law has stayed intact. For example, the Ministry of Manpower's regulation No. 01 of 1999 stipulates the purpose of the law in the following way:

1. In order to materialize decent income for workers, some considerations are taken into account that includes raising the welfare of workers without ignoring company's productivity and its advancement as well as a consideration on general economic conditions.

2. Determination of realistic regional and sectoral minimum wage should take into account some aspects such as company's capability to pay, conditions of the sector in which the company operates and the regional economy where the firm is located, it is also necessary to determine regional and sectoral minimum wage.

Likewise, the Ministry of Manpower's regulation in 2014 says:

Worker/labor wages might fall to the lowest level as a result of labor market imbalance. Therefore, it is necessary to harmonize the minimum wage policy to ensure the continuity of businesses and improve the living standard of workers/laborers.

Considering the stated purpose of the minimum wage law, it is clear that its aim is not only to raise the welfare of the workers, but also to guarantee the betterment of firm's productivity and to sustain economic growth of the local economy. As a result, the minimum wage is carefully set with substantial consideration given to regional labor market conditions. Thus relative changes over time between districts in the minimum wage may be endogenous, suggesting a potential bias in standard district level difference in differences estimates. Our identification strategy instead leverages local minimum wage variation between nearby districts, minimizing this concern to the extent that the regional minimum wage councils target the minimum wage to local economic conditions that are largely shared by neighboring districts.

Several empirical studies have exploited variation in minimum wages in Indonesia to

study labor market outcomes. Rama (2001), Suryahadi et al. (2003), Alatas and Cameron (2008), and Comola and de Mello (2011) use difference-in-differences approaches that exploit variation over time within province in the minimum wage. Some have used individual level panel data (Hohberg and Lay (2015), Hallward-Driemeier et al. (2015), Del Carpio et al. (2015)) controlling for the individual fixed effect, assuming that the correlation between minimum wage and labor market conditions is not a serious concern for endogeneity. Noting the potential for endogeneity discussed above, Magruder (2013) introduces the econometric method we use in this paper, which uses local spatial variation in minimum wages to control for the time-varying province-level labor market conditions.

Among these, the only paper that focuses primarily on the effect of the minimum wage on gender equity is Hallward-Driemeier et al. (2015).[7] Hallward-Driemeier et al. (2015) provide evidence that the minimum wage hike narrowed the average gender wage gap between men and women working in the formal manufacturing sector between 1996 and 2006. However, the manufacturing sector represents only roughly 10 percent of the population and does not represent the general population, according to the IFLS data. Moreover, their analysis does not consider the impact of the minimum wage on women who do not participate in the labor force.

3. Empirical implementation

3.1. Data

The primary data source for our analysis is the Indonesian Family Life Survey (IFLS). We use data from waves 3-5 of the survey, conducted in 2000, 2007, and 2014. In all three waves, households were administered survey questions regarding household decision making.[8]

[7] Comola and de Mello (2011) and Hohberg and Lay (2015) also provide some results by gender.

[8] The household decision making questionnaire was not administered in wave 1 of the survey. We exclude data from wave 2, which was conducted in 1997, from our analysis because of a concern that both the determination of minimum wages and other economic trends differed markedly before 2000 due to the Asian crisis, the fall of Suharto, and the subsequent decentralization. Incorporating data from wave 2 could invalidate the parameter constancy assumptions implicit in our empirical model.

The data covers 83% of the total population and contains over 30,000 individuals living in 21 out of the 34 provinces. The IFLS is known for its lower level of attrition, and it collects data both on individuals and households, allowing us to construct individual level panel data and conduct the research on household decision making processes. The sample we use for our analysis includes 42,130 observations from roughly 12,000 married couples.[9] For this sample of married couples we construct various labor market outcomes and decision making indicators. We annualize the self-reported income variables to be consistent with minimum wages prescribed by law for annual wage income. We also adjust income and wages by a province level CPI published by the Indonesian Central Bureau of Statistics (BPS).[10]

Table 1 presents cross-sectional descriptive statistics on the characteristics of the sample separately by gender and by survey year. We report three income variables that will be used later in the analysis. The first is coded as missing for anyone who does not report a positive wage income or income from self-employment (i.e., net profit). For those reporting positive income of either type, this variable is the sum of any positive wage income and income from self-employment. The second variable records any positive wage income from full time formal sector employment and is coded as missing for those who do not work full time in the formal sector. The third income variable is non-missing for any observation for which we can infer an income, even if it is zero income. Thus, for those who report not working this variable is zero. It is also zero for individuals who report working but indicate that their primary activity is "unpaid family work" and report no wage or profit income. It is missing for those who report that they do work (but not primarily unpaid family work) yet do not report an income. For all others, it is the sum of wage and profit income from self-employment.

The panel is not balanced so that changes over time in the summary statistics represent,

[9]We first restrict the sample to only include the head of household or the head's spouse. We then restrict the sample further to only households where both spouses responded to the survey. For household decision making variables, we initially consider only the women's responses but we later show that our results are robust to replacing these with the husbands' responses in cases where the spouses disagree.

[10]We use CPI to deflate nominal income, household asset and nominal minimum wages. The BPS provides constructed CPI for different cities across the country. Matching the CPIs of the capital city with each province, we have created a CPI measure for provinces across years. We use 2007 as the base year.

in part, changes in the composition of the sample. Nevertheless, the statistics reveal a number of contrasting characteristics on labor market outcome by gender. One pattern we observe from our data is that only about 60% of women work, though this jumps to nearly 66% in 2014. Moreover, the primary employment of 15-20% of these women is unpaid family work.[11] By contrast, 96-97% of men in the sample work, with only 1% primarily engaged in unpaid family work. The gap in labor force participation remains large from 2000 through 2014. This is striking given that the gap in the average education level between men and women in the sample narrows substantially from 2000 to 2014.[12] Lastly, far more men than women work full time in the formal sector (32-38% vs. 11-14%), though men and women report part-time formal sector employment at similar rates.[13]

Figure 5 plots the distribution of total earned income relative to the minimum wage by gender and year and Figure 6 plots the distribution of wages among full time formal sector workers relative to the minimum wage by gender and year. One feature that is evident from these figures is that there is a substantial proportion of both men and women earning less than the minimum wage.[14] Even among full time formal sector workers there is a large fraction reporting earnings below the minimum wage. This is common in developing countries, in contrast to developed countries where the minimum wage is typically at the bottom of the income distribution, and is the result of the inability of provincial governments in Indonesia to strictly enforce the minimum wage (see Basu, Chau, and Kanbur, 2010 and Kim, 2019). However, there is clear evidence in Figure 6 of bunching in the wage distribution

[11]Respondents who report working are asked to categorize their primary job and any secondary job. This is the variable we use to distinguish between formal sector and informal sector employment. One of the possible categories is "unpaid family work". Unless otherwise noted, we consider unpaid family work as informal sector employment.

[12]This pattern is consistent with the National Labour Force Survey (SAKERNAS). See Schaner and Das (2016).

[13]Here, and throughout the rest of the paper, we define the formal sector as those who report working for a private company or the government. Informal sector workers are those who report being self employed or engaging primarily in casual work or unpaid family work. We consider full time employment to be 35 hours or greater per week.

[14]We calculate total earned income by adding wage to any profit from self employment. In our sample, 31 percent of the respondents report a wage only, another 31 percent report only profit from self employment, and 8 percent report both. This leaves 30 percent of the sample reporting no income at all.

at the minimum wage for both men and women, suggesting that the minimum wage is binding at least for some employers. While the bunching seems more prominent for women, a larger fraction of women than of men, both overall and in the formal sector, earn below the minimum wage. These stylized facts provide some motivation for our analysis as it is apparent that the extent to which the minimum wage affects wages differs for men and women.

In the IFLS, the head of household and their spouse are asked who participates in various different categories of household decisions. The decision areas are: money given to the husband's parents and extended family, money given to the wife's parents and extended family, large expensive purchases, gifts for parties and weddings, husband's clothes, wife's clothes, money contributed to the arisan,[15] money contributed to monthly savings, children's clothes, children's education, children's health, contraception, and labor force participation of the respondent and their spouse. Each type of decision could be made by a single household member or jointly with other household members. For each type of decision, we construct a binary indicator for whether the wife is reported to be one of the decision makers in the household decision.[16] Table 2 provides descriptive statistics for these variables, as reported by the women in our sample. There is substantial variation over time and across different decision categories in the percentage of households in which the woman is involved in decision making. Across all decision categories this percentage increases from 2000 to 2007 but drops after 2007, though this drop is more dramatic for some categories (money given to family, large expenses, and contraception) than others (routine purchases and the wife's and children's clothing).[17]

To motivate further analysis, Table 3 presents initial results from fixed effects regressions

[15]The arisan is a form of Rotating Savings and Credit Association in Indonesian culture, a form of microfinance.

[16]This is in line with the measurement of women's empowerment through deprivations (Alkire et al., 2013). Also, if neither the wife nor husband participates in the decisions then we count the household as missing.

[17]In unreported results we find that this decrease in married women's participation in household decisions from 2007 to 2014 is present regardless of education level, income, or sector or occupation, though the magnitude of the decrease varies.

for each decision area and for two averages of these decision indicators.[18] According to these results, there is a negative and significant effect of the minimum wage on the average that excludes decisions pertaining to children's clothes, education, and health. There is a negative effect of a similar magnitude for the average of these three decisions pertaining to children but it is less precisely estimated. Finally, there is a negative and significant effect of the minimum wage on five of the 14 individual decisions – specifically, decisions regarding providing money to the husband's family, gifts for parties, husband's clothing, money for monthly savings, and children's health. The effect is largest for husband's clothing where a 10 percent increase in the minimum wage is estimated to cause a decrease of 1.6 percentage points in the probability that the wife participates in decisions regarding husband's clothing. Overall, these preliminary results suggest a clear negative effect of the minimum wage on women's bargaining power.

3.2. Main empirical strategy

The fixed effects specification in Table 3 controls for unobserved factors – both district effects and individual characteristics – that may be correlated with minimum wages at the district level. However, one might worry that there are district-specific time trends in household decision making or in the labor market outcomes that we also investigate, that are correlated with district trends in the minimum wage. Indeed, given the way that minimum wages are set as described in Section 2, it seems likely that minimum wage changes are correlated with changes in economic conditions. Therefore we use a strategy, proposed by Magruder (2013), that is based on variation in the minimum wage between nearby districts. Geographically proximate districts that are subject to different minimum wages plausibly have the same, or very similar, local market conditions so we expect trends in outcomes to be roughly the same on average in such districts, absent a difference in the minimum wage.

[18] We estimate separate regressions with each of the decision-making variables as the dependent variable. Each regression controls for household assets belonging to wife and to husband, a dummy variable for urban/rural residence, a quadratic in age, a quadratic in the wife's education, and a quadratic in her husband's education, and each includes both household fixed effects and year fixed effects, and clusters standard errors at the province level.

This is a less stringent version of the common trend assumption required by difference in differences. Rather than requiring all districts to share a common trend, the DSD method only requires nearby districts to have the same trend.

We can observe clear patterns in the relationship between the minimum wage and labor market outcomes and between the minimum wage and women's household bargaining power when comparing nearby districts with different minimum wages. Let $y^*_{ist} = y_{ist} - \frac{1}{n_{st}(\epsilon)} \sum_{i',s':d(s,s')<\epsilon} y_{i's't}$ denote the difference between an outcome for individual i in district s in year t and the average outcome among all other individuals living in a district that is located within ϵ units of district s in year t. Similarly, let $W^*_{st} = W_{st} - \frac{1}{n_{st}(\epsilon)} \sum_{i',s':d(s,s')<\epsilon} W_{i's't}$ denote the "spatial-differenced" minimum wage. Figure 7 plots spatial differences in outcomes as a function of spatial differences in the minimum wage in the year 2000. [19] In panel (a) we see that a higher minimum wage relative to nearby districts ($\epsilon = 25$ miles) is associated with higher wages among women working full time in the formal sector. Panels (b) and (c) show that the higher the minimum wage is in a woman's district relative to the minimum wage in nearby districts the lower her household bargaining power is relative to that of women in nearby districts. While this provides some motivation for our analysis, the DSD identification strategy that we employ also takes advantage of variation over time within each district.

Our main empirical specification for our DSD estimator can be written as

$$y_{ist} = \beta' X_{ist} + \gamma W_{st} + \delta_{st} + \alpha_s + u_{ist}, \tag{1}$$

where y_{ist} is the dependent variable of interest for individual i residing in district s at time t, W_{st} is the log real minimum wage in district s at time t, and X_{ist} is a vector of controls—a quadratic in age, a quadratic in education, the value of the household assets belonging to the wife and to the husband accordingly, and a dummy variable for being in a rural or an

[19] Similar patterns can be seen in 2007 and 2014. These figures are available from the authors upon request.

urban area. The unobservable, $\delta_{st} + \alpha_s + u_{ist}$, consists of α_s, a district fixed effect that can vary discontinuously between spatially proximate districts, δ_{st}, a district-specific time trend that captures time-varying local labor market characteristics that will be assumed to vary smoothly over space, and an idiosyncratic shock, u_{ist}.

The district fixed effect, α_s, is included to control for economic, cultural, and institutional differences across districts that may be correlated with the minimum wage level, or changes in the minimum wage. The district-specific time effects, δ_{st}, more generally allow for selection on changes over time in addition to selection on levels. If changing labor market conditions and/or cultural attitudes, which affect labor market outcomes and household decision making, play a role in the setting of the minimum wage then a difference-in-differences regression estimator with $\delta_{st} = \delta_t$ would be biased. We are particularly concerned about this possibility given that regional minimum wages are set in response to the region's labor market conditions, as described in Section 2.

It is not possible to estimate the model of equation (1) without restrictions on δ_{st} as variation in W_{st} cannot be separated from variation in δ_{st}. Therefore, we assume that for any districts s and s', district-specific time trends are shared as the geographic distance between districts s and s' goes to 0 (that is, $\delta_{st} - \delta_{s't} \to 0$ as $d(s, s') \to 0$ where $d(s, s')$ is a measure of geographic distance.). Thus, identification of γ is based on minimum wage variation between neighboring districts, conditional on individual characteristics. Let $\widetilde{X}_{ist} = (X'_{ist}, d_{i1t}, \ldots, d_{iSt})'$ denote the individual-level covariate vector including district dummies indicating where individual i lived in period t and let $\widetilde{\beta} = (\beta', \alpha_1, \ldots, \alpha_S)'$. Then $\widetilde{\beta}'\widetilde{X}_{ist} = \beta' X_{ist} + \alpha_s$. Then, according to equation (1), the local spatial variation in outcomes can be written as

$$y_{ist} - \frac{1}{n_{st}(\epsilon)} \sum_{i',s':d(s,s')<\epsilon} y_{i's't} = \tilde{\beta}' \left(\widetilde{X}_{ist} - \frac{1}{n_{st}(\epsilon)} \sum_{i',s':d(s,s')<\epsilon} \widetilde{X}_{i's't} \right) \tag{2}$$

$$+\gamma \left(W_{st} - \tfrac{1}{n_{st}(\epsilon)} \textstyle\sum_{i',s':d(s,s')<\epsilon} W_{i's't} \right)$$

$$+\left(\delta_{st}-\tfrac{1}{n_{st}(\epsilon)}\textstyle\sum_{i',s':d(s,s')<\epsilon}\delta_{i's't}\right)$$

$$+\left(u_{ist}-\tfrac{1}{n_{st}(\epsilon)}\textstyle\sum_{i',s':d(s,s')<\epsilon}u_{i's't}\right),$$

where $n_{st}(\epsilon)$ denotes the number of individuals in districts within a distance ϵ of district s in year t. If ϵ is chosen so that the local time trends, δ_{st}, are the same for districts within the radius ϵ then the third term on the right-hand side is negligible and a valid estimator is obtained by estimating a regression in spatial differences of y_{ist} on $\widetilde{X}_{ist}$ and W_{st}. This would be the case, for example, if these districts share endogenous labor market conditions. Alternatively, this can be viewed as a nonparametric estimator, where ϵ is a bandwidth parameter, that will be consistent as long as the local time trends vary continuously across space. This is the difference in spatial differences (DSD) estimator of Magruder (2013), applied to individual level data. It is also similar to the empirical approaches of Goldstein and Udry (2008) and Dube et al (2010).

The DSD method allows for the possibility that changes in minimum wages are correlated with changes in local labor market conditions, which affect other determinants of household decision making on the district level. The DSD method utilizes the relative changes in outcomes in nearby districts where the real minimum wage in one district increases relative to the real minimum wage in neighboring districts. The method cannot, however, account for a discontinuity in the time trend in district level labor market conditions and other determinants of household decision making, as it attributes any such discontinuity in outcomes to the relative change in minimum wage. Our DSD estimates will be biased if such discontinuities are correlated with the relative changes in minimum wages. Nevertheless, the identifying assumption is substantially weaker than in a difference-in-differences approach where it is assumed that all districts have a common trend.

For computing standard errors we follow Magruder (2013). We employ the method of Conley (1999) for clustering at the policy group (province/minimum wage regime) level and

allowing for spatial autocorrelation. Even if there is no spatial autocorrelation in the raw data, it is induced by the spatial differencing if there is not a large number of districts satisfying $d(s, s') < \epsilon$. The somewhat small number of clusters might raise concern over the validity of the standard errors, in which case one can use the t_{G-2} critical values where G denotes the number of clusters. Most of our results are robust to the use of these more conservative standard errors.

3.3. Additional empirical specifications

Despite the appeal of the DSD methodology, there is some criticism that, by focusing on spatially local variation, it uses a set of control observations that are not clearly to be preferred over others (Neumark, Salas, and Wascher, 2014). For example, in 2000 our data contains observations from 222 distinct districts but for only 71 of these districts is there another district within 25 miles with a different minimum wage. Moreover, these 71 districts are located in only 9 out of the 15 total provinces.[20] Therefore, we also present results of two additional empirical specifications. The first is the following household fixed effects specification.

$$y_{ist} = \beta' X_{ist} + \gamma W_{st} + \delta_t + \eta_i + u_{ist} \tag{3}$$

We refer to the within estimator based on this specification as the difference-in-differences (DD) estimator. The second alternative specification is the spatial differencing (SD) estimator based on the specification

$$y_{ist} = \beta' X_{ist} + \gamma W_{st} + \delta_{st} + u_{ist}, \tag{4}$$

The SD estimator is based on the premise that local spatial variation in outcomes must be due to local spatial variation in minimum wages. However, the SD estimator is biased if

[20] At 40 miles, we have 108 districts. Also, in 2014 we use 155 districts out of 274 at the 25 mile radius and 202 at the 40 mile radius.

there are district level fixed effects that are correlated with minimum wages. Such district level fixed effects would not bias the DSD estimator or the DD estimator, however.

4. Results

In this section, we first study the impact of the minimum wage on household decision making. Subsequently, we look at the effect of the minimum wage on labor market outcomes by gender and on individual dimensions of household decision making. Standard models of the household suggest that existing labor market conditions are an important determinant of household decision making processes. The collective model of the household (Browning and Chiappori, 1998) and other cooperative models (Manser and Brown, 1980; McElroy and Horney, 1981; Heath and Tan, 2015) suggest that the minimum wage affects household choices in two ways. First, for households where one or both spouses' (potential) wages are affected by the minimum wage increase, there are the usual substitution and income effects of a wage increase. Second, the minimum wage increase can affect bargaining power within the household. A common explanation for the effect on bargaining power is that bargaining power is determined by threat points, which are defined as the counterfactual utilities the spouses would obtain outside of the marriage. Thus, bargaining power within the household can be affected by a minimum wage increase even if neither the actual work hours nor the wage for either spouse actually changes. The effect on bargaining power is due to the minimum wage's effect on the labor market opportunities *available* to both spouses. By using a proxy for bargaining power in our analysis we are able to directly identify the second impact of the minimum wage on households.

The collective model of the household leads to different predictions regarding household behavior than the unitary model to the extent that the preferences of the husband and wife differ. As a result, many studies have drawn a link between women's household bargaining power and how money is spent in the household. Therefore, we provide further evidence of the effect of the minimum wage on women's household bargaining power by estimating

the effect of the minimum wage on some outcomes that have been previously linked to household bargaining power – expenditure on tobacco and alcohol and children's health. We also estimate the effect on the household's participation in arisans, an Indonesian form of microfinance that women are typically more likely to participate in than men.

4.1. Main results

We now present our main empirical findings. As discussed in Section 3, the DSD estimator we implement is robust to district-specific time effects that are shared by nearby districts, or that vary smoothly between nearby districts, addressing the potential for endogeneity in how minimum wages are determined. However, this method requires specification of a bandwidth, or radius. To explore robustness of our results to the choice of bandwidth, we show results for 25, 30, 35, 40, 60, and 80 miles. Here and in all other DSD results in the paper, we measure the distance between districts using the centroid method.[21] We find that a bandwidth less than 25 miles results in too little spatial variation in the minimum wage.[22]

We first report results for two decision making indices. The first index is the unweighted average of the responses for each of the decision areas, excluding only the three variables pertaining to decisions involving children and the variable regarding decisions regarding whether the woman and/or her husband work. This index measures the proportion of these decisions in which the wife reports participating, and we intepret it as a measure of the wife's bargaining power in the household. The second index that we create is the average of the responses to the three variables for decisions involving children. Averages of household

[21]Geographical coordinates for each district were determined from internet resources. We defined the distance between any two districts separately for each year because the district definitions changed in some cases from 2000 to 2014, primarily due to cases where one district was split into multiple new districts. We mapped district codes over time using resources from BPS.

[22]Magruder (2013) uses bandwidths of 15, 25, and 50 miles. While he does not specify what distance metric he uses, it seems apparent that he uses a method that results in shorter distances between districts, and this is likely why we find less variation at lower bandwidths.

decision-making indicators have been used in other work as proxies for bargaining power. Majlesi (2016), for example, argues that such indices measure which spouse's preferences are reflected in the decisions made by the household so that variation in the index should be interpreted as variation in intrahousehold bargaining power. This could formally be modeled as a threshold-crossing mechanism where the wife reports that she participates in the decision making if her bargaining power exceeds a certain level, where this threshold may vary across decision areas.

Alternative models might suggest more caution in interpretation of the household decision making variables as proxies for bargaining power. For example, suppose that participating in decision making entails some cost. Then the wife may be more likely to make, or participate in, a decision if making the decision is less costly to her than it is to her husband, either because she has expertise that he lacks or because making the decision involves a time cost and her market wage is lower. According to such a model, if a woman's time spent in household production increases, we might expect to see simultaneously an increase in the wife's role in decision making, at least in some decision areas, and a decrease in her bargaining power.

Results for the two decision making indices are reported in Table 4. In this table we report DD and SD estimates alongside estimates from our preferred DSD specification. For the SD and DSD estimates we use a bandwidth of 25 miles. First, there is a positive and statistically significant effect of wife's assets and education level and either a negative or statistically insignificant effect of husband's assets and education level. This is consistent with the interpretation that the wife is more likely to be involved in decision making the greater her intrahousehold bargaining power is. Bargaining power is determined by the wife's threat point or outside option relative to her husband's, and her threat point is positively affected by her assets and education level and her husband's threat point is positively affected by his assets and education level.

Second, in our preferred specification in column 3, there is a negative and statistically

significant effect of the minimum wage on the wife's decision making. A ten percent increase in the minimum wage is associated with a 0.9 percentage point decrease in the proportion of decisions in which the wife participates. Relative to a mean of 89 percent of decisions where the wife is involved, this is an economically significant effect given that yearly changes in the minimum wage in Indonesia can be larger than ten percent in some cases over this time period. The estimate from the DD specification, in column 1, is also negative and marginally significant but smaller in magnitude. The SD estimate is statistically and economically insignificant, suggesting district level fixed effects in decision making that are still correlated with minimum wage *levels* after the spatial differencing procedure. The results in columns (4)-(6) show similar results for women's participation in household decisions involving children. Overall, these results provide compelling evidence that women see a decrease in bargaining power when the minimum wage increases.

4.1.1 Labor market outcomes by gender

We next look at the effect of the minimum wage on labor market outcomes for the same sample of married heads of household and their spouses. The reason for our focus on labor market outcomes in this section is two-fold. The first reason is to find evidence that men's outside options increase relative to their wives' outside options when the minimum wage increases. The second reason is to provide further evidence regarding the effect of the minimum wage on gender equity and women's empowerment. As we are interested in the effect of the minimum wage on all households, the sample includes not only formal sector workers who work full-time, it also contains individuals who are part-time workers, self-employed, family workers, or not working.

The results for labor market outcomes from the DSD specification are reported in Tables 5 and 6. Columns (1) and (5) in Table 5 report estimates from specifications where we restrict the sample to individuals working full time in the formal sector who report a wage income. For both men and women, we find a statistically significant effect that is robust to

different bandwidths. For a 10 percent increase in the minimum wage, wages for full time formal sector workers increase by between 4 percent and 12 percent for women and between 5.5 percent and 11 percent for men. At the higher end, these effects are substantially larger than estimates of the effect of the minimum wage on wages in Hohberg and Lay (2015) and Hallward-Driemeier et al. (2015) though they are more in line with estimates of wage effects in Magruder (2013). We cannot conclude from these estimates whether the effect of the minimum wage on wages is higher for men or women because the difference in the coefficients is not significant and its sign is not robust to changing the bandwidth used.[23]

There is no significant effect for total incomes (where we include observations with zero earned income as zeros) for men or women. Nor is there a significant effect on whether individuals work or their hours worked. Also, the final column of the table shows that the effect of the minimum wage on the difference between the income of the husband and wife is not statistically significant.[24] However, the results in Table 6 suggest important effects of the minimum wage on the type of work done by men and women. In particular, a minimum wage increase raises the probability of full time formal sector work and decreases the probability of working in the informal sector for men. By contrast, neither of these effects is significant for women. Instead there is a statistically significant increase in part time formal sector work and unpaid family work for women, both types of work that are not subject to the minimum wage. Thus, our results suggest that the formalization of the labor market in response to minimum wage increases that is documented by Magruder (2013) benefits men more than women.

Overall, these findings are weakly consistent with the hypothesis of an increase in labor market opportunities for men relative to women. While wages increase for both men and women, opportunities to benefit from the increased minimum wage increase more for men

[23]Note, however, that the fixed effects estimate in Table 18 is larger for men than for women.

[24]The results reported in this column come from DSD regressions using the difference between the husband's log income and the wife's log income as the dependent variable and including all controls used in either the husband sample or wife sample regressions. Interestingly, we find a positive and statistically significant effect on this difference using the DD method. See Table 18.

than for women. When considering the whole sample, however, there is not a significant effect on earned income. Nevertheless, the results are only suggestive given that labor supply decisions within marriage may differ from labor supply decisions under the "outside option", or threat point. The results do indicate that gender equity among married couples may be negatively affected in some ways by the minimum wage, despite findings elsewhere that the wage gap narrows. The increase in unpaid family work done by women is particularly concerning.

Next, we can investigate the mechanism through which minimum wage increases reduce women's household bargaining power by controlling for these labor market outcomes. If the decrease in bargaining power is purely a result of changes in households' labor market outcomes then we would expect that controlling for these labor market outcomes would reduce the negative bargaining power effect. That is, if women lose bargaining power because they earn less relative to their husbands or because they are more likely to only be engaged in part time work or unpaid family work then we should find that there is no effect of the minimum wage on bargaining power (or at least a much smaller effect) after controlling for income and labor market participation status of both the woman and her husband. On the other hand, if bargaining power is determined by potential labor market opportunities then the negative bargaining power effect will remain after including labor market outcomes as controls.

Table 7 reports our results that include labor market outcomes as controls. The outcomes controlled for include the husband's income, the wife's income, and indicators for whether the husband is a full time formal sector employee, whether the husband works primarily in the informal sector, whether the wife is engaged primarily in unpaid family work, and whether the wife works part time in the formal sector. For comparison, we have included the results that do not include these controls in this table as well. These estimates, reported in column (1), differ slightly from those reported in Table 4 because we have limited the sample for all results in Table 7 to those households that have non-missing values for all of

the additional control variables.

Comparing columns (2) and (5) with columns (1) and (4), we see that controlling for the husband's and wife's earned income reduces the magnitude of the estimated coefficient on the minimum wage by less than 10%. The wife's earned income has a positive effect and the husband's earned income has a negative or insignificant effect on the two measures of bargaining power. In columns (3) and (6) we see that additionally controlling for the type of work done by both spouses has a much smaller effect on the coefficient on the minimum wage. Overall, the results in Table 7 support the hypothesis that the impact of the minimum wage on household bargaining power operates through its effect on the husband's and wife's "outside options", that is, their potential, not realized, labor market opportunities. This is also consistent with a similar finding in Majlesi (2016).

4.1.2 Women's intrahousehold decision making power

As discussed above, the results in Table 4 show that women are involved in fewer household decisions as the minimum wage increases. In this section, we explore which decision areas they are less likely to be involved in. For each decision area, our dependent variable is a dummy variable indicating whether the respondent reports that she plays a role in decisions in this area. These results improve on the preliminary results in Table 3 by applying the DSD methodology to account for the potential endogeneity of the minimum wage.

Tables 8 and 9 report our results for each decision area, as well as the two average bargaining power measures. First, we find that the estimates reported in Table 4 for the average bargaining power measures using a 25 mile bandwidth are fairly robust to the bandwidth choice, particularly the average that excludes decisions regarding children. Furthermore, we find that coefficient estimates for many individual decision areas are consistent with these estimated effects on the two average measures. At the 25 mile bandwidth, point estimates of the effect of the minimum wage are between -.06 and -.17 for 9 out of the 14 different decision areas. However, these effects are estimated much less precisely than the effect on the

average bargaining power measure, likely due to heterogeneity across households in which types of decisions are affected. Note, however, that the negative estimated effect of the minimum wage on women's involvement in decisions regarding routine purchases is large, statistically significant, and robust across different bandwidths. A 10 percent increase in the minimum wage is estimated to lead to between a 0.4 and 1.6 percentage point decrease in the probability that the wife is involved in decisions regarding routine purchases. The statistical significance of these results is robust to a correction for the multiple testing problem to control the expected proportion of rejections that are false (i.e., the false discovery rate).[25]

4.1.3 Heterogeneous effects

The theoretical framework discussed at the beginning of Section 4 suggests that the effects of the minimum wage on women's bargaining power will likely vary in the population according to how much the relative outside options of the wife and husband in a particular household are affected. In particular, the negative effect of the minimum wage on women's household bargaining power is expected to be larger in households where the husband is more likely to benefit from the minimum wage increase and the wife's "threat point" is less likely to be affected. For example, more educated women in Indonesia are much more likely to be employed in the formal sector than less educated women, and often in jobs where the wage is not much higher than the minimum wage. Thus, if the wife is more educated then, all else equal, her labor market opportunities are more likely to expand as the minimum wage increases and hence she is less likely to lose bargaining power. We also expect the minimum wage to affect households differently depending on what sector the husband and wife work in, as Magruder (2013) found differential effects on labor market outcomes by sector. In this section we test these hypotheses by estimating DSD regressions on different subsamples

[25] In Tables 8 and 9 and all subsequent tables in the paper that report regression estimates with the individual decision indicators as dependent variables, we report adjusted p-values that were constructed using the Benjamini and Hochberg (1995) method for controlling the false discovery rate (FDR). For each bandwidth we order the 14 p-values from the different decision areas, $p_{(1)} < ... < p_{(14)}$ and then calculate $p_{(i)}^{adj*} = \frac{14}{i} p_{(i)}$. The adjusted p-values that we report are $p_{(i)}^{adj} = min_{j \geq i} p_{(j)}^{adj*}$. In all tables in the paper, asterisks denote significance based on *unadjusted* p-values.

based on education of the wife, sector of the wife and husband, and employment status of the wife.

Table 10 reports results by the wife's education. We split the sample into households where the wife has less than a high school education ("less educated") and households where the wife has a high school education or more ("more educated"). We find a clear pattern of negative, statistically significant and robust effects on bargaining power for less educated women. For more educated women, the estimated effects are still negative but are generally smaller and only statistically significant at the 25 mile bandwidth. There is weaker evidence of a similar pattern for decisions regarding children. These results suggest that the relative marital threat point of more educated women does not decrease as much with the minimum wage as it does for less educated women. Consistent with this, we find in Table 11 that there is an increase in unpaid family work for less educated women but not for more educated women and an increase in earned income, in whether she works, and in part time formal sector work for more educated women but not for less educated women. However, the effect of the minimum wage on labor market outcomes of the more educated women still differs from what we found in Tables 5 and 6 for men. This provides a potential explanation for why we still find some evidence of a loss of bargaining power for more educated women in Table 10.

Tables 12 and 13 report results by the sector in which the wife and husband work. Among women who report working, 97% work in agriculture, manufacturing, retail, or services. Among men who report working, 82% work in one of these sectors. In Table 12 we find that the negative effect of the minimum wage on married women's bargaining power is strongest for women who work in services and retail. In Table 13 we find the effect to be strongest for women whose husbands work in services and, to some extent, agriculture. Finally, Table 14 shows results by the type of work done by the wife, or if she works. We find a negative and statistically significant effect of minimum wage on bargaining power among women who work in the informal sector. We also find negative effects for women who work full-time

in the formal sector and women who primarily engage in unpaid family work. One should interpret the results in Tables 12-14 with caution, however, because many individuals in our sample move from sector to sector, in and out of the labor force, and between the formal and informal sector across the three waves that we study. As a result, sectoral choice and employment status are both endogenous. In fact, we have already seen in Table 6 that employment status is an important outcome of the minimum wage. Angrist and Pischke (2008) argue that controlling for an endogenous outcome can often lead to substantial bias of causal estimates. Women's education, on the other hand, is not an endogenous outcome.[26]

4.1.3 Other outcomes

If women's household bargaining power decreases when the minimum wage increases, all else equal, then we should expect to also see an effect of the minimum wage on household outcomes over which men and women have different preferences on average. In this section we report results on household expenditure on tobacco and alcohol, the household's monthly contribution to an arisan, and the health of their children. Overall, we find that the results support our main finding that the minimum wage causes a loss of women's household bargaining power, particularly among less educated women.

Because tobacco and alcohol are consumed primarily by men in Indonesia we expect a reduction in women's household bargaining power to be associated with increased expenditure on tobacco and alcohol. Alcohol and tobacco expenditure has previously been used as a measure of women's bargaining power by Attanasio and Lechene (2002) and Altindag and Ziebarth (2019). In column (1) of Table 15 we see that a 10% increase in the minimum wage increases expenditure on tobacco and alcohol by 1-2% on average. Column (2) shows that expenditure on alcohol and tobacco also increases as a share of total food expenditure. Moreover, columns (1)-(2) and (7)-(8) in Table 16 show that the estimated effects are driven entirely by less educated women, the same group for which we found stronger evidence of a

[26]Because of the age of the women in our sample, educational attainment changes for very few respondents over the three waves that we study.

negative effect on bargaining power in Table 10. For more educated women the estimates are negative, though not statistically significant, at all but the 80 mile bandwidth.

Next, we look at contributions to an arisan. The arisan is a method of savings for Indonesian households, a form of microfinance that does not involve a bank. Participation involves attending social gatherings among members of the arisan. Membership in arisans is more common among women than men. Therefore, if women lose household bargaining power we expect their household's monthly contribution to arisans to decrease, all else equal. Thus, our finding in column (3) of Table 15 that the minimum wage has a negative and significant effect on monthly arisan contributions is also consistent with a negative effect of the minimum wage on women's household bargaining power. A 10% increase in the minimum wage causes a 2-6% decrease in money contributed to arisans on average. Column (4) shows that there is also a negative effect of the minimum wage on household contributions to arisans as a share of the total non-food expenditure.[27] Columns (3)-(4) and (9)-(10) in Table 16 show a stronger effect for less educated women and a positive, though not statistically significant, effect for more educated women, despite the fact that more educated women do not contribute less to arisans than less educated women.

Finally, columns (5) and (6) in Table 15 report the estimated effect of the minimum wage on children's health. Each woman in the sample reports whether each of her children has been sick in the past 4 weeks. We calculate the average response for girls and boys separately for each woman and use these measures as the dependent variable. The table shows weak evidence that the minimum wage has a positive effect on this measure for girls overall. The magnitude of the effect is fairly consistent across different bandwidths but the estimates are significant only at bandwidths of 40 and 60 miles. For boys there is no significant effect. This finding is also consistent with a loss of women's bargaining power as the literature has shown that increases in women's bargaining power is associated with improvements in children's

[27]In calculating these shares, the denominator includes all reported yearly expenses on non-food items, including contributions to arisans. Arguably this should not be called "expenditure" if contributions to an arisan are a type of savings.

outcomes, and in some cases greater improvements in girls' outcomes. Moreover, Table 16 shows that this effect is primarily concentrated among less educated women.

4.2. Robustness

In this section we provide several robustness checks for our main results. First, we show results using the husbands' responses to the survey items regarding household decision making. Second, we report results from the DD and SD model specifications. Third, we report results obtained using a different approach for combining the decision making data into a series of indicators for bargaining power.

4.2.1 Results from husbands' responses

In our sample both the head of household and their spouse respond to the majority of the survey items regarding household decision making. Therefore, we are also able to observe who makes decisions in the household according to the husband. Across the 14 decisions areas, the husband and wife agree regarding whether the wife plays a role in making decisions in roughly 70-90% of households. While using women's responses to these survey items is a better way to measure women's empowerment it is still of interest to see whether our results hold up when using the husbands' responses.

Therefore, we present results regarding married women's participation in various decisions as reported by their husbands in Tables 17 and 18. The results are qualitatively similar to those found using the women's responses. We find statistically significant effects for decisions regarding large expenses, gifts for parties, routine purchases, and money for monthly savings. Similar to the results using women's responses to the survey items we also find consistently negative coefficient estimates for the decisions regarding children though they are not precisely estimated. The two biggest differences are the large effects for decisions regarding monthly savings and the absence of a statistically significant effect regarding contraception.

4.2.2 DD and SD results

We also estimate DD, or fixed effects, models and spatial differencing (SD) models, as described in Section 3.3. Both Dreimeier et al. (2015) and Hohberg and Lay (2016), in their studies of the minimum wage in Indonesia, estimate specifications similar to our DD model. As noted above, this method fails to account for correlation between changes in minimum wages and local labor market dynamics but does not require the specification of a bandwidth parameter as the DSD estimator does. The DD method also avoids the criticism of spatial methods that they reduce the variation to a set of observations that can be misrepresentative of the population in important ways.

In Tables 19 and 20 we report results for labor market outcomes for men and women. In columns (1) and (5) we find a statistically significant positive effect on wages for both women and men who work full time in the formal sector with both the DD and SD methods. The DD estimates are smaller in magnitude than the DSD estimates and the SD estimates are generally larger than the corresponding DSD estimates. We find the same basic pattern for log earned income among all women and all men in columns (2) and (6), and for formal sector and informal sector employment among men in columns (8) and (10) of Table 20. For women, we do not find the same positive and significant effects of the minimum wage on part time formal sector employment and unpaid family work with the SD method that we found with the DSD method. Overall, the DD estimates are more in line with the DSD estimates than the SD estimates are, suggesting important district-specific effects. However, the results in Tables 19 and 20 still show, in general, a labor market environment that responds to minimum wage increases more favorably for men than for women.

Next, Tables 21 and 22 report the results of the DD and SD regressions for the household decision indicators. The DD results, which were also reported in Table 3, are largely consistent with a negative effect of the minimum wage on women's household bargaining power. On the other hand, many of the SD coefficient estimates are positive, though few are statistically significant. The most prominent exception is for decisions regarding routine

purchases where the SD estimates are negative and statistically significant at the 25 and 30 miles bandwidths. The discrepancy between the DSD and SD results suggests unobserved district effects that are positively correlated with the minimum wage and positively affect women's household bargaining power. Specifically, women who live in districts that have higher minimum wages than nearby districts also tend to play more of a role in some household decisions. This is perhaps because the minimum wage is higher in more economically developed districts and this greater level of economic development to some extent has a positive influence on women's empowerment.

4.2.3 Redefinition of decision indicators

As part of the IFLS survey, the head of each household and their spouse were asked who within the household participates in each type of decision. Respondents were allowed to indicate multiple people for a given decision type. Potential answers were the head, the spouse, and other members of the household. So far in the analysis we have converted this data to a single indicator for each type based on whether the wife participates or not. We can also define an indicator based on whether the husband participates in the decision. For each decision area, we define an indicator equal to 1 if the husband participates in the decision and 0 otherwise. To be consistent with the previous results we would expect the minimum wage effects to be positive, meaning that a minimum wage increase leads to more participation of the husband, as the wife's bargaining power decreases.

However, there are several reasons why a negative effect would not necessarily be inconsistent with our main conclusion that the minimum wage has a negative effect on women's bargaining power. Defining the decision-making indicators in terms of whether the husband participates in decisions means that each indicator measures whether the woman is the sole decision maker, with a value of 0 indicating she is the sole decision maker and a value of 1 indicating that she is not the sole decision maker. Therefore, a negative effect with our preferred definition and a negative effect with the definition used in this section would in-

dicate that an increase in the minimum wage leads to more households where the husband alone makes the decisions, more households whether the wife alone makes decisions and fewer households where they both participate in the decision making. Thus, this would still be consistent with a loss of bargaining power for women in some, though not all, households.

The difference between our preferred measure and the one used in this section can also be viewed as the difference between a deprivations approach and an attainment approach to measuring women's empowerment (Alkire et al., 2013; Bobic, Foster and Smith, 2019). Our preferred method measures whether the wife is deprived of decision making, and the method in this section measures attainment of decision making power. The deprivation approach has a strong foundation and rich tradition in social welfare measurement study. It should also be noted that, given that in most parts of Indonesia a patriarchal, or male-dominant, society has traditionally prevailed, women's and men's roles in the household should not be interpreted symmetrically. In most cases, if the wife is the sole decision maker regarding a certain type of decision this likely does not indicate that the husband is deprived of bargaining power in the same way that a woman is deprived if her husband is the sole decision maker. Nevertheless, if the number of households where women are the sole decision makers for a given decision area increases this would surely, all else equal, be positive for women's empowerment.

Tables 23 and 24 report results from the DD and DSD specifications for each decision type. For the decision areas where we find the strongest evidence of a negative effect of the minimum wage on women's bargaining power in Tables 8 and 9 – large expenses, routine purchases, and children's health – the coefficient estimates in Tables 23 and 24 using the redefined indicators are generally positive, though in most cases not precisely estimated. For these decision areas then we can conclude that there is an unambiguous negative effect of the minimum wage on women's household bargaining power. This is also true for the bargaining power measure that averages decisions regarding children (in column 7 of Table 24). By contrast, however, we find some other decision areas where the estimates using the redefined indicators are negative and, in some cases, statistically significant, indicating that

husbands lose a role in decision making in these areas when the minimum wage increases. This is most clear for decisions regarding gifts for parties and money for monthly savings. Contraception is the only decision area where we find negative and significant estimates in both sets of results, indicating a heterogeneous effect where men gain sole decision making in some households and women do in other households.[28] Overall, while these results provide some nuance regarding the nature of the effects of the minimum wage on household decision making, they do not negate our main findings.

5. Conclusion

This paper demonstrates the potential of important unintended consequences of minimum wage policies in developing countries. Using unique historical minimum wage increases in Indonesia from 2000 to 2014 and an individual panel on labor market outcomes and detailed information on household decision making, we have shown a clear link between a higher minimum wage and a diminished role of women in household decisions. Our empirical results are consistent with the hypothesis that a minimum wage increase in this population on average reduces the marital threat point of married women, thus diminishing their bargaining power. We also find that the minimum wage increases expenditure on tobaccco and alcohol, reduces contributions to arisans, and negatively affects children's health, consistent with a reduction in women's bargaining power. Importantly, we find that these negative effects are concentrated primarily among less educated women.

Though minimum wage laws have been widely implemented in developing countries, few other papers have demonstrated their impact on household decision making or women's empowerment. Given the evidence in this paper and the theoretical importance of the labor market environment in household decision making processes, particular attention should be

[28] At 25 and 30 mile bandwidths, the negative coefficient on contraception is so large that the average bargaining power measure in column (2) of Table 24 shows negative and significant estimates as well. If contraception is excluded from the average, the result is not statistically significant at any bandwidth.

paid to the effects of labor market policies on women's bargaining power within the household and other issues of gender equity. In developing countries like Indonesia with a large informal sector and a much lower rate of employment of women in the formal sector than of men, these policies may reduce female bargaining power and reinforce traditional gender roles.

References

Aizer, A., 2010. "The gender wage gap and domestic violence." *American Economic Review*, 100(4), pp.1847-59.

Alaniz, E., Gindling, T. and Terrell, K, 2011. "The impact of minimum wages on wages, work and poverty in Nicaragua," *Labour Economics*, 18, Supplement 1: S45-S59.

Alkire, S., R. Meinzen-Dick, A. Peterman, and A. Quisumbing, 2013. "The women's empowerment in agriculture index." *World Development*, 52: 71-91.

Allendorf, K., 2007. "Do women's land rights promote empowerment and child health in Nepal?" *World Development* 35, no. 11: 1975-1988.

Alatas, V., and Cameron, L. A., 2008. "The effect of minimum wages on employment in a low-income country: a quasi-natural experiment in Indonesia." *Industrial & Labor Relations Review* 61, no. 2 : 201-223.

Altindag, D. and Ziebarth, N. 2019. "Women's bargaining power and the pill." Working paper, Auburn University.

Anderson, S., and Eswaran, M. 2009. "What determines female autonomy? Evidence from Bangladesh." *Journal of Development Economics* 90, no. 2: 179-191.

Angrist, J.D. and Pischke, J.S., 2008. *Mostly harmless econometrics: An empiricist's companion.* Princeton university press.

Antman, F. M., 2014. "Spousal employment and intrahousehold bargaining power." *Applied Economics Lett*ers 21, no. 8: 560–563.

Ashraf, N., 2009. "Spousal control and intra-household decision making: an experimental study in the Philippines." *American Economic Review* 99, no. 4: 1245-77.

Ashraf, N. , Field, E., Lee J, 2014. "Household Bargaining and Excess Fertility: An Experimental Study in Zambia." *American Economic Review* 104, no. 7: 2210-37.

Atkin, D., 2009. "Working for the future: Female factory work and child health in Mexico." Working paper, Yale University.

Attanasio, O. and Lechene, V. (2002). "Tests of income pooling in household decisions." *Review of Economic Dynamics* 5, no. 4: 720-748.

Basu, Arnab K., Chau, Nancy H. and Ravi Kanbur, 2010. "Turning a Blind Eye: Costly Enforcement, Credible Committment, and Minimum Wage Laws," *Economic Journal* 120, no. 543: 244-269.

Benjamini, Y., and Hochberg, Y. 1995. "Controlling the false discovery rate: a practical and powerful approach to multiple testing." *Journal of the Royal Statistical Society: Series B (Methodological)* 57, no. 1: 289-300.

Blau, F.D. and Kahn, L.M., 2003. "Understanding international differences in the gender pay gap." *Journal of Labor Economics*, 21(1), pp.106-144.

Bobic, V., Foster, J. and Smith, S., 2019. "Women's Economic Empowerment: A Multidimensional Approach to Measurement and Policy Analysis with Applications in Senegal and Uganda," Working paper, Institute for International Economic Policy.

Botero J, Djankov S, La Porta R, Lopez-de-Silanes F, Shleifer, A., 2004 "The regulation of labor.", *The Quarterly Journal of Economics* 119, no. 4: 1339-1382.

Browning, M., Chiappori, P.-A., 1998. "Efficient intra-household allocations: a general characterization and empirical tests." *Econometrica* 66, no. 6: 1241–1278.

Comola, M and L. de Mello, 2011. "How Does Decentralized Minimum Wage Setting Affect Employment and Informality? The Case of Indonesia." *Review of Income and Wealth* 57, no. S1: 79-99.

Congressional Budget Office, 2014. "The effects of a minimum-wage increase on employment and family income."

Conley, T.G., 1999. "GMM estimation with cross-sectional dependence." *Journal of Econometrics* 92, no. 1: 1–45.

DeBrauw, A., Gilligan, D.O., Hoddinott, J., Roy, S., 2014. "The impact of Bolsa Familia on Women's decision-making power." *World Development* 59 (July) : 487-504

Del Carpio, X., Nguyen, H., Pabon, L., Choon Wang, L., 2015. "Do minimum wages affect employment? Evidence from the manufacturing sector in Indonesia." *IZA Journal of Labor and Development* 4:17.

Doss, Cheryl R. 2001a. "Designing Agricultural Technology for Women: Lessons from twenty –five years of experience." *World Development* 29, no. 12: 2075-2092.

Dube, A., T. William Lester, and M. Reich, 2010. "Minimum wage effects across state borders: Estimates using contiguous counties." *Review of Economics and Statistics* 92(4): 945–64.

Duflo, E., 2003. "Grandmothers and granddaughters: old-age pensions and intrahousehold allocation in South Africa." *The World Bank Economic Review*, 17(1), pp.1-25.

Duflo, E., 2012. "Women empowerment and economic development." *Journal of Econonomic Literature* 50, no. 4: 1051–1079.

Duflo, E., Chattopadhyay, R., 2004. "Women as policy makers: Evidence from a randomized policy experiment in India." *Econometrica* 72, no. 5: 1409-1443.

Friedberg, L. and Webb, A., 2006. "Determinants and consequences of bargaining power in households" Working paper #12367, National Bureau of Economic Research.

Goldstein, M., Udry, C., 2008. "The Profits of Power: Land Rights and Agricultural Investment in Ghana." *The Journal of Political Economy* 116, no. 6: 921–1022.

Hallward-Driemeier, M., Rijkers, B., Waxman, A., 2015. "Can minimum wages close the gender wage gap?" *The Review of Income and Wealth* 63, no. 2: 310-334

Harrison, A., Scorse, J., 2010. "Multinationals and Anti-Sweatshop Activism." *The American Economic Review* 100, no. 1: 247–273.

Heath, R. 2014. "Women's Access to Labor Market Opportunities, control of Household Resources, and Domestic Violence: Evidence from Bangladesh." *World Development* 57 (May): 32-46.

Heath, R. and Tan, X., 2015. "Intrahousehold bargaining, female autonomy, and labor supply: Theory and evidence from India." Working paper, University of Washington.

Hohberg, M., Lay, J., 2015. "The impact of minimum wages on informal and formal labor market outcomes: evidence from Indonesia." *IZA Journal of Labor and Development* 4: 14.

Jensen, R., 2012. "Do labor market opportunities affect young women's work and family decisions? Experimental evidence from India." *Quarterly Journal of Economics*. 127, no. 2: 753–792.

Kim, J., 2019. "Minimum Wage, Informality and Non-Compliance". Working paper, George Washington University.

Kleemans, M. and Magruder, J., 2018. "Labour market responses to immigration: Evidence from internal migration driven by weather shocks." *The Economic Journal*, 128(613), 2032-2065.

Lemos, Sara, (2009). "Minimum wage effects in a developing country." *Labour Economics*, 16, issue 2, p. 224-237

Lundberg, S.J., Pollak, R.A., 1994. "Noncooperative bargaining models of marriage." *American Economic Review* 84, no. 2: 628–642.

Magruder, J.R., 2013. "Can minimum wages cause a big push? Evidence from Indonesia." *Journal of Development Economics*, 100(1), pp.48-62.

Majchrowska, A. and P. Strawinski, 2018. "Impact of minimum wage increase on gender wage gap: Case of Poland." *Economic Modelling*, 70, 174-185.

Majlesi, K., 2016. "Labor market opportunities and women's decision making power within households." *Journal of Development Economics* 119: 34-47.

Manser, M. and M. Brown, 1980. "Marriage and Household Decision-Making: A bargaining analysis." *International Economic Review* 21, no. 1: 31-44.

McElroy, M. B. and M.J. Horney, 1981. "Nash-Bargaining household decisions: Toward a Generalization of the Theory of demand." *International Economics Review* 22, no. 2: 333-349.

Neumark, D., Salas, J.I. and Wascher, W., 2014. "Revisiting the minimum wage—Employment debate: Throwing out the baby with the bathwater?" *ILR Review*, 67(3), pp.608-648.

Neumark, D., Schweitzer, M. and Wascher, W., 2004. Minimum wage effects throughout the wage distribution. *Journal of Human Resources*, 39(2), pp.425-450.

Neumark, D. and Wascher, W., 2015. The effects of minimum wages on employment. *FRBSF Economic Letter*, 2015, p.37.

Osmani, Lutfun N. Khan. 2007. "A breakthrough in women's bargaining power: the impact of microcredit." *Journal of International Development* 19, no. 5: 695-716.

Pollak, R. A., 2005. "Bargaining power in marriage: earnings, wage rates and household production." NBER Working Paper 11239.

Qian, N., 2008. "Missing Women and the Price of Tea in China: The Effect of Sex-Specific Earnings on Sex Imbalance." *The Quarterly Journal of Economics* 123, no. 3: 1251-1285.

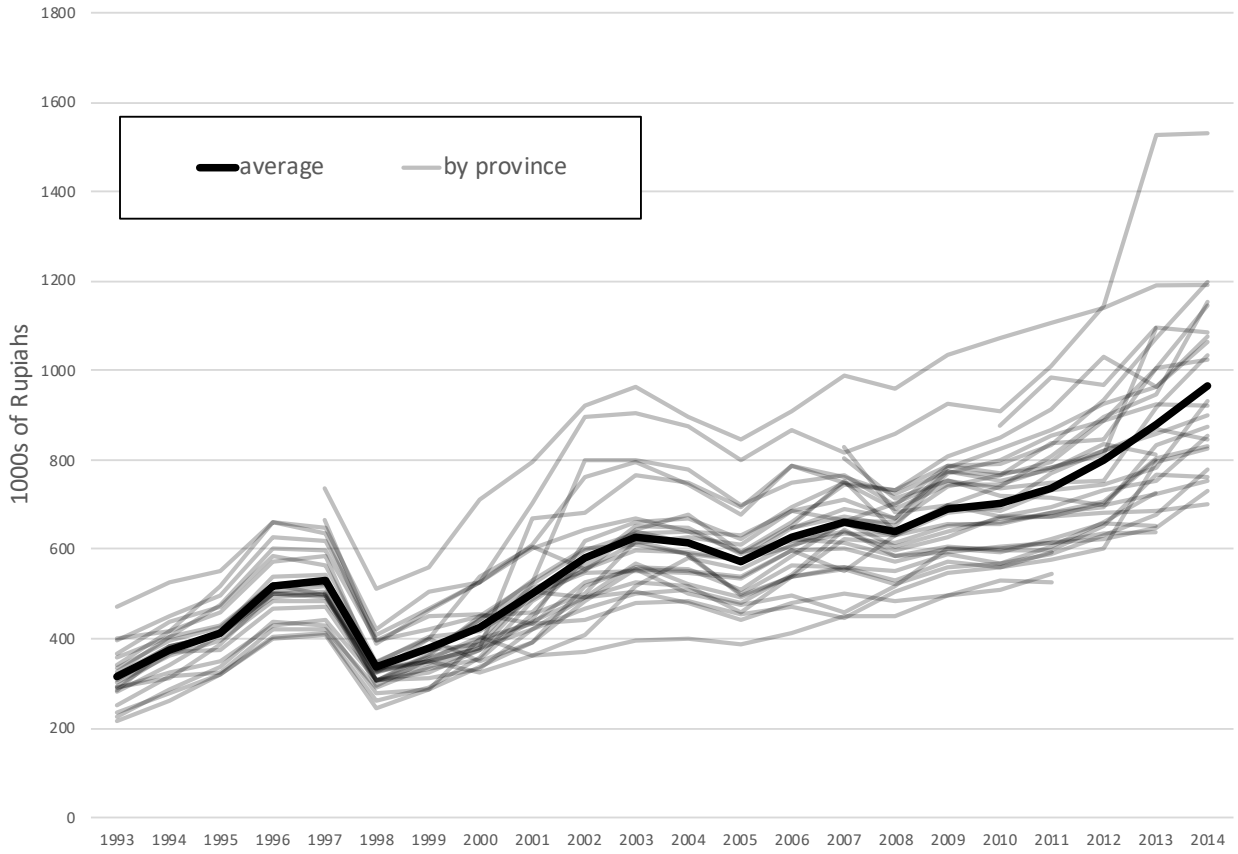
Rama, M., 2001. "The consequences of doubling the minimum wage: the case of Indonesia." *Industrial & Labor Relations Review* 54, no. 4: 864–881.

Rubery, J., Grimshaw, D., 2011. "Gender and the Minimum Wage." In Regulating for Decent Work, ed. Lee, S. and McCann, D.

Schaner, S., Das, S., 2016. "Female labor force participation in Asia: Indonesia Country Study." Working paper 474, Feb 2016, ADB, Manila.

Suryahadi, A., Sumarto, S. and Pritchett, L., 2003. "Evolution of poverty during the crisis in Indonesia." *Asian Economic Journal*, 17(3), pp.221-241.

Figure 1: Real minimum wage by province



Notes: We use a province-specific CPI to deflate minimum wages. Both the CPI and the province level minimum wages are from the Indonesia's Central Bureau of Statistics (BPS). The BPS provides a CPI for different cities across the country. We match the CPIs of the capital city with each province to create a CPI measure for each province in each year. Each gray line represents a different province and the black line is the simple average across all provinces for each year. The base year for deflating with the CPI is 2007.

Figure 2: Nominal minimum wages by district in 2000

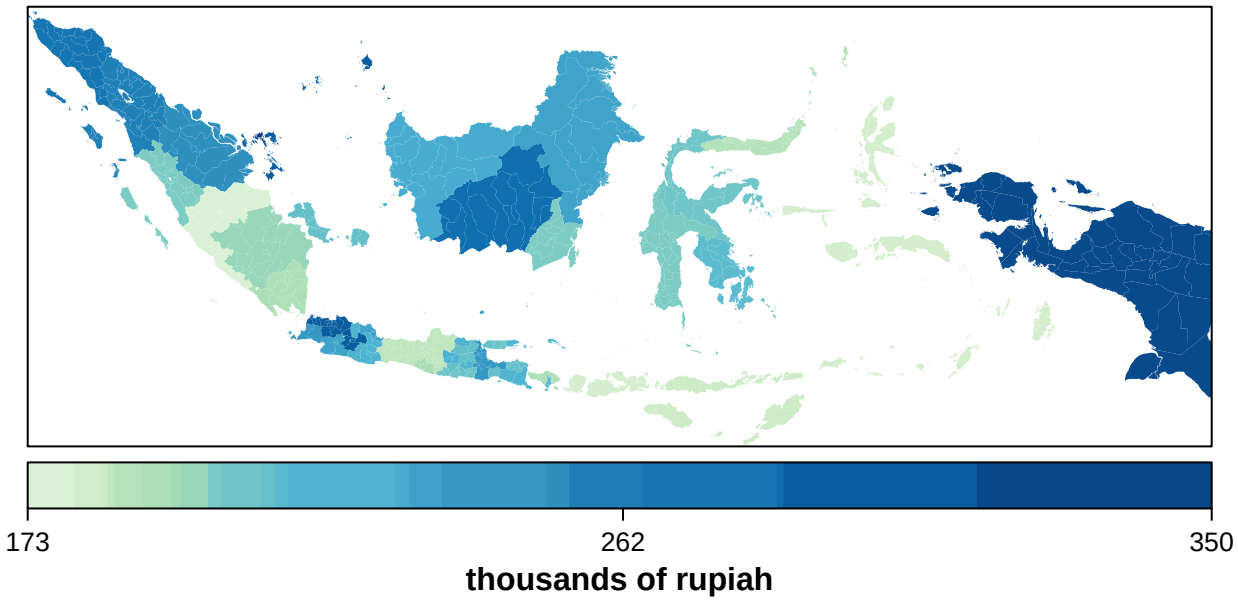


Figure 3: Nominal minimum wages by district in 2007

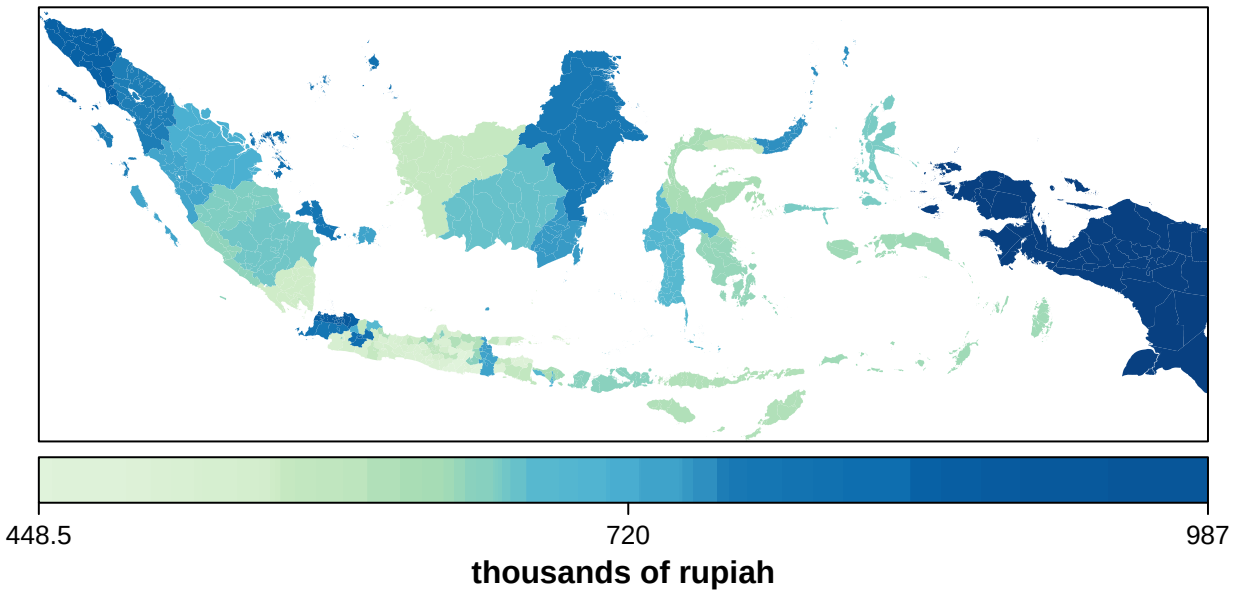


Figure 4: Nominal minimum wages by district in 2014

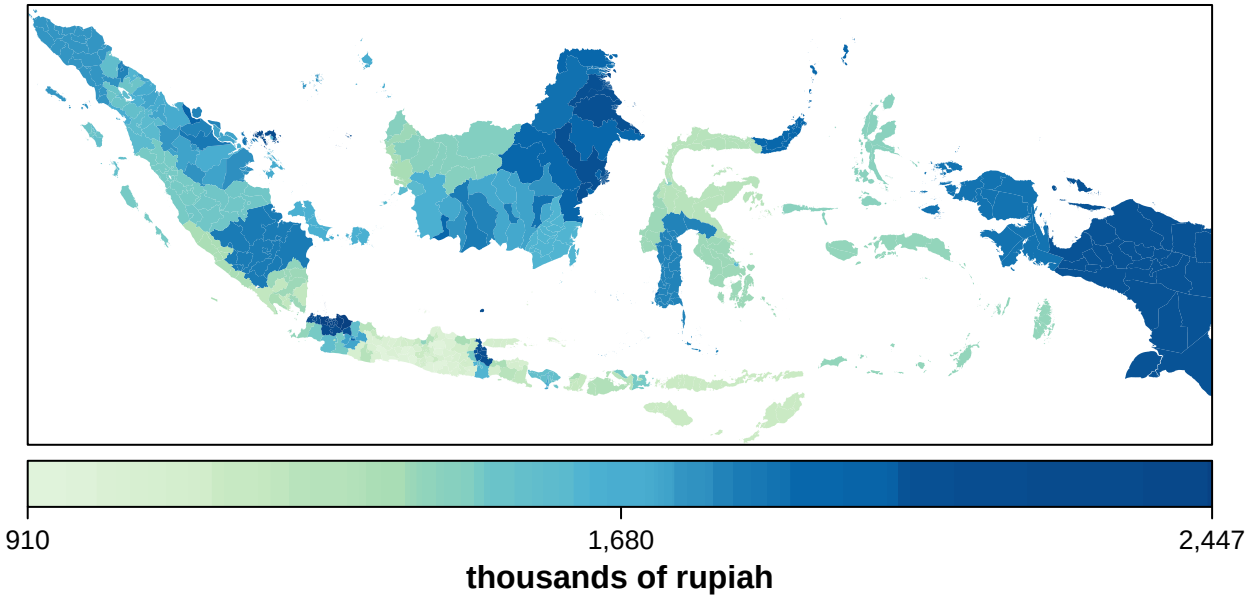
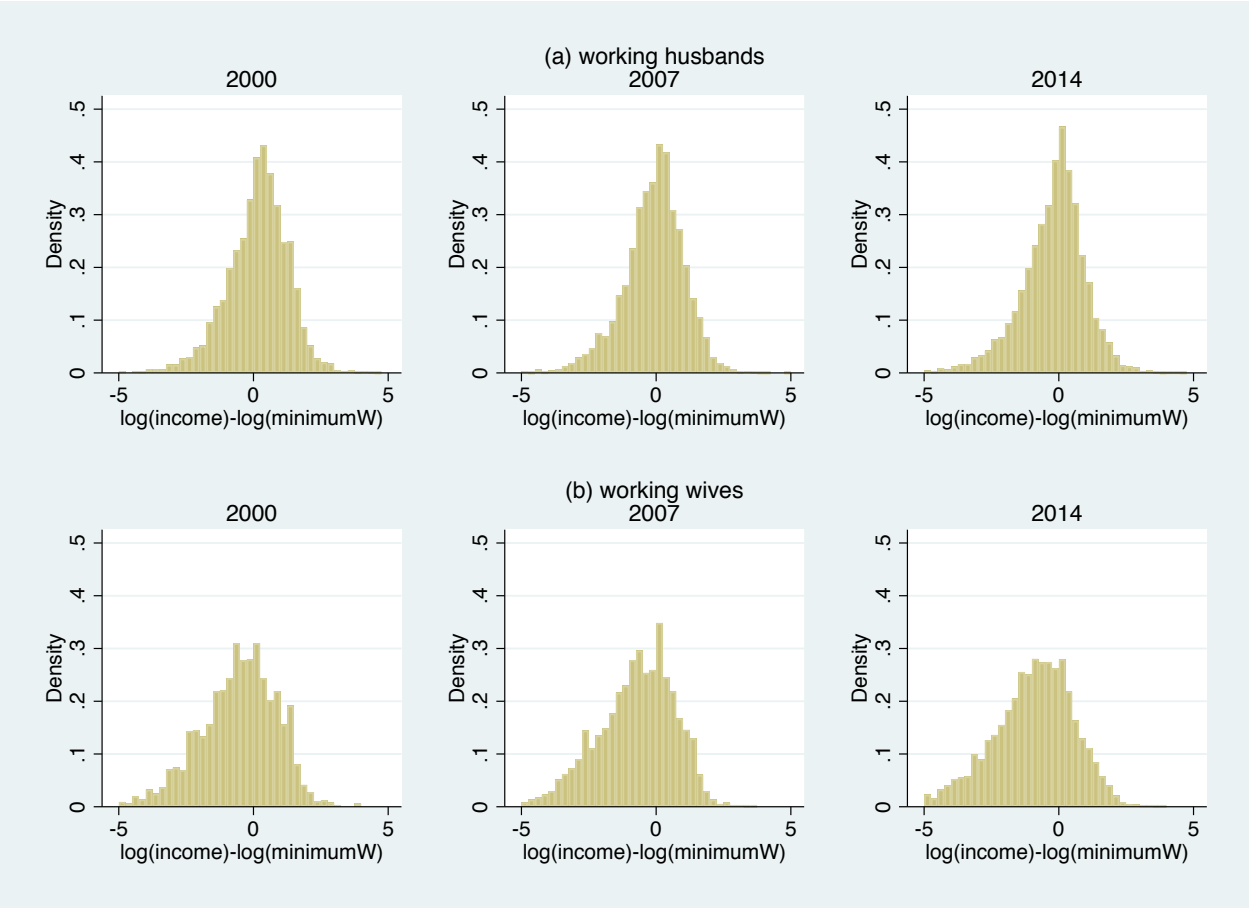
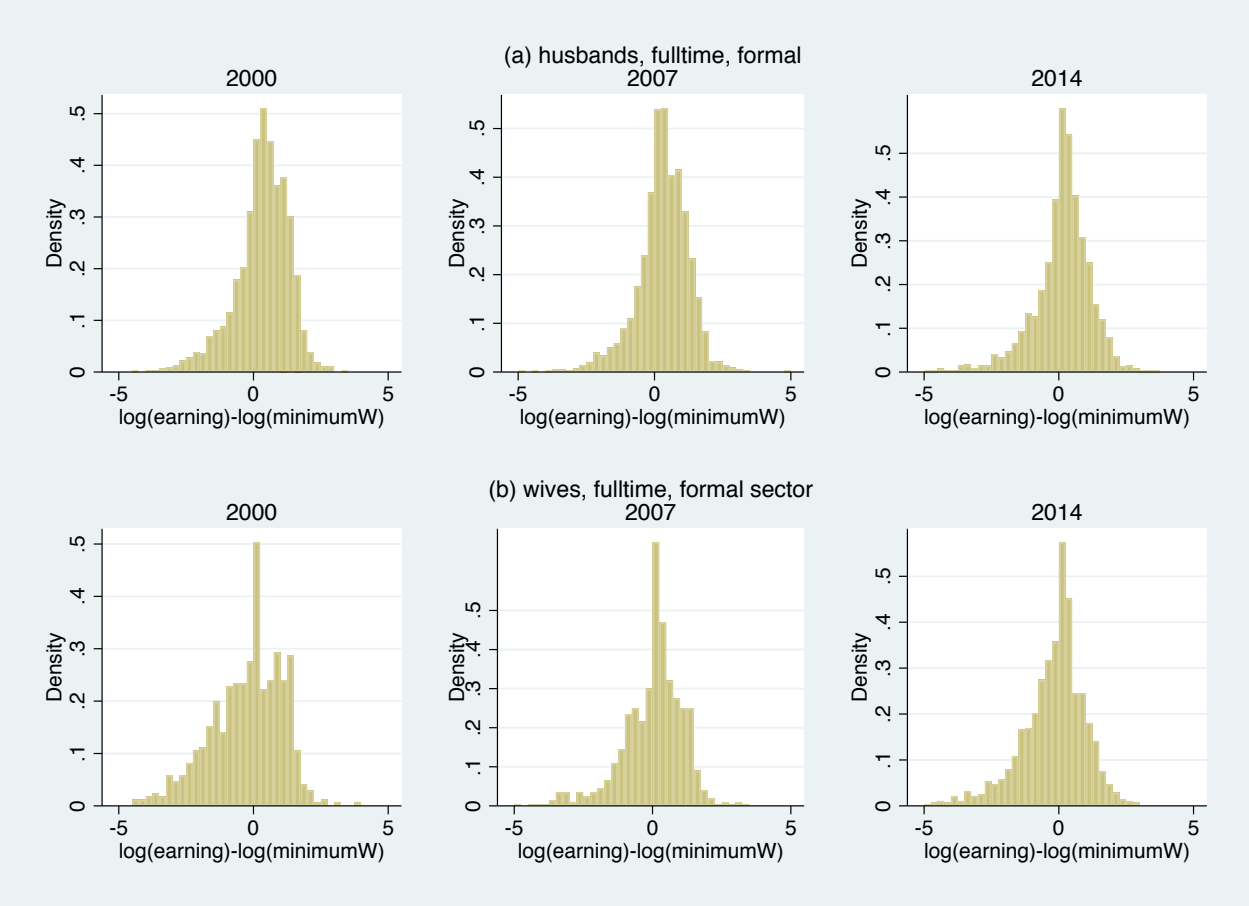


Figure 5: Distribution of earned income relative to the minimum wage, by gender



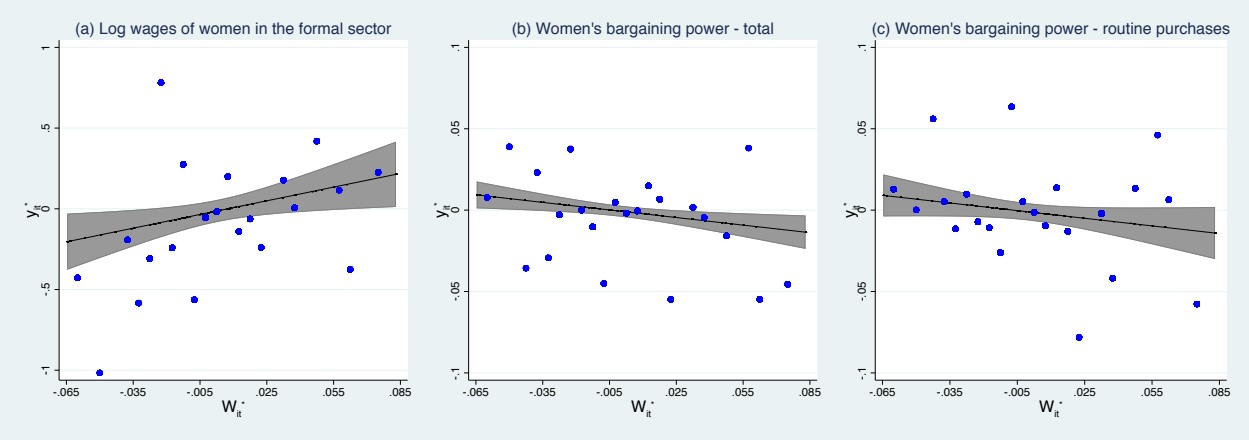
Notes: Each histogram is constructed using observations from our main sample with a nonzero reported earned income.

Figure 6: Distribution of formal sector wage relative to the minimum wage, by gender



Notes: Each histogram is constructed using respondents from our main sample who report working full time (at least 35 hours per week) in the formal sector.

Figure 7: Spatial variation in outcomes and minimum wages in 2000



Notes: Spatial differences were calculated for each outcome and for the minimum wage according to the formula in the text with a bandwidth of 25 miles. Each figure plots predicted values from a linear regression and a confidence band for the predicted values. The blue dots were constructed by binning the observations based on values of the spatial-differenced minimum wages and average the spatial-differences of each outcome for observations within each bin.

Table 1. Descriptive statistics for labor market outcomes

	2000			2007			2014	
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Log total income (if positive)[1]									
Wife	2611	14.870	1.488	2982	15.123	1.476	4090	15.216	1.591
Husband	5476	15.603	1.188	6823	15.800	1.162	7542	16.015	1.257
Log wage (full-time formal sector)[2]									
Wife	684	15.213	1.355	801	15.916	1.169	1110	16.037	1.238
Husband	2194	15.780	1.028	2306	16.235	0.992	2660	16.406	1.091
Log total income[3]									
Wife	5771	6.728	7.469	7207	6.257	7.509	7883	7.894	7.689
Husband	5756	14.844	3.551	7183	15.008	3.629	7861	15.365	3.391
Working									
Wife	5807	0.608	0.488	7282	0.605	0.489	7974	0.657	0.475
Husband	5805	0.961	0.194	7283	0.961	0.194	7969	0.970	0.170
Hours worked (primary job)									
Wife	5803	24.239	26.733	7277	23.302	25.535	7960	25.232	26.893
Husband	5795	43.071	20.325	7275	43.183	20.053	7935	42.462	20.629
Total hours worked									
Wife	5803	26.481	28.781	7277	25.267	27.305	7960	27.164	28.444
Husband	5795	50.169	23.372	7275	49.374	22.593	7935	48.589	23.284
Full-time formal									
Wife	5803	0.120	0.325	7277	0.111	0.315	7953	0.141	0.348
Husband	5795	0.381	0.486	7275	0.321	0.467	7935	0.337	0.473
Informal									
Wife	5807	0.425	0.494	7282	0.440	0.496	7967	0.441	0.497
Husband	5805	0.506	0.500	7283	0.585	0.493	7969	0.561	0.496
Part-time formal									
Wife	5803	0.063	0.244	7277	0.054	0.226	7953	0.075	0.263
Husband	5795	0.075	0.263	7275	0.056	0.229	7935	0.072	0.259
Unpaid family work									
Wife	5807	0.174	0.379	7282	0.205	0.404	7967	0.148	0.355
Husband	5805	0.012	0.110	7283	0.014	0.118	7969	0.013	0.115
Education[4]									
Wife	5804	1.560	1.060	7259	1.881	1.097	7961	2.116	1.109
Husband	5801	1.796	1.124	7261	2.044	1.119	7959	2.209	1.102
Age									
Wife	5808	36.324	10.212	7283	35.924	9.955	7974	37.254	9.825
Husband	5808	41.212	10.735	7283	40.337	10.437	7974	41.326	10.110
Log Household Asset									
Wife	5773	24.693	3.566	7232	24.935	3.035	6906	23.382	7.661
Husband	5771	25.080	3.117	7250	25.290	2.717	7744	24.980	5.296

Notes: Notes: The sample is restricted to include only wives of the head of household (or the head if the head is a woman) for households where both the head and his/her spouse both complete the survey. [1] Summary statistics for this variable are only computed on the subsample of respondents with positive reported income. Total income includes wages and profits from self-employment. [2] Summary statistics for this variable are computed on the subsample of respondents who reported that their primary job was in the formal sector. [3] Summary statistics for this variable were computed across all respondents, including those who reported no income. Total income includes wages and profits from self-employment. [4] Education is a categorical variable equal to 0 if no education, 1 for an elementary level education, 2 for a middle school education, 3 for a high school education, and 4 for university or above.

Table 2. Descriptive statistics for household decision making

	2000			2007			2014		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
A: Expenditure									
On Money given to Wife's Family	5432	0.928	0.259	6852	0.959	0.198	7521	0.845	0.362
On Money given to Husband's Family	5364	0.908	0.288	6787	0.942	0.234	7447	0.815	0.388
On Large Expenses	5489	0.844	0.363	7149	0.903	0.296	7817	0.795	0.404
On Gifts for Parties/Weddings	5778	0.940	0.237	7272	0.961	0.194	7924	0.891	0.312
On Routine Purchases	5741	0.936	0.245	7225	0.936	0.245	7852	0.912	0.284
On Husband's Clothes	5769	0.725	0.447	7254	0.784	0.412	7893	0.689	0.463
On Wife's Clothes	5769	0.940	0.237	7261	0.937	0.244	7901	0.924	0.265
B. Saving									
On Money for Monthly Arisan	3525	0.931	0.253	3883	0.952	0.215	5566	0.886	0.317
On Money for Monthly Saving	2703	0.867	0.340	3428	0.927	0.260	5077	0.845	0.362
C. Children									
On Children's Clothes	5041	0.934	0.249	6596	0.960	0.195	6859	0.932	0.251
On Children's Education	4840	0.917	0.277	6715	0.957	0.204	7260	0.882	0.323
On Children's Health	5266	0.947	0.223	6835	0.969	0.174	7406	0.922	0.267
D. Others									
On Contraception	4218	0.939	0.240	5648	0.968	0.176	6862	0.898	0.303
On Spouse Work	5789	0.694	0.461	7263	0.808	0.394	7956	0.666	0.472

Notes: The sample is restricted to include only wives of the head of household (or the head if the head is a woman) for households where both the head and his/her spouse both complete the survey.

Table 3. Fixed effects regressions for household decision making

	(1) Money given to wife's family	(2) Money given to husband's family	(3) Large Expenses	(4) Gifts for parties	(5) Routine purchases	(6) Wife's clothes	(7) Husband's clothes	(8) Money for monthly arisan
Log Real Min Wage	-0.001	-0.058 *	-0.030	-0.048 *	0.018	0.014	-0.156 **	-0.031
	(0.032)	(0.032)	(0.057)	(0.027)	(0.043)	(0.033)	(0.071)	(0.031)
Mean	0.912	0.892	0.851	0.933	0.929	0.935	0.736	0.921
Observations	18,713	18,515	19,289	19,788	19,643	19,748	19,733	12,310
	(9) Money for monthly savings	**(10)** Contraception	**(11)** **Bargaining power**	**(12)** Children's clothes	**(13)** Children's education	**(14)** Children's health	**(15)** **Decisions regarding children**	**(16)** On spouse work
Log Real Min Wage	-0.106 **	-0.017	-0.044 *	-0.012	-0.043	-0.067 **	-0.042	0.047
	(0.053)	(0.031)	(0.026)	(0.029)	(0.050)	(0.027)	(0.030)	(0.067)
Mean	0.878	0.935	0.890	0.944	0.920	0.947	0.936	0.728
Observations	10,723	15,728	19,858	17,453	17,733	18,403	18,532	19,813

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, and education education squared for wife/husbands.

Table 4. The effect of minimum wage on household decision making

	Bargaining power			Children		
	FE	**SD**	**DSD**	**FE**	**SD**	**DSD**
Log Real Min Wage	-0.044 *	-0.034	-0.090 **	-0.042	-0.006	-0.085 ***
	(0.026)	(0.024)	(0.037)	(0.030)	(0.024)	(0.024)
Wife's Educ.	-0.011	0.008	0.009 **	0.003	0.002	0.003
	(0.016)	(0.005)	(0.004)	(0.013)	(0.005)	(0.004)
Wife's Educ. Sq.	0.000	0.001	0.000	-0.003	0.002 **	0.002 **
	(0.003)	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)
Husband's Educ.	-0.007	-0.002	-0.002	-0.007	-0.008	-0.007
	(0.012)	(0.006)	(0.006)	(0.017)	(0.007)	(0.007)
Husband's Educ. Sq.	0.002	0.001	0.001	0.000	0.000	0.000
	(0.003)	(0.001)	(0.001)	(0.003)	(0.002)	(0.002)
Urban/Rural residence	0.006	0.002	0.002	-0.004	0.002	-0.002
	(0.008)	(0.005)	(0.004)	(0.011)	(0.004)	(0.006)
Log Wife's Assets	0.002 ***	0.003 ***	0.003 ***	0.002 ***	0.002 ***	0.002 ***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Log Husband's Assets	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age	0.004	0.003 ***	0.004 ***	0.000	0.000	0.000
	(0.003)	(0.001)	(0.001)	(0.004)	(0.001)	(0.001)
Age Squared	0.000	0.000 ***	0.000 ***	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mean		0.890			0.936	
Observations		19,858			18,532	

Notes: The sample is restricted to women. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.
Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, and education and education squared for wife/husbands.

Table 5. The effect of minimum wage on labor market outcomes (DSD)

	Wife Sample				Husband Sample				Difference
VARIABLES	(1) Log wage (full-time formal sector)	(2) Log total income	(3) Working	(4) Total hours worked	(5) Log wage (full-time formal sector)	(6) Log total income	(7) Working	(8) Total hours worked	(9) Log total income
25 miles	1.224 ***	1.024	0.070	-0.228	0.817 ***	0.000	-0.040	-3.250	-1.219
	(0.451)	(1.679)	(0.116)	(3.530)	(0.246)	(0.625)	(0.057)	(2.231)	(2.107)
30 miles	0.623	0.501	0.018	4.478	1.144 ***	0.848	0.030	1.385	0.152
	(0.467)	(1.906)	(0.142)	(3.619)	(0.370)	(1.067)	(0.078)	(2.562)	(2.555)
35 miles	0.585 *	0.235	0.009	1.975	0.866 ***	0.741	0.026	1.644	0.477
	(0.307)	(1.451)	(0.108)	(2.367)	(0.312)	(0.761)	(0.053)	(3.078)	(1.924)
40 miles	0.406 *	0.999	0.049	3.631	0.808 **	0.436	0.007	2.413	-0.707
	(0.210)	(1.261)	(0.095)	(2.471)	(0.340)	(0.650)	(0.047)	(3.158)	(1.679)
60 miles	0.568 ***	0.868	0.039	7.072 ***	0.554 ***	0.237	-0.018	0.978	-0.596
	(0.113)	(1.364)	(0.098)	(2.080)	(0.204)	(0.415)	(0.023)	(2.558)	(1.409)
80 miles	0.786 ***	0.510	0.019	7.453 ***	0.653 ***	0.495	-0.001	1.148	-0.034
	(0.139)	(1.438)	(0.095)	(2.566)	(0.201)	(0.361)	(0.019)	(2.984)	(1.466)
Mean	15.794	7.036	0.452	24.497	16.163	15.098	0.951	49.336	8.055
Observations	2,451	19,706	19,880	19,861	7,048	20,490	20,728	20,678	19,469

Notes: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, and education and education squared.

Table 6. The effect of minimum wage on additional labor market outcomes (DSD)

	Wife Sample						Husband Sample					
VARIABLES	(1) Log total income (if positive)	(2) Full-time formal	(3) Part-time formal	(4) Informal	(5) Unpaid family work	(6) Hours (primary job)	(7) Log total income (if positive)	(8) Full-time formal	(9) Part-time formal	(10) Informal	(11) Unpaid family work	(12) Hours (primary job)
25 miles	0.624	-0.039	0.099 ***	0.024	0.015	1.424	0.325 *	0.060	-0.017	-0.027	0.059 **	-2.173
	(0.702)	(0.106)	(0.023)	(0.055)	(0.052)	(2.941)	(0.190)	(0.049)	(0.037)	(0.045)	(0.028)	(3.229)
30 miles	0.510	-0.004	0.072 **	0.033	0.079	6.51 *	0.287	0.112	-0.036	-0.035	0.013	2.051
	(0.581)	(0.139)	(0.034)	(0.052)	(0.055)	(3.396)	(0.233)	(0.073)	(0.041)	(0.033)	(0.024)	(3.725)
35 miles	0.265	-0.006	0.043 ***	0.063	0.084 *	3.713	0.092	0.152 ***	-0.012	-0.110 **	0.010	1.397
	(0.438)	(0.104)	(0.016)	(0.046)	(0.046)	(2.301)	(0.168)	(0.042)	(0.035)	(0.051)	(0.016)	(3.495)
40 miles	0.331	0.013	0.059 ***	0.057	0.072	5.051 **	0.105	0.155 ***	0.003	-0.133 ***	0.021	1.667
	(0.354)	(0.084)	(0.006)	(0.055)	(0.047)	(2.216)	(0.168)	(0.035)	(0.032)	(0.048)	(0.016)	(2.547)
60 miles	0.576 **	0.057	-0.002	0.041	0.055	6.324 **	0.301 **	0.112 ***	-0.002	-0.099 **	0.031 ***	0.092
	(0.248)	(0.070)	(0.013)	(0.040)	(0.038)	(2.908)	(0.138)	(0.035)	(0.019)	(0.047)	(0.011)	(1.806)
80 miles	0.757 **	0.043	0.014	0.029	0.065 *	6.662 **	0.392 **	0.148 ***	-0.002	-0.125 ***	0.024 **	0.942
	(0.312)	(0.074)	(0.011)	(0.048)	(0.038)	(3.164)	(0.163)	(0.032)	(0.017)	(0.032)	(0.011)	(1.776)
Mean	15.111	0.125	0.064	0.440	0.177	24.436	15.830	0.344	0.067	0.554	0.013	42.888
Observations	9,175	19,855	19,855	19,874	19,874	19,861	19,543	20,678	20,678	20,728	20,728	20,678

Notes: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, and education and education squared.

Table 7. The effect of minimum wage on household decision making (DSD), controlling for labor market

	Bargaining power						Decisions involving children					
	(1)		(2)		(3)		(4)		(5)		(6)	
Log Real Min Wage	-0.090	**	-0.085	**	-0.087	**	-0.085	***	-0.077	***	-0.078	***
	(0.037)		(0.036)		(0.036)		(0.024)		(0.021)		(0.021)	
Wife's income			0.002	***	0.002	***			0.001	***	0.001	***
			(0.000)		(0.000)				(0.000)		(0.000)	
Husband's income			0.000		-0.001	**			-0.001	***	-0.001	***
			(0.000)		(0.000)				(0.000)		(0.000)	
Wife part-time Formal					0.011	**					0.003	
					(0.005)						(0.005)	
Wife Unpaid Family Work					0.012	**					0.004	
					(0.005)						(0.005)	
Husband full-time Formal					0.016	***					0.009	*
					(0.004)						(0.005)	
Husband Informal					0.010	***					0.011	**
					(0.003)						(0.005)	
Mean			0.890						0.937			
Observations			19,404						18,117			

Notes: The sample is restricted to women. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, and education and education squared for wife/husbands as the controlled variables.

Table 8. The effect of minimum wage on household decision making (DSD)

VARIABLES	(1) Money given to wife's family	(2) Money given to husband's family	(3) Large Expenses	(4) Gifts for parties	(5) Routine purchases	(6) Wife's clothes	(7) Husband's clothes	(8) Money for monthly arisan
25 miles	-0.015	-0.104	-0.128 *	-0.012	-0.165 ***	-0.071	-0.159	0.026
	(0.053)	(0.074)	(0.067)	(0.021)	(0.057)	(0.079)	(0.168)	(0.069)
	0.788	*0.444*	*0.383*	*0.727*	*0.052*	*0.591*	*0.591*	*0.788*
30 miles	0.012	-0.074	-0.137 **	-0.002	-0.183 ***	-0.075	-0.072	-0.047
	(0.046)	(0.069)	(0.058)	(0.027)	(0.044)	(0.085)	(0.093)	(0.074)
	0.861	*0.548*	*0.066*	*0.944*	*0.000*	*0.589*	*0.615*	*0.664*
35 miles	0.020	-0.036	-0.096	0.027	-0.145 **	-0.043	-0.022	-0.029
	(0.048)	(0.049)	(0.064)	(0.031)	(0.060)	(0.055)	(0.058)	(0.055)
	0.758	*0.758*	*0.456*	*0.758*	*0.103*	*0.758*	*0.758*	*0.758*
40 miles	-0.017	-0.019	-0.076	0.032	-0.093	-0.002	-0.071	-0.011
	(0.044)	(0.041)	(0.059)	(0.026)	(0.069)	(0.063)	(0.074)	(0.055)
	0.893	*0.893*	*0.641*	*0.641*	*0.641*	*0.981*	*0.786*	*0.947*
60 miles	-0.014	-0.064	-0.058	0.006	-0.045	0.036	-0.078	0.017
	(0.010)	(0.041)	(0.035)	(0.025)	(0.052)	(0.042)	(0.064)	(0.037)
	0.371	*0.340*	*0.340*	*0.946*	*0.615*	*0.615*	*0.452*	*0.834*
80 miles	-0.006	-0.061 **	-0.036	-0.013	-0.058	0.017	-0.099 *	0.007
	(0.020)	(0.028)	(0.035)	(0.023)	(0.043)	(0.038)	(0.051)	(0.038)
	0.902	*0.103*	*0.543*	*0.788*	*0.423*	*0.846*	*0.146*	*0.922*
Mean	0.912	0.892	0.851	0.933	0.929	0.935	0.736	0.921
Observations	18,713	18,515	19,289	19,788	19,643	19,748	19,733	12,310

Notes: The sample is restricted to women. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, based on unadjusted p-values. Adjusted p-values, based on the method of Benjamini Hochberg method, are reported in italics. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, education and education squared for wife/husbands.

Table 9. The effect of minimum wage on household decision making (DSD), cont'd.

VARIABLES	(1) Money for monthly savings	(2) Contraception	(3) *Bargaining power*	(4) Children's clothes	(5) Children's education	(6) Children's health	(7) *Decisions regarding children*	(8) On spouse work
25 miles	-0.019	-0.099	-0.090 **	-0.071	-0.101	-0.066	-0.085 ***	0.057
	(0.072)	(0.066)	(0.037)	(0.084)	(0.088)	(0.042)	(0.024)	(0.071)
	0.788	*0.444*		*0.591*	*0.586*	*0.444*		*0.591*
30 miles	-0.044	-0.105 ***	-0.080 ***	-0.080	-0.064	-0.055	-0.070 *	0.165 ***
	(0.042)	(0.034)	(0.016)	(0.062)	(0.129)	(0.054)	(0.040)	(0.055)
	0.548	*0.012*		*0.548*	*0.722*	*0.548*		*0.012*
35 miles	0.027	-0.054 *	-0.045 **	-0.024	-0.006	-0.019	-0.014	0.236 ***
	(0.037)	(0.030)	(0.018)	(0.039)	(0.077)	(0.042)	(0.029)	(0.065)
	0.758	*0.351*		*0.758*	*0.938*	*0.758*		*0.004*
40 miles	-0.015	-0.063 **	-0.041 ***	-0.027	0.009	-0.027	-0.009	0.188 ***
	(0.033)	(0.030)	(0.014)	(0.046)	(0.062)	(0.035)	(0.025)	(0.072)
	0.893	*0.248*		*0.893*	*0.947*	*0.884*		*0.124*
60 miles	-0.038	-0.054 ***	-0.032 ***	-0.004	-0.001	-0.051 **	-0.019	0.167 **
	(0.063)	(0.018)	(0.012)	(0.031)	(0.034)	(0.024)	(0.016)	(0.078)
	0.759	*0.039*		*0.957*	*0.969*	*0.155*		*0.155*
80 miles	-0.058	-0.061 ***	-0.042 ***	-0.003	-0.030	-0.065 ***	-0.032 *	0.128 **
	(0.051)	(0.012)	(0.008)	(0.028)	(0.048)	(0.024)	(0.019)	(0.053)
	0.510	*0.000*		*0.922*	*0.788*	*0.053*		*0.075*
Mean	0.878	0.935	0.890	0.944	0.920	0.947	0.936	0.728
Observations	10,723	15,728	19,858	17,453	17,733	18,403	18,532	19,813

Notes: The sample is restricted to women. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, based on unadjusted p-values. Adjusted p-values, based on the method of Benjamini Hochberg method, are reported in italics. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, education and education squared for wife/husbands.

Table 10. The effect of minimum wage on household decision making (DSD), by wife's education

	Less educated				More educated			
VARIABLES	**(1) Bargaining power**		**(2) Decisions involving children**		**(3) Bargaining power**		**(4) Decisions involving children**	
25 miles	-0.140	***	-0.121	**	-0.042	**	-0.039	
	(0.030)		(0.050)		(0.018)		(0.036)	
30 miles	-0.096	***	-0.089		-0.058		-0.043	*
	(0.023)		(0.059)		(0.035)		(0.026)	
35 miles	-0.039		0.016		-0.052		-0.057	***
	(0.027)		(0.047)		(0.037)		(0.020)	
40 miles	-0.053	***	0.007		-0.037		-0.019	
	(0.012)		(0.029)		(0.034)		(0.032)	
60 miles	-0.042	***	-0.022		-0.037		-0.030	*
	(0.012)		(0.018)		(0.031)		(0.015)	
80 miles	-0.053	**	-0.046	**	-0.025		-0.008	
	(0.020)		(0.023)		(0.032)		(0.020)	
Mean	0.884		0.931		0.901		0.947	
Observations	13,478		12,648		6,380		5,884	

Notes: The sample is restricted to women. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, and education for wife/husbands.

Table 11. The effect of minimum wage on labor market outcomes (DSD), by wife's education

	Less educated						More educated					
VARIABLES	**(1) Log total income**	**(2) Working**	**(3) Full-time formal**	**(4) Part-time formal**	**(5) Informal**	**(6) Unpaid family work**	**(7) Log total income**	**(8) Working**	**(9) Full-time formal**	**(10) Part-time formal**	**(11) Informal**	**(12) Unpaid family work**
25 miles	1.940	0.131	0.072	0.042 ***	0.028	0.013	2.478 *	0.188 *	-0.106	0.216 **	0.039	-0.038
	(1.866)	(0.146)	(0.064)	(0.014)	(0.095)	(0.078)	(1.491)	(0.097)	(0.178)	(0.097)	(0.138)	(0.052)
30 miles	0.884	0.021	0.016	0.057 **	0.046	0.089	3.090 *	0.232 **	0.085	0.154	-0.046	-0.039
	(2.481)	(0.203)	(0.094)	(0.023)	(0.074)	(0.087)	(1.671)	(0.109)	(0.244)	(0.109)	(0.146)	(0.047)
35 miles	1.027	0.044	0.06	0.006	0.095	0.103 *	2.103	0.171 *	-0.015	0.179 **	-0.039	-0.046
	(1.565)	(0.135)	(0.070)	(0.011)	(0.078)	(0.058)	(1.564)	(0.103)	(0.212)	(0.074)	(0.130)	(0.051)
40 miles	1.501	0.063	0.059	0.021	0.092	0.096	2.411 *	0.191 **	0.005	0.224 ***	-0.075	-0.036
	(1.534)	(0.130)	(0.061)	(0.020)	(0.073)	(0.061)	(1.270)	(0.078)	(0.177)	(0.077)	(0.112)	(0.043)
60 miles	0.781	0.028	0.079	-0.026 *	0.028	0.046	2.467	0.170	0.038	0.138 **	-0.026	-0.019
	(1.104)	(0.089)	(0.056)	(0.015)	(0.055)	(0.036)	(2.077)	(0.127)	(0.129)	(0.059)	(0.076)	(0.041)
80 miles	-0.118	-0.024	0.051	-0.009	0.016	0.077 **	3.017	0.191 *	0.045	0.128 **	0.009	-0.009
	(1.345)	(0.091)	(0.064)	(0.010)	(0.055)	(0.032)	(1.917)	(0.115)	(0.118)	(0.052)	(0.074)	(0.033)
Mean	6.359	0.414	0.087	0.037	0.508	0.218	8.464	0.531	0.204	0.120	0.298	0.091
Observations	13,374	13,494	13,478	13,478	13,491	13,491	6,332	6,386	6,377	6,377	6,383	6,383

Notes: The sample is restricted to women. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, and education for wife/husbands.

Table 12. The effect of minimum wage on household decision making (DSD), by wife's occupation/sector

	Agriculture		Manufacturing		Retail		Services	
VARIABLES	(1) Bargaining power	(2) Decisions involving children	(3) Bargaining power	(4) Decisions involving children	(5) Bargaining power	(6) Decisions involving children	(7) Bargaining power	(8) Decisions involving children
25 miles	0.026	-0.058	-0.063	-0.050	-0.136 ***	-0.212 **	-0.101	-0.221 ***
	(0.106)	(0.087)	(0.108)	(0.238)	(0.042)	(0.105)	(0.092)	(0.055)
30 miles	0.007	-0.029	-0.010	-0.017	-0.139 ***	-0.178 **	-0.144 **	-0.265 ***
	(0.125)	(0.104)	(0.140)	(0.241)	(0.040)	(0.086)	(0.057)	(0.058)
35 miles	-0.043	0.122	-0.041	-0.014	-0.064 **	-0.101	-0.143 ***	-0.199 ***
	(0.107)	(0.080)	(0.132)	(0.204)	(0.028)	(0.087)	(0.039)	(0.050)
40 miles	-0.061	0.048	-0.017	-0.003	-0.052 *	-0.023	-0.131 **	-0.238 ***
	(0.066)	(0.031)	(0.111)	(0.202)	(0.028)	(0.061)	(0.051)	(0.024)
60 miles	-0.034	0.036	0.024	0.051	-0.043 *	-0.057	-0.119 ***	-0.166 ***
	(0.036)	(0.046)	(0.059)	(0.125)	(0.024)	(0.039)	(0.043)	(0.026)
80 miles	-0.030 **	0.000	-0.006	0.075	-0.030	-0.086 **	-0.120 ***	-0.140 ***
	(0.013)	(0.038)	(0.047)	(0.095)	(0.025)	(0.042)	(0.031)	(0.027)
Mean	0.889	0.941	0.901	0.935	0.899	0.936	0.912	0.951
Observations	3,819	3,601	1,648	1,512	4,220	3,991	2,487	2,293

Notes: The sample is restricted to women. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, and education and education squared for wife/husbands.

Table 13. The effect of minimum wage on household decision making (DSD), by husband's occupation/sector

	Agriculture		Manufacturing		Retail		Services	
VARIABLES	(1) Bargaining power	(2) Decisions involving children	(3) Bargaining power	(4) Decisions involving children	(5) Bargaining power	(6) Decisions involving children	(7) Bargaining power	(8) Decisions involving children
25 miles	-0.115 **	-0.078	-0.023	0.097	-0.039	0.107	-0.117 **	-0.120 *
	(0.050)	(0.079)	(0.103)	(0.095)	(0.079)	(0.074)	(0.047)	(0.070)
30 miles	-0.040	0.002	-0.191	0.008	0.006	0.099 *	-0.130 ***	-0.165 *
	(0.050)	(0.042)	(0.119)	(0.100)	(0.069)	(0.054)	(0.043)	(0.093)
35 miles	-0.078	0.067	-0.051	0.084	0.041	0.155 ***	-0.089 *	-0.133
	(0.080)	(0.045)	(0.071)	(0.053)	(0.065)	(0.053)	(0.046)	(0.095)
40 miles	-0.105 **	0.025	-0.029	0.091 **	0.073	0.188 ***	-0.061	-0.082
	(0.043)	(0.033)	(0.088)	(0.046)	(0.053)	(0.044)	(0.046)	(0.077)
60 miles	-0.011	-0.007	0.051	0.008	0.038	0.195 ***	-0.057 **	-0.088 **
	(0.064)	(0.027)	(0.110)	(0.034)	(0.037)	(0.057)	(0.027)	(0.040)
80 miles	-0.044	-0.041 **	0.027	0.004	0.047	0.124 **	-0.075 *	-0.065
	(0.053)	(0.020)	(0.080)	(0.017)	(0.037)	(0.060)	(0.039)	(0.049)
Mean	0.892	0.946	0.892	0.929	0.883	0.926	0.894	0.933
Observations	6,270	5,868	2,169	1,992	3,208	2,987	4,087	3,823

Notes: The sample is restricted to women. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, and education and education squared for wife/husbands.

Table 14. The effect of minimum wage on household decision making (DSD), by wife's labor market participation

	Doesn't work		Primary work is unpaid family work		Primary work is informal, not unpaid		Primary work is Part-time formal		Primary work is full-time formal	
VARIABLES	(1) Bargaining power	(2) Decisions involving children	(3) Bargaining power	(4) Decisions involving children	(5) Bargaining power	(6) Decisions involving children	(7) Bargaining power	(8) Decisions involving children	(9) Bargaining power	(10) Decisions involving children
25 miles	-0.086	0.066	-0.225 **	-0.190 *	-0.085 **	-0.206 ***	0.119	0.040	-0.099	-0.105
	(0.094)	(0.078)	(0.089)	(0.107)	(0.039)	(0.076)	(0.104)	(0.208)	(0.065)	(0.080)
30 miles	-0.078	0.065 *	-0.121 *	-0.124 *	-0.123 ***	-0.182 **	0.159 *	0.006	-0.124 **	-0.129 **
	(0.057)	(0.036)	(0.071)	(0.068)	(0.040)	(0.078)	(0.085)	(0.181)	(0.057)	(0.064)
35 miles	-0.008	0.106 **	0.000	0.041	-0.091 **	-0.109	0.097	-0.009	-0.127 *	-0.081
	(0.036)	(0.042)	(0.045)	(0.062)	(0.039)	(0.075)	(0.075)	(0.181)	(0.072)	(0.053)
40 miles	-0.003	0.105 *	-0.033	0.010	-0.078 **	-0.026	0.082	-0.054	-0.063	-0.089
	(0.033)	(0.055)	(0.043)	(0.066)	(0.035)	(0.056)	(0.067)	(0.162)	(0.067)	(0.064)
60 miles	-0.049	0.032	-0.025	-0.057	-0.095 ***	-0.085 **	0.015	-0.048	-0.042	-0.008
	(0.038)	(0.047)	(0.043)	(0.055)	(0.031)	(0.043)	(0.059)	(0.145)	(0.044)	(0.036)
80 miles	-0.042 **	-0.009	-0.060 **	-0.060	-0.077 **	-0.087 **	-0.007	-0.063	-0.042	0.009
	(0.021)	(0.037)	(0.026)	(0.062)	(0.030)	(0.037)	(0.049)	(0.117)	(0.047)	(0.032)
Mean	0.874	0.930	0.888	0.936	0.897	0.939	0.913	0.949	0.911	0.944
Observations	7,374	6,854	3,516	3,311	5,219	4,977	1,266	1,164	2,474	2,220

Notes: The sample is restricted to women. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, and education and education squared for wife/husbands.

Table 15. The effect of minimum wage on other outcomes (DSD)

VARIABLES	(1) Tobacco/Alcohol expenditure (log)	(2) Tobacco/Alcohol expenditure share (log)	(3) Monthly Arisan contribution (log)	(4) Monthly Arisan contribution share (log)	(5) Exhibit symptoms in last 4 weeks - girls	(6) Exhibit symptoms in last 4 weeks - boys
25 miles	0.157 **	0.063	-0.447 **	-0.279	0.147	0.040
	(0.075)	(0.119)	(0.216)	(0.266)	(0.128)	(0.078)
30 miles	0.109	0.073	-0.431 **	-0.286	0.067	0.024
	(0.114)	(0.119)	(0.216)	(0.265)	(0.119)	(0.124)
35 miles	0.152 **	0.042	-0.623 *	-0.479	0.158	-0.003
	(0.077)	(0.047)	(0.321)	(0.333)	(0.103)	(0.056)
40 miles	0.199 ***	0.164 **	-0.628 ***	-0.516 *	0.184 **	-0.012
	(0.048)	(0.072)	(0.231)	(0.265)	(0.092)	(0.079)
60 miles	0.085	-0.044	-0.424 ***	-0.350 **	0.146 **	-0.050
	(0.057)	(0.050)	(0.153)	(0.145)	(0.068)	(0.078)
80 miles	0.105	0.039	-0.214	-0.173	0.065	-0.115
	(0.087)	(0.073)	(0.197)	(0.175)	(0.075)	(0.086)
Mean	14.149	-1.973	13.57	-2.646	0.736	0.736
Observations	13,354	13,354	9986	9986	9072	9072

Notes: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age polynomial, and education. Tobacco/alcohol expenditure share is calculated as the share of weekly food expenditure. Arisan contribution share is calculated as the share of monthly expenditure on non-food items. Regressions exclude households with no expenditure on the relevant item.

Table 16. The effect of minimum wage on other outcomes (DSD) by wife's education

	Less Educated						More Educated					
VARIABLES	**(1) Tobacco/Alcohol expenditure (log)**	**(2) Tobacco/Alcohol expenditure share (log)**	**(3) Monthly Arisan contribution (log)**	**(4) Monthly Arisan contribution share (log)**	**(5) Exhibit symptoms in last 4 weeks - girls**	**(6) Exhibit symptoms in last 4 weeks - boys**	**(7) Tobacco/Alcohol expenditure (log)**	**(8) Tobacco/Alcohol expenditure share (log)**	**(9) Monthly Arisan contribution (log)**	**(10) Monthly Arisan contribution share (log)**	**(11) Exhibit symptoms in last 4 weeks - girls**	**(12) Exhibit symptoms in last 4 weeks - boys**
25 miles	0.535 ***	0.258	-0.762 ***	-0.646	0.286	0.288 ***	-0.036	-0.427 *	0.314	0.453	0.087	-0.340
	(0.043)	(0.220)	(0.268)	(0.543)	(0.190)	(0.074)	(0.216)	(0.251)	(0.245)	(0.336)	(0.162)	(0.247)
30 miles	0.477 ***	0.269	-0.722 ***	-0.588	0.149	0.202 ***	-0.197	-0.154	0.318	0.418	-0.072	-0.190
	(0.072)	(0.170)	(0.275)	(0.465)	(0.154)	(0.072)	(0.212)	(0.120)	(0.234)	(0.392)	(0.175)	(0.320)
35 miles	0.393 ***	0.158 ***	-1.199 ***	-1.085 **	0.255 **	0.118 *	-0.140	-0.185 **	0.227	0.392	0.026	-0.136
	(0.125)	(0.056)	(0.377)	(0.444)	(0.108)	(0.061)	(0.201)	(0.080)	(0.335)	(0.524)	(0.177)	(0.236)
40 miles	0.482 ***	0.282 ***	-1.014 ***	-1.078 ***	0.294 ***	0.091 ***	-0.151	-0.130	0.182	0.348	0.043	-0.111
	(0.064)	(0.071)	(0.268)	(0.360)	(0.077)	(0.030)	(0.148)	(0.123)	(0.262)	(0.362)	(0.154)	(0.232)
60 miles	0.338 ***	0.099	-0.611 ***	-0.799 ***	0.175 **	-0.013	-0.040	-0.185 *	0.179	0.425 **	0.073	-0.079
	(0.116)	(0.085)	(0.127)	(0.179)	(0.081)	(0.066)	(0.117)	(0.101)	(0.152)	(0.205)	(0.106)	(0.175)
80 miles	0.269 **	0.127	-0.303	-0.464 **	0.052	-0.096 *	0.250 ***	0.194 *	0.270	0.420	-0.005	-0.112
	(0.107)	(0.087)	(0.184)	(0.196)	(0.074)	(0.054)	(0.094)	(0.107)	(0.212)	(0.257)	(0.122)	(0.189)
Mean	14.058	-1.962	13.405	-2.516	0.727	0.721	14.387	-2.003	13.825	-2.850	0.754	0.763
Observations	9,644	9,644	6,080	6,080	5,880	6,151	3,710	3,710	3,906	3,906	3,192	3,403

Notes: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age polynomial, and education. Tobacco/alcohol expenditure share is calculated as the share of weekly food expenditure. Arisan contribution share is calculated as the share of monthly expenditure on non-food items. Regressions exclude households with no expenditure on the relevant item.

Table 17. The effect of minimum wage on household decision making, husband sample (DSD)

VARIABLES	(1) Money given to wife's family		(2) Money given to husband's family		(3) Large Expenses		(4) Gifts for parties		(5) Routine purchases		(6) Wife's clothes		(7) Husband's clothes		(8) Money for monthly arisan	
25 miles	0.017		-0.159		-0.171	***	-0.137	***	-0.109	**	0.006		-0.058		-0.113	
	(0.086)		(0.186)		(0.065)		(0.048)		(0.049)		(0.052)		(0.098)		(0.075)	
	0.908		*0.609*		*0.039*		*0.039*		*0.094*		*0.908*		*0.707*		*0.369*	
30 miles	0.030		-0.057		-0.101		-0.044		-0.061	*	0.045		-0.001		-0.073	
	(0.101)		(0.214)		(0.073)		(0.053)		(0.034)		(0.043)		(0.063)		(0.110)	
	0.937		*0.937*		*0.695*		*0.779*		*0.493*		*0.695*		*0.987*		*0.789*	
35 miles	0.083		0.006		-0.036		-0.021		-0.061	*	0.051	*	0.041		0.002	
	(0.078)		(0.182)		(0.074)		(0.039)		(0.034)		(0.027)		(0.079)		(0.101)	
	0.800		*0.987*		*0.880*		*0.880*		*0.352*		*0.352*		*0.880*		*0.987*	
40 miles	0.064		-0.003		-0.001		-0.013		-0.098	**	0.013		0.019		-0.023	
	(0.076)		(0.164)		(0.059)		(0.037)		(0.039)		(0.030)		(0.095)		(0.082)	
	0.986		*0.986*		*0.986*		*0.986*		*0.169*		*0.986*		*0.986*		*0.986*	
60 miles	0.029		-0.036		-0.100	**	-0.013		-0.053		0.045		-0.033		0.004	
	(0.050)		(0.111)		(0.043)		(0.028)		(0.052)		(0.028)		(0.064)		(0.076)	
	0.862		*0.862*		*0.142*		*0.862*		*0.846*		*0.527*		*0.862*		*0.962*	
80 miles	0.040	**	-0.037		-0.076	**	-0.002		-0.062		0.025		-0.089		-0.044	
	(0.020)		(0.070)		(0.031)		(0.030)		(0.041)		(0.021)		(0.063)		(0.045)	
	0.220		*0.928*		*0.105*		*0.939*		*0.446*		*0.541*		*0.446*		*0.568*	
Mean	0.893		0.843		0.836		0.893		0.921		0.936		0.671		0.882	
Observations	19,605		19,473		20,207		20,657		20,573		20,627		20,608		12,574	

Notes: The sample is restricted to men. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, based on unadjusted p-values. Adjusted p-values, based on the method of Benjamini Hochberg method, are reported in italics. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, education and education squared for wife/husbands.

Table 18. The effect of minimum wage on household decision making, husband sample, cont'd. (DSD)

VARIABLES	(1) Money for monthly savings		(2) Contraception	(3) *Bargaining power*	(4) Children's clothes	(5) Children's education	(6) *Children's health*	(7) Decisions regarding children	(8) On spouse work
25 miles	-0.325	***	0.017	-0.087	-0.052	-0.068	-0.095	-0.059	0.075
	(0.117)		(0.081)	(0.064)	(0.059)	(0.076)	(0.089)	(0.050)	(0.100)
	0.039		*0.908*		*0.609*	*0.609*	*0.609*		*0.640*
30 miles	-0.289	**	0.022	-0.035	-0.006	-0.062	-0.122	-0.056	0.115
	(0.125)		(0.089)	(0.067)	(0.060)	(0.081)	(0.117)	(0.064)	(0.092)
	0.289		*0.937*		*0.987*	*0.779*	*0.695*		*0.695*
35 miles	-0.200	**	0.032	0.004	0.034	0.047	-0.002	0.031	0.102
	(0.089)		(0.104)	(0.059)	(0.046)	(0.073)	(0.096)	(0.063)	(0.081)
	0.351		*0.968*		*0.880*	*0.880*	*0.987*		*0.733*
40 miles	-0.186	**	-0.010	-0.010	-0.013	-0.007	-0.049	-0.025	0.052
	(0.091)		(0.070)	(0.056)	(0.046)	(0.072)	(0.101)	(0.068)	(0.075)
	0.280		*0.986*		*0.986*	*0.986*	*0.986*		*0.986*
60 miles	-0.172	***	-0.011	-0.030	0.026	0.014	-0.027	0.000	0.076
	(0.063)		(0.043)	(0.037)	(0.030)	(0.040)	(0.060)	(0.034)	(0.069)
	0.091		*0.862*		*0.862*	*0.862*	*0.862*		*0.846*
80 miles	-0.154	***	0.006	-0.035	-0.007	0.009	-0.042	-0.019	0.027
	(0.032)		(0.020)	(0.022)	(0.030)	(0.053)	(0.038)	(0.030)	(0.073)
	0.000		*0.928*		*0.928*	*0.928*	*0.542*		*0.928*
Mean	0.834		0.926	0.862	0.936	0.876	0.897	0.900	0.646
Observations	11,361		16,449	20,771	18,399	18,505	19,220	19,344	20,668

Notes: The sample is restricted to men. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, based on unadjusted p-values. Adjusted p-values, based on the method of Benjamini Hochberg method, are reported in italics. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, education and education squared for wife/husbands.

Table 19. The effect of minimum wage on labor market outcomes (FE and SD)

	Wife Sample				Husband Sample				Difference
VARIABLES	(1) Log wage (full-time formal sector)	(2) Log total income	(3) Working	(4) Total hours worked	(5) Log wage (full-time formal sector)	(6) Log total income	(7) Working	(8) Total hours worked	(9) Log total income
				A. Fixed Effects					
	0.297 **	-0.393	-0.040	1.944	0.515 ***	0.345	-0.020	3.245	0.646
	(0.124)	(0.627)	(0.042)	(2.637)	(0.115)	(0.262)	(0.018)	(2.503)	(0.642)
				B. Spatial Differencing					
25 miles	1.164 ***	-1.014	-0.199 **	-8.304	1.129 ***	1.662 **	0.035 **	1.233	2.448
	(0.303)	(1.780)	(0.094)	(5.521)	(0.357)	(0.659)	(0.017)	(2.879)	(2.185)
30 miles	1.278 ***	0.021	-0.157 *	-2.305	1.471 ***	1.699 ***	0.029 *	4.346 *	1.507
	(0.228)	(1.586)	(0.094)	(5.443)	(0.419)	(0.492)	(0.015)	(2.344)	(1.732)
35 miles	1.095 ***	0.520	-0.111	-2.886	1.230 ***	1.634 ***	0.023	2.819	1.136
	(0.257)	(1.702)	(0.077)	(3.905)	(0.329)	(0.436)	(0.014)	(1.724)	(1.967)
40 miles	1.195 ***	1.069	-0.100	-2.996	1.178 ***	1.388 ***	0.011	1.368	0.285
	(0.234)	(1.816)	(0.073)	(3.462)	(0.317)	(0.375)	(0.014)	(1.168)	(2.035)
60 miles	0.982 ***	0.519	-0.072	-1.969	1.067 ***	1.033 ***	-0.005	0.974	0.493
	(0.200)	(1.102)	(0.056)	(3.226)	(0.173)	(0.195)	(0.007)	(2.313)	(1.003)
80 miles	1.217 ***	0.449	-0.051	-0.362	1.015 ***	1.023 ***	-0.001	0.363	0.561
	(0.190)	(0.822)	(0.050)	(2.862)	(0.153)	(0.168)	(0.006)	(1.606)	(0.703)
Mean	15.794	7.036	0.452	26.497	16.163	15.098	0.951	49.336	8.055
Observations	2,451	19,706	19,880	19,861	7,048	20,490	20,728	20,678	19,469

Notes: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, education level and education squared.

Table 20. The effect of minimum wage on additional labor market outcomes (FE and SD)

	Wife Sample						Husband Sample					
VARIABLES	**(1) Log total income (if positive)**	**(2) Full-time formal**	**(3) Part-time formal**	**(4) Informal**	**(5) Unpaid family work**	**(6) Hours (primary job)**	**(7) Log total income (if positive)**	**(8) Full-time formal**	**(9) Part-time formal**	**(10) Informal**	**(11) Unpaid family work**	**(12) Hours (primary job)**
					A. Fixed Effects							
	0.345	-0.029	-0.001	0.081 **	0.093 *	0.471	0.467 ***	0.104 **	0.001	-0.101 *	0.028 **	-1.673
	(0.225)	(0.025)	(0.022)	(0.039)	(0.052)	2.372	(0.118)	(0.047)	(0.016)	(0.051)	(0.012)	1.579
					A. Spatial Differencing							
25 miles	0.562 ***	0.095	-0.040 ***	-0.255 ***	-0.139	-5.936	1.031 ***	0.402 ***	-0.073 ***	-0.288 ***	-0.008	5.283 ***
	(0.179)	(0.098)	(0.015)	(0.061)	(0.118)	(5.180)	(0.245)	(0.084)	(0.019)	(0.099)	(0.021)	(2.016)
30 miles	0.715 ***	0.111	-0.040	-0.227 *	-0.148	0.135	1.089 ***	0.403 ***	-0.059 **	-0.315 ***	-0.017 *	8.185 ***
	(0.269)	(0.117)	(0.025)	(0.121)	(0.157)	(5.426)	(0.337)	(0.095)	(0.027)	(0.107)	(0.010)	(1.813)
35 miles	0.664 ***	0.106	-0.036 *	-0.182	-0.134	-1.550	0.928 ***	0.341 ***	-0.035	-0.284 ***	-0.026 ***	5.054 ***
	(0.192)	(0.102)	(0.019)	(0.120)	(0.144)	(3.843)	(0.278)	(0.091)	(0.025)	(0.110)	(0.007)	(1.889)
40 miles	0.772 ***	0.150	-0.036 **	-0.214	-0.161	-1.561	0.924 ***	0.358 ***	-0.053 **	-0.293 **	-0.024 ***	4.703 ***
	(0.207)	(0.117)	(0.016)	(0.145)	(0.163)	(3.348)	(0.243)	(0.099)	(0.026)	(0.125)	(0.007)	(1.669)
60 miles	0.717 ***	0.134 *	-0.047 ***	-0.159 *	-0.099	-0.544	0.925 ***	0.277 ***	-0.060 ***	-0.223 ***	-0.018 ***	3.894 *
	(0.106)	(0.072)	(0.012)	(0.089)	(0.085)	(2.684)	(0.133)	(0.077)	(0.015)	(0.083)	(0.006)	(2.197)
80 miles	0.876 ***	0.116 **	-0.045 ***	-0.122 **	-0.062	0.180	0.924 ***	0.245 ***	-0.047 ***	-0.200 ***	-0.014 ***	3.112 *
	(0.119)	(0.054)	(0.013)	(0.062)	(0.052)	(2.343)	(0.113)	(0.063)	(0.011)	(0.066)	(0.004)	(1.628)
Mean	15.111	0.125	0.064	0.440	0.177	24.436	15.830	0.344	0.067	0.554	0.013	42.888
Observations	9,171	19,855	19,855	19,874	19,874	19.861	19,543	20,678	20,678	20,728	20,728	20,678

Notes: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, education level and education squared.

Table 21. The effect of minimum wage on household decision making (FE and SD)

VARIABLES	(1) Money given to wife's family	(2) Money given to husband's family	(3) Large Expenses	(4) Gifts for parties	(5) Routine purchases	(6) Wife's clothes	(7) Husband's clothes	(8) Money for monthly arisan
				A. Fixed Effects				
	-0.001	-0.058 *	-0.030	-0.048 *	0.018	0.014	-0.156 **	-0.031
	(0.032)	(0.032)	(0.057)	(0.027)	(0.043)	(0.033)	(0.071)	(0.031)
	0.973	*0.228*	*0.731*	*0.228*	*0.731*	*0.731*	*0.195*	*0.731*
				B. Spatial Differencing				
25 miles	0.047 **	-0.024	-0.036	-0.032 **	-0.104 ***	-0.011	-0.010	-0.046
	(0.024)	(0.026)	(0.043)	(0.014)	(0.023)	(0.053)	(0.081)	(0.054)
	0.213	*0.805*	*0.805*	*0.148*	*0.000*	*0.962*	*0.962*	*0.805*
30 miles	0.049 **	-0.038	-0.016	-0.009	-0.073 **	0.015	-0.058	-0.052
	(0.023)	(0.042)	(0.053)	(0.022)	(0.028)	(0.045)	(0.094)	(0.062)
	0.210	*0.944*	*0.944*	*0.944*	*0.148*	*0.944*	*0.944*	*0.944*
35 miles	0.066 ***	0.018	0.048	0.020	-0.017	0.038	0.007	0.016
	(0.019)	(0.042)	(0.061)	(0.019)	(0.030)	(0.028)	(0.074)	(0.050)
	0.005	*0.857*	*0.769*	*0.730*	*0.800*	*0.486*	*0.926*	*0.882*
40 miles	0.025	0.003	0.014	0.004	-0.011	0.031	-0.029	-0.005
	(0.022)	(0.035)	(0.065)	(0.016)	(0.034)	(0.026)	(0.093)	(0.044)
	0.867	*0.927*	*0.927*	*0.927*	*0.927*	*0.867*	*0.927*	*0.927*
60 miles	0.037 **	0.012	0.031	0.009	0.010	0.035 **	-0.054	0.046 *
	(0.016)	(0.040)	(0.043)	(0.018)	(0.023)	(0.018)	(0.060)	(0.024)
	0.152	*0.831*	*0.661*	*0.785*	*0.785*	*0.152*	*0.575*	*0.163*
80 miles	0.018	-0.021	0.003	-0.013	-0.010	0.021 **	-0.095 **	0.029
	(0.018)	(0.035)	(0.033)	(0.019)	(0.017)	(0.008)	(0.044)	(0.022)
	0.614	*0.759*	*0.916*	*0.759*	*0.759*	*0.153*	*0.213*	*0.552*
Mean	0.912	0.892	0.851	0.933	0.929	0.935	0.736	0.921
Observations	18,713	18,515	19,289	19,788	19,643	19,748	19,733	12,310

Notes: The sample is restricted to women. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, based on unadjusted p-values. Adjusted p-values, based on the method of Benjamini Hochberg method, are reported in italics. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, education education squared for wife/husbands.

Table 22. The effect of minimum wage on household decision making, cont'd. (FE and SD)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	**Money for monthly savings**	**Contraception**	***Bargaining power***	**Children's clothes**	**Children's education**	**Children's health**	***Decisions regarding children***	**On spouse work**
				A. Fixed Effects				
	-0.106 **	-0.017	-0.044 *	-0.012	-0.043	-0.067 **	-0.042	0.047
	(0.053)	(0.031)	(0.026)	(0.029)	(0.050)	(0.027)	(0.030)	(0.067)
	0.217	*0.731*		*0.731*	*0.731*	*0.188*		*0.731*
				B. Spatial Differencing				
25 miles	-0.031	-0.023	-0.034	0.007	-0.011	-0.001	-0.006	0.005
	(0.034)	(0.035)	(0.024)	(0.049)	(0.045)	(0.028)	(0.024)	(0.035)
	0.805	*0.900*		*0.962*	*0.962*	*0.962*		*0.962*
30 miles	-0.075	-0.030	-0.027	0.007	-0.004	-0.004	-0.002	0.012
	(0.052)	(0.037)	(0.030)	(0.036)	(0.064)	(0.030)	(0.032)	(0.040)
	0.723	*0.944*		*0.944*	*0.944*	*0.944*		*0.944*
35 miles	0.006	0.026	0.023	0.031 ***	0.031	0.032 *	0.031	0.097 **
	(0.062)	(0.029)	(0.025)	(0.011)	(0.047)	(0.019)	(0.022)	(0.046)
	0.926	*0.733*		*0.024*	*0.792*	*0.332*		*0.167*
40 miles	-0.007	0.020	0.005	0.024 *	0.026	0.014	0.022	0.059
	(0.058)	(0.027)	(0.025)	(0.014)	(0.049)	(0.020)	(0.024)	(0.043)
	0.927	*0.927*		*0.867*	*0.927*	*0.927*		*0.867*
60 miles	0.036	0.024	0.015	0.023 **	0.025	0.001	0.015	0.079 **
	(0.036)	(0.023)	(0.018)	(0.011)	(0.027)	(0.012)	(0.011)	(0.031)
	0.575	*0.575*		*0.152*	*0.575*	*0.925*		*0.152*
80 miles	0.004	-0.006	-0.014	0.015	-0.006	-0.017	-0.003	0.069 *
	(0.030)	(0.024)	(0.019)	(0.010)	(0.035)	(0.014)	(0.017)	(0.039)
	0.916	*0.916*		*0.552*	*0.916*	*0.563*		*0.372*
Mean	0.878	0.935	0.890	0.944	0.920	0.947	0.936	0.728
Observations	10,723	15,728	19,858	17,453	17,733	18,403	18,532	19,813

Notes: The sample is restricted to women. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, based on unadjusted p-values. Adjusted p-values, based on the method of Benjamini Hochberg method, are reported in italics. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, education education squared for wife/husbands.

Table 23. The effect of minimum wage on redefined DM indicators (FE and DSD)

	Expenditure							
VARIABLES	**(1) Money given to wife's family**	**(2) Money given to husband's family**	**(3) Large Expenses**	**(4) Gifts for parties**	**(5) Routine purchases**	**(6) Wife's clothes**	**(7) Husband's clothes**	**(8) Money for monthly arisan**
				A. Fixed Effects				
	-0.009	0.007	-0.017	-0.030	0.113	0.034	0.132 *	0.054
	(0.031)	(0.044)	(0.037)	(0.068)	(0.116)	(0.102)	(0.076)	(0.088)
	0.874	*0.874*	*0.874*	*0.874*	*0.874*	*0.874*	*0.874*	*0.874*
				B. Difference in Spatial Differences				
25 miles	-0.082	0.005	-0.026	-0.278 ***	0.016	-0.034	-0.108	-0.123
	(0.088)	(0.046)	(0.076)	(0.077)	(0.182)	(0.100)	(0.070)	(0.142)
	0.674	*0.935*	*0.935*	*0.002*	*0.935*	*0.935*	*0.439*	*0.674*
30 miles	-0.112	-0.046	0.007	-0.174 **	0.019	-0.019	-0.138 **	-0.025
	(0.100)	(0.044)	(0.063)	(0.073)	(0.140)	(0.092)	(0.063)	(0.114)
	0.595	*0.595*	*0.906*	*0.120*	*0.906*	*0.906*	*0.128*	*0.906*
35 miles	-0.050	0.001	0.046	-0.094	0.075	0.054	-0.074	0.082
	(0.083)	(0.044)	(0.037)	(0.076)	(0.094)	(0.073)	(0.059)	(0.065)
	0.587	*0.974*	*0.422*	*0.422*	*0.538*	*0.538*	*0.422*	*0.422*
40 miles	-0.039	-0.009	0.053	-0.159 **	-0.014	-0.002	-0.042	-0.053
	(0.078)	(0.027)	(0.035)	(0.072)	(0.107)	(0.060)	(0.069)	(0.063)
	0.789	*0.856*	*0.326*	*0.165*	*0.963*	*0.974*	*0.761*	*0.643*
60 miles	-0.042	-0.001	-0.001	-0.133 **	0.016	-0.024	-0.011	-0.182 ***
	(0.065)	(0.027)	(0.045)	(0.061)	(0.097)	(0.056)	(0.071)	(0.045)
	0.807	*0.987*	*0.987*	*0.137*	*0.987*	*0.932*	*0.987*	*0.001*
80 miles	-0.002	0.042	-0.006	-0.089	0.076	-0.039	0.028	-0.179 ***
	(0.065)	(0.041)	(0.039)	(0.058)	(0.075)	(0.067)	(0.057)	(0.044)
	0.979	*0.441*	*0.955*	*0.361*	*0.441*	*0.713*	*0.734*	*0.000*
Mean	0.865	0.895	0.899	0.807	0.281	0.377	0.664	0.583
Observations	18,713	18,515	19,289	19,788	19,643	19,748	19,733	12,310

Notes: The sample is restricted to women. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, based on unadjusted p-values. Adjusted p-values, based on the method of Benjamini Hochberg method, are reported in italics. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, education education squared for wife/husbands.

Table 24. The effect of minimum wage on redefined DM indicators, cont'd. (FE and DSD)

	(1)		(2)		(3)		(4)	(5)		(6)		(7)		(8)
VARIABLES	**Money for monthly savings**		**Contraception**		***Bargaining power***		**Children's clothes**	**Children's education**		**Children's health**		***Decisions regarding children***		**On spouse work**
							A. Fixed Effects							
	0.102		-0.077		0.023		0.075	0.032		0.013		0.041		0.006
	(0.100)		(0.088)		(0.038)		(0.077)	(0.029)		(0.056)		(0.048)		(0.032)
	0.874		*0.874*				*0.874*	*0.874*		*0.874*				*0.874*
							B. Difference in Spatial Differences							
25 miles	-0.259	***	-0.403	***	-0.103	***	0.049	0.084		-0.007		0.029		-0.039
	(0.087)		(0.086)		(0.019)		(0.042)	(0.065)		(0.091)		(0.065)		(0.058)
	0.014		*0.000*				*0.556*	*0.556*		*0.935*				*0.778*
30 miles	-0.096	*	-0.181	**	-0.063	***	0.067	0.074		0.047		0.049		-0.064
	(0.055)		(0.073)		(0.014)		(0.089)	(0.052)		(0.072)		(0.065)		(0.068)
	0.293		*0.120*				*0.702*	*0.437*		*0.726*				*0.602*
35 miles	-0.075		-0.079		-0.001		0.086	0.098	**	0.131	**	0.108	**	-0.072
	(0.070)		(0.070)		(0.035)		(0.069)	(0.047)		(0.055)		(0.047)		(0.070)
	0.422		*0.422*				*0.422*	*0.263*		*0.241*				*0.422*
40 miles	-0.155	**	-0.097		-0.044		0.064	0.072	**	0.106	**	0.083	*	-0.086
	(0.077)		(0.098)		(0.041)		(0.078)	(0.032)		(0.053)		(0.043)		(0.058)
	0.165		*0.642*				*0.643*	*0.165*		*0.165*				*0.326*
60 miles	-0.138	**	-0.096		-0.045		0.043	0.056		0.064	*	0.059		-0.051
	(0.060)		(0.110)		(0.041)		(0.067)	(0.040)		(0.035)		(0.039)		(0.033)
	0.137		*0.769*				*0.807*	*0.361*		*0.239*				*0.349*
80 miles	-0.062		-0.114		-0.015		0.083	0.063	*	0.083	***	0.083	**	-0.048
	(0.042)		(0.080)		(0.033)		(0.079)	(0.034)		(0.019)		(0.035)		(0.037)
	0.361		*0.361*				*0.441*	*0.304*		*0.000*				*0.374*
Mean	0.692		0.685		0.673		0.549	0.837		0.817		0.736		0.933
Observations	10,723		15,728		19,858		17,453	17,733		18,403		18,532		19,813

Notes: The sample is restricted to women. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, based on unadjusted p-values. Adjusted p-values, based on the method of Benjamini Hochberg method, are reported in italics. Controls: household assets belonging to wife and to husband, dummy variable for urban/rural residence, age and age squared, education education squared for wife/husbands.