



MISUM

NO. 2021-04, NOV 2021

WORKING PAPER SERIES

UNEMPLOYMENT AND INTRA- HOUSEHOLD DYNAMICS: THE EFFECT OF MALE JOB LOSS ON INTIMATE PARTNER VIOLENCE IN UGANDA

Cristina Clerici

Mistra Center for Sustainable Markets (Misum)
Stockholm School of Economics

Stefano Tripodi

Copenhagen Business School

Unemployment and Intra-Household Dynamics: the Effect of Male Job Loss on Intimate Partner Violence in Uganda*

Cristina Clerici[†] Stefano Tripodi[‡]

November 2, 2021

Abstract

Negative economic shocks have the potential to affect intra-household dynamics and the risk of Intimate Partner Violence (IPV). The implementation of the COVID-19 lockdown in Uganda creates exogenous variation in employment status and allows us to compare the incidence of violence among employed women whose partners' occupational sectors were or were not shut down. We find that male unemployment increases the likelihood of experiencing physical violence (both sexual abuse and beating) by 4.9 percentage points. The effect is observed right at the onset of the unemployment spell, but vanishes after the economic shock is absorbed.

JEL codes: D13, I31, J12, J16, J60

Keywords: unemployment, domestic violence, Uganda, COVID-19

*The analysis is registered at osf.io/5az79 and the pre-analysis plan was uploaded on November 4, 2020, before the end of the data collection and the beginning of the analysis. The study obtained ethical approval from Mildmay Uganda research and Ethics Committee (MUREC) on August 17, 2020 with # REC REF 0407-2020 and by the Uganda National Council for Science and Technology (UNCST) with reference SS553ES. We acknowledge generous funding from the Mistra Center for Sustainable Markets (Misum). We are thankful to International Growth Research and Evaluation Center (IGREC), Ian Kusimakwe, Assy Nakyajja and the enumeration team for their tireless work. We also express our gratitude to Iacopo Bianchi, Martina Björkman Nyqvist, Jonathan de Quidt, Donald Green, Birthe Larsen, Battista Severgnini, Abhijeet Singh, Robert Östling, seminar participants at Stockholm School of Economics and Copenhagen Business School, as well as SUDSWEC conference's participants for the helpful comments. This work would have not been possible without the collaboration and time of our 809 respondents.

[†]Stockholm School of Economics and Misum, cristina.clerici@phdstudent.hhs.se

[‡]Copenhagen Business School, st.eco@cbs.dk

1 Introduction

Households in low-income countries are vulnerable to negative economic shocks, such as illnesses, unforeseen weather events and sudden unemployment. Negative economic shocks in general have many welfare-diminishing consequences, including a worsening of physical and mental health (Rataj et al., 2016; de Quidt and Haushofer, 2019), and loss of employment in particular is associated with low life satisfaction, depression and suicide (Mendolia, 2014). These shocks may affect intra-household dynamics, especially when the relative economic status of the spouses shifts (Qian, 2008).

The interplay of these changes and the worsened economic conditions can increase the risk of Intimate Partner Violence (IPV).¹ In 2018, in 27% of the reported acts of violence against women the perpetrator was an intimate partner (WHO, 2021). In 2019 alone, about 243 million women and girls have been subjected to sexual and/or physical violence committed by an intimate partner (UNDP, 2020a). IPV has severe negative consequences on women’s health and labor market outcomes (Sabia et al., 2013), as well as on their children (Aizer, 2011; Rawlings and Siddique, 2020).²

In this paper, we study the impact of male job disruption on the incidence of IPV among female food vendors in Uganda. We collect unique individual-level data on the incidence of IPV among female food vendors operating in markets of Kampala, Mukono and Wakiso districts and combine them with information on husbands’ employment sector.³ We exploit the exogenous halt of some predetermined husbands’ employment sectors caused by the COVID-19 Government containment measures, while keeping women’s employment status fixed. We compare two groups of women with similar level of pre-lockdown violence incidence: women whose partners’ occupations were allowed to operate during the lockdown (*Non-affected group*) and women whose partners’ occupations were shut down during the lockdown (*Affected group*). This strategy allows us to identify the causal effect of male job disruption on IPV.

The reduced form results suggest a substantial higher likelihood of physical IPV (broadly defined as including acts of beating as well as sexual violence) for women in the *Affected group*. The effect of 4.9 percentage points is large in magnitude and

¹ The World Health Organization defines Intimate Partner Violence as “any behavior within an intimate relationship that causes physical, psychological or sexual harm to those in that relationship”.

² IPV is also a violation of rights and fundamental freedoms of women, as well as an obstacle to achieve equality, development and peace (UN, 1993).

³ We consider both formally married and cohabiting couples, however in the remaining of the paper we will use the terms *married*, *husband* and *wife* for simplicity.

corresponds to a 45% increase in IPV prevalence compared to the *Non-affected group* mean of 10.8%.

Under the assumption that the Government directives affect IPV only through the husbands' occupational status, we estimate the Local Average Treatment Effect (LATE) by instrumenting the endogenous male partner's employment status during the lockdown with the exogenous enactment of the Government policies, and we see that the incidence of physical IPV for complier households is 10.7 percentage points larger in the *Affected group* with respect to their not affected counterpart. Husband's unemployment does not affect physical violence post-lockdown (in August and September 2020), suggesting that once the economic shock is absorbed, violence subsides. This is consistent with the fact that 83.3% of husbands were back to work in November 2020. Finally, we do not see any change in emotional violence and we lack the statistical power necessary to detect heterogeneous responses.

We explore the mechanisms behind these findings in a descriptive way. Our results are consistent with several theories. First, they match predictions from extraction theory, according to which the unemployed husband might want to extract resources from his wife using violence as an instrument (Bloch and Rao, 2002). Second, employment might shape norms and have a symbolic value, so the increase in violence we observe could be a way to restore the cultural norms, as predicted by male backlash theory (Macmillan and Gartner, 1999). Finally, violence might be driven by an increase in husband's stress levels (Fox et al., 2002) and by the higher amount of time the couple spend together. While we cannot disentangle between extraction and male backlash, our data seem to exclude stress and exposure. We do not find evidence that husbands of *Affected* women increased their alcohol consumption, a coping mechanism for stress, and that these women spent more time at the market to avoid being home with an abusive partner.

Our paper contributes to the broad literature on employment, relative income and intra-household dynamics (Qian, 2008; Anderson and Eswaran, 2009; Antman, 2014; Majlesi, 2016). More specifically, we refer to the literature on the relationship between economic and labor market conditions and IPV in quasi-experimental settings, which is far from conclusive and is summarized in detail in Appendix Table A1. Most papers use aggregate-level economic shocks or examine the effect of cash transfers. Bhalotra et al. (2021a) exploit a natural experiment in Brazil and find that both male and female unemployment are associated with an increase in the incidence of domestic abuse. To the best of our knowledge, ours is the first study set in East Africa leveraging a natural experiment to provide exogenous variation in one partner's employment status and to use individual-level data for both unem-

ployment and incidence of IPV. Moreover, thanks to our unique sample, we are able to show that even employed and empowered women are not fully insured against the effect of a negative income shock.

The remainder of the paper is structured as follows. In Section 2, we briefly describe the Ugandan setting and the COVID-19 containment measures implemented. In Section 3, we describe our sample and data. In Sections 4 and 5, we present and discuss our empirical strategy and the main results of this paper. Finally, Section 6 concludes.

2 Setting and Timeline

Our study is set in Uganda, an East African country with a population of about 45 million people. Uganda is low (159th) in the Gender Inequality Index ranking. Women lag behind men in several dimensions: secondary school attainment (6.9% for women vs. 11.1% for men), unemployment rate (13.2% vs. 5.8%) and any type of land ownership (40.4% vs. 59.9%), as reported by the Ugandan Bureau of Statistics in 2017.

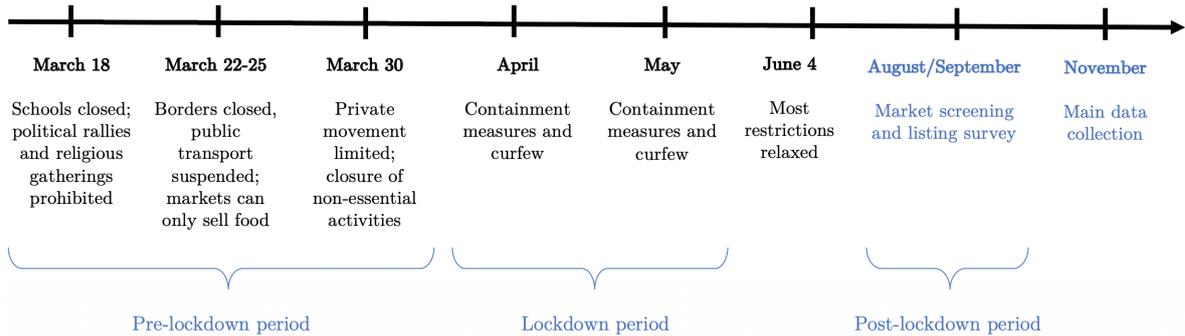
In 2019 about 50% of women aged 15-49 have experienced violence by an intimate partner in Uganda (UNDP, 2020b). Moreover, violence against women is widely accepted, with 40% of women agreeing that a husband is justified in beating his wife if she neglects the children and 31% agreeing that he is justified in doing that if she goes out without telling him (DHS Program, 2016). About 43% of women report to have been victims of some form of violence, either emotional, physical or sexual. In a sub-sample of female DHS respondents similar to ours (that is, working women, living in urban areas, married and older than 18), about a third report having experienced emotional or less-severe violence, while 13% and 16% are victims of more severe violence and sexual abuse, respectively (Table D1, Panel A). In Panel B, we aggregate the data into 3 macro categories, as we do in our main results. 42% of women report at least a form of violence, while 31% and 32% reported emotional and physical/sexual violence, respectively.

We examine the impact of male unemployment on IPV exploiting the containment measures imposed by the Government in March 2020 in response to the COVID-19 pandemic. In particular, all non essential activities were suspended from the end of March until the end of May (Figure 1).⁴ The suspension affected workers in

⁴The list of essential services included: medical, veterinary, telephones, door-to-door delivery, banks, private security companies, cleaning, garbage collection, fire-brigade, petrol stations, water departments and some Kampala Capital City Authority (KCCA) and Uganda Revenue Authority (URA) services.

public transport, Government sector, non-essential shops, factories and construction. Only essential sectors (which include market food vendors) could continue operating, provided that they respected some Standard Operating Procedures (SOPs).⁵ While the knowledge and enforcement of laws in the country is sometimes poor, the restriction measures were widely known and strictly applied by the police.⁶

FIGURE 1
TIMELINE OF LOCKDOWN AND RESEARCH ACTIVITIES



We collect the information about the restrictions imposed in Uganda from the President’s speeches as reported on <https://www.yowerikuseveni.com>. More details can be found at <https://uglockdown.ga>, <https://www.pmldaily.com> and <http://statehouse.go.ug>.

3 Sample and Data

3.1 Data

Our data collection involved three main activities: the market survey, the listing survey and our main survey, the women survey (see Figure 1 for a complete timeline).

During the market survey, we asked the chairpersons of the main markets in Kampala, Mukono and Wakiso districts to compile a comprehensive list of female vendors selling food or food-related items (e.g. charcoal and firewood) in their markets.⁷ We successfully reached 35 out of 54 market chairpersons.

⁵ One of the SOPs specific for food vendors was the request to spend the night at the market, to avoid commuting.

⁶ The President announced the restrictions through public speeches days in advance and broadcasted on tv, radio and social media. Police was heavily deployed in the main towns with the instruction of enforcing the directives and reports of police violence were not uncommon <https://www.monitor.co.ug/News/National/Stop-beating-Ugandans-Kyambadde-tells-security-personnel/688334-5505020-4hu639z/index.html>; <https://www.theguardian.com/global-development/2020/may/28/i-realised-my-body-was-burning-police-brutality-in-uganda-lockdown>

⁷ Selling food-related items was allowed during the lockdown period. In the remaining of the paper, we will talk about “food vendors” for simplicity.

After digitizing the contacts, through the listing survey we screened out women who did not meet some pre-defined eligibility criteria: being older than 18, being married or cohabiting with a partner at the onset of the lockdown, having worked in the market during the lockdown period and being the sole user of a mobile phone. In addition, we asked eligible respondents about their husband’s occupation before April 2020 and whether he worked during April and May 2020.

Out of the 2,962 respondents contacted during the listing, 950 respondents satisfied all eligibility criteria and 809 of them were successfully interviewed during the main survey. The high follow-up rate (85%) mitigates concerns over selective attrition common with phone surveys (Mahmud and Riley, 2021); we provided only general information to the respondents before the questions were asked, so we do not believe participation is correlated to IPV attitudes or experiences. Moreover, we do not find that the likelihood of having worked in the market during the lockdown (as reported during the listing survey) is significantly correlated with the husband’s employment status during the lockdown, which represents our main source of variation (as shown in Appendix Table E1).

The core of the main survey asked information about episodes of violence occurred during the COVID-19 lockdown period, namely April and May 2020. We took the violence questions from the Domestic Violence Module of the DHS. Specifically, we asked questions about 9 possible episodes of violence the respondent might have experienced in either April or May (the exact phrasing is reported in Appendix Section B). We aggregate this information into three macro categories and we create a binary variable equal to 1 if the respondent experienced at least one episode of violence within a macro category in either April or May 2020. We thus have an indication on whether the respondents experienced any violence at all, any emotional violence or any physical violence (which includes beating and sexual abuse). We believe that physical violence is the most precise indicator, as emotional violence is a less objective concept which can be more dependent on interpretation, it is something that women might get used to with time or might have more troubles identifying and reporting, as it could also be unintentional.

With a more general phrasing, we also asked about episodes of physical and emotional violence before April 2020, i.e., during the pre-COVID-19 lockdown period, and in August or September 2020, i.e., during the post-COVID-19 lockdown period, after the Ugandan authorities lifted the restrictions. Specifically, we asked about “physical violence” and “emotional violence” in general without detailing the types of abuse. This allows us to control for baseline (i.e., pre-COVID-19 lockdown) violence, as well as to study longer-term effects. A concern related to retrospective

questions is the possibility of recall bias. We argue that this is not a problem, as it is reasonable to expect women to clearly remember dramatic events like episodes of physical abuse.

We also collected some socio-economic information on the respondents and their husbands. Specifically, we asked about individual educational attainment and gender norms⁸, respondent’s religion, husband’s current employment status, husband’s alcohol consumption, any type of external support received during the COVID-19 lockdown period and individual’s weekly incomes before and during the lockdown. To a subset of respondents we also asked their partners’ weekly contribution to the household expenses.⁹ Note that, because we decided to interview respondents via phone and during working hours, we could only ask a limited amount of information.¹⁰

To make sure that both the field staff and the respondents were not at risk of contracting COVID-19, we collected the data through a phone survey. We describe in detail the ethical considerations related to conducting this kind of survey by phone, and the precautions we adopted in Appendix Section C. Importantly, we do not believe that collecting data by phone had a significant impact on data quality and response. First of all, we exclude the risk of *coverage bias* as all food vendors have access to a phone. Second, while we cannot rule out the presence of bias in the lists that market chairpersons compiled, we can safely assume the bias to be orthogonal to our main explanatory variable, as chairpersons were not aware of the aim of the project. Finally, there is evidence suggesting that collecting data by phone does not compromise their quality and reliability (McNutt and Lee, 2000; De Leeuw, 2004; Black et al., 2006; Mahfoud et al., 2015; Nandi and Platt, 2017; Egger et al., 2021).

In order to preserve statistical power, we impute missing values. In Appendix Section E.2 we describe the imputation procedures in detail. We also show that the presence of missing values is balanced across groups and that our findings are robust to non-imputation. Outliers are not a big concern in this study, so we employ a 99% winsorization only for respondent’s income pre-lockdown.

⁸ We approximate gender norms by asking the respondent whether she and her husband respectively agree with the statement “*If a woman earns more money than her husband, it’s almost certain to cause problems*”.

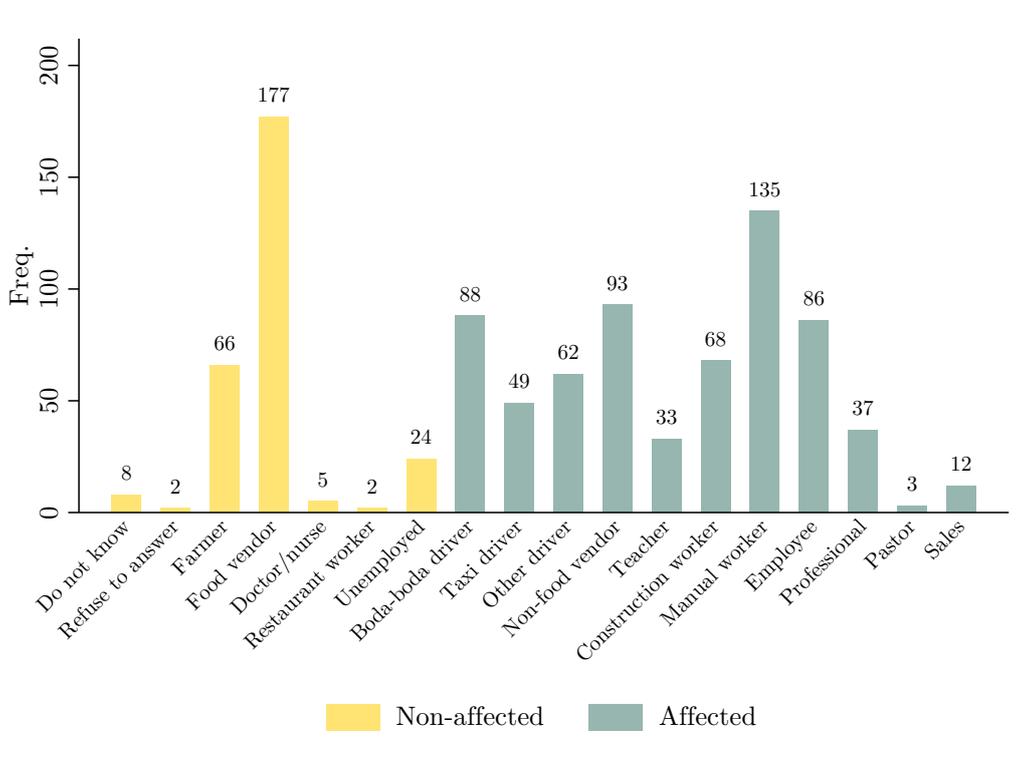
⁹ During fieldwork we realized that a significant fraction of the respondents did not know and could not estimate their partners’ income, as common in low-income countries (Duflo and Udry, 2004; Ziparo, 2020). In deviation from the pre-analysis plan, we have therefore decided not to use these variables (husband’s income and household’s total income) in our analysis.

¹⁰ All information collected is self-reported by the respondents, since we decided not to interview their husbands to minimize exposure to possible retaliation behaviors.

3.2 Sample

Given the husband’s occupation at the onset of the COVID 19 lockdown, we categorize each respondent to be part of the *Affected* or *Non-affected group*, based on whether their husband was or was not allowed to work during the COVID-19 lockdown, following Government directives. This division constitutes our main explanatory variable. According to our categorization, 666 respondents belong to the *Affected group*, while 284 belong to the *Non-affected group*. The distribution of husbands’ occupations and the categorization into *Affected* and *Non-affected group*, is shown in Figure 2.

FIGURE 2
HUSBAND OCCUPATION AND GROUP CATEGORIZATION



The figure shows the division of respondents into *Affected* and *Non-affected* groups based on their husbands’ job.

Table 1 shows summary statistics and across-groups balance. We do not observe significant differences in the prevalence of physical and emotional violence in the pre-COVID-19 lockdown period. Comparing our respondents to similar women in the DHS sample (see Appendix Tables D1 and D2), we note a much lower prevalence of pre-lockdown physical violence in our sample even when looking at urban women only, while the prevalence of emotional violence is closer. Additionally, women in our sample seem to be more empowered than women in the DHS sample, partly because

of our sampling criteria. In terms of income, respondents reported median weekly earnings before the lockdown of about 60,000 UGX, which correspond roughly to 257,000 UGX (195 USD PPP) per month, while the Ugandan Bureau of Statistics reports median monthly cash earnings for a woman in paid employment to be around 160,000 UGX in 2018/2019 (UBOS, 2019). The fact that women in our sample appear to be more empowered than the average suggests that they could be more insured against physical violence when their household is facing a negative economic shock.

The groups are also balanced on some of the common correlates of domestic violence (respondent's education, respondent and partner's gender norms, partner's alcohol consumption). The comparability of gender norms helps overcome concerns on the fact that the high number of husbands working as food vendors and farmers in the *Non-affected group* could signal different views and behaviors towards women. Moreover, we see that the groups are balanced also when looking at some potential attenuating factors. In particular, we do not observe any across-groups difference in the average number of nights spent in the market during April and May 2020 and in respondent's marital status at the time of the main survey.¹¹ However, we observe that women belonging to the *Non-affected group* are on average older, have a higher income and have less educated partners, compared to women belonging to the *Affected group*. Since these characteristics might be correlated with the prevalence of violence, we control for them in all our specifications.

Our setting is interesting for two main reasons. First, female food vendors have higher income than the average Ugandan woman. We thus ask whether this relatively higher economic empowerment is enough to insure them against IPV when facing an economic shock. Secondly, unemployment shocks are common in Uganda, since most of the labor force (89.4%, International Labour Organization (ILO) (2017)) engage in informal jobs with very low level of protection. We can then examine their effect in a population frequently exposed to short or long unemployment spells.

4 Empirics

4.1 Empirical Strategy

In our analysis we look at the effect of short-term male unemployment on IPV controlling for the baseline (pre-lockdown) incidence of violence. Equation 1 is the

¹¹ 34 respondents who were married during the listing survey reported to have interrupted the relationship when interviewed in November 2020. We keep them in the sample as we do not know the exact time of the break-up.

TABLE 1
DESCRIPTIVE CHARACTERISTICS AND BALANCE TESTS

	(1) Overall	(2) Non- affected	(3) Affected	(4) Diff.	(5) p-val.	(6) Norm. Diff.	(7) N
<i>Panel A: IPV and gender norms</i>							
Any violence pre-lockdown	0.483 (0.500)	0.494 (0.501)	0.479 (0.500)	-0.009 (0.043)	0.845	0.029	809
Any PHYSICAL violence pre-lockdown	0.087 (0.281)	0.104 (0.306)	0.080 (0.271)	-0.024 (0.020)	0.224	0.084	809
Any EMOTIONAL violence pre-lockdown	0.485 (0.500)	0.494 (0.501)	0.481 (0.500)	-0.007 (0.044)	0.875	0.025	809
Resp.: woman working causes problems	0.583 (0.493)	0.606 (0.490)	0.574 (0.495)	-0.031 (0.043)	0.467	0.064	809
Husb.: woman working causes problems	0.555 (0.497)	0.554 (0.498)	0.555 (0.497)	-0.001 (0.035)	0.970	-0.003	809
<i>Panel B: General information</i>							
Respondent income pre-lockdown	86.918 (84.924)	99.119 (87.796)	82.042 (83.327)	-18.779 (7.068)	0.012	0.200	809
Age	36.899 (8.787)	37.939 (9.742)	36.483 (8.347)	-1.745 (0.821)	0.041	0.161	809
Religion: christian	0.729 (0.445)	0.714 (0.453)	0.735 (0.442)	0.023 (0.034)	0.499	-0.047	809
More than primary education	0.503 (0.500)	0.463 (0.500)	0.519 (0.500)	0.036 (0.044)	0.418	-0.112	809
Husb. more than primary education	0.761 (0.426)	0.675 (0.469)	0.796 (0.403)	0.106 (0.037)	0.007	-0.275	809
Nights spent in the market	3.367 (2.939)	3.338 (2.919)	3.379 (2.950)	0.094 (0.277)	0.736	-0.014	809
She is married	0.958 (0.201)	0.974 (0.159)	0.952 (0.215)	-0.019 (0.017)	0.273	0.119	809
Husband usually drinks	0.224 (0.417)	0.203 (0.403)	0.232 (0.422)	0.032 (0.029)	0.287	-0.069	809
<i>Panel C: Food items sold</i>							
Sell - Food	0.265 (0.441)	0.264 (0.442)	0.265 (0.442)	0.010 (0.039)	0.789	-0.001	809
Sell - Other dry food	0.044 (0.206)	0.048 (0.213)	0.043 (0.204)	-0.008 (0.020)	0.673	0.021	809
Sell - Fruits or vegetables	0.553 (0.498)	0.649 (0.478)	0.514 (0.500)	-0.108 (0.024)	0.000	0.277	809
Sell - Fish, meat or chicken	0.082 (0.274)	0.091 (0.288)	0.078 (0.268)	-0.018 (0.025)	0.475	0.047	809
Sell - Chapati, rolex, mandazi or samosas	0.011 (0.105)	0.009 (0.093)	0.012 (0.109)	0.006 (0.010)	0.539	-0.034	809
Sell - Restaurant	0.094 (0.292)	0.035 (0.183)	0.118 (0.322)	0.070 (0.023)	0.005	-0.317	809
Sell - Other edibles	0.019 (0.135)	0.022 (0.146)	0.017 (0.131)	-0.005 (0.009)	0.591	0.031	809
Sell - Charcoal or firewood	0.041 (0.198)	0.035 (0.183)	0.043 (0.204)	0.002 (0.014)	0.883	-0.045	809
Sell - Other non-edibles	0.017 (0.130)	0.017 (0.131)	0.017 (0.131)	0.002 (0.011)	0.881	0.000	809
Sell - Drinks or juice	0.028 (0.166)	0.017 (0.131)	0.033 (0.178)	0.012 (0.015)	0.403	-0.099	809
F-stat							2.377***

The table shows summary statistics and mean differences for selected variables across groups. Income is in '000 Ugandan Shillings. *Affected - Non-affected* differences and *p*-values are obtained by regressing each variable on a group indicator, controlling for market fixed effects. *F*-stat is the *F*-statistic of a joint significance test resulting from regressing all predictors on the *Affected* status. Robust standard errors for individual regressions clustered at the market level are in parentheses in column (4).

reduced form model estimating the causal effect of the variable a_{im} on y_{imt} .

$$y_{imt} = \beta_0 + \beta_1 a_{im} + \beta_2 W_{im} + \beta_3 X_{im} + \beta_4 y_{imt-1} + age_i + \delta_m + \varepsilon_{imt} \quad (1)$$

where y_{imt} and y_{imt-1} are dummy variables indicating whether the woman i in market m experienced violence during the lockdown and before the lockdown respectively, a_{im} indicates whether the husband’s sector was not allowed to operate during the lockdown (i.e., whether the respondent is in the *Affected* group), W_{im} and X_{im} are vectors of woman and husband’s characteristics, δ_m and age_i are market and age fixed effects, and ε_{imt} is the error term. We control for age fixed effects to take into account the possibility of a non-linear effect of age on the incidence of violence.¹² To account for potential correlation in unobservables affecting violence perception or violence response across women operating in the same market, we cluster standard errors at the level of the market, our primary sampling unit. While we opt for this more conservative approach, results are unchanged without clustering.

In all specifications, we control for the occurrence of violence pre-lockdown, the unbalanced characteristics between the groups, and for the missing values’ replacements we made. Additionally, we report estimates with a wider set of controls. These controls include respondent’s and husband’s education, respondent’s religion, respondent’s type of food stall in the market, the number of nights the respondent slept (on average) in the market and a proxy for gender norms.

The coefficient of interest is β_1 , which estimates an intent to treat (ITT) effect, as it is possible that men who formally could not work found other occupations, or men allowed to work decided not to do so.¹³

Under the assumption that the job occupations categorization done by the Government affects violence only through the husbands’ occupational status, we can then estimate the Local Average Treatment Effect (LATE) by using the enactment of Government restrictions a_{im} as an instrument for the actual husband occupation status during the lockdown e_{im} as reported by the respondent, and estimate a 2SLS model.

¹² Non-linear effects could arise if, for instance, older women change their perception of violence or develop a much higher tolerance for violence with time, or if the likelihood of leaving an abusive relationship decreases non-linearly with age (Ericsson, 2020).

¹³ In the pre-registration of the study we specified that we would have adjusted p -values for multiple hypotheses testing, since we planned to test changes in the occurrence and frequency of IPV for all the IPV questions, both independently and grouped together as indices. However, because of the limited amount of observations available for each specific question, we study only three main categories: violence, physical violence and emotional violence. Thus, we believe that the number of hypotheses we effectively test for is not large enough to require any correction.

We do so by estimating the following first-stage specification

$$e_{im} = \beta_0 + \beta_1 a_{im} + \beta_2 W_{im} + \beta_3 X_{im} + \beta_4 y_{imt-1} + age_i + \delta_m + \eta_{imt} \quad (2)$$

and second-stage specification

$$y_{imt} = \gamma_0 + \gamma_1 \hat{e}_{im} + \gamma_2 W_{im} + \gamma_3 X_{im} + \gamma_4 y_{imt-1} + age_i + \delta_m + \varepsilon_{imt} \quad (3)$$

4.2 Identification

Our identification strategy builds on the lockdown measures described in Section 2. We exploit the exogenous variation in the short-term occupational status of the respondents' husbands provided by the fact that some job occupations were restricted during the COVID-19 lockdown (April and May 2020), while others were not. Since whether a job sector was or was not affected by the lockdown measures results from the Government directives, it is exogenous to our respondents. We compare *Affected* households, in which the male partner was (temporarily) unemployed in April and May 2020, to *Non-affected* households, in which the male partner could work during the same period. Since all eligible respondents worked as market vendors in April and May 2020, after controlling for all unbalanced characteristics, the only relevant difference between the two groups is the male partner's short-term occupational status during the lockdown period. This identifies the causal effect of the husband's temporary job loss on IPV in our sample. The endogenous actual employment status (i.e., whether a man actually worked or not, irrespective of the Government regulations) varies not only across, but also within partner occupations. This suggests the presence of "non compliers" in our sample, thus we estimate the effect also for compliers only.

For our identification strategy to be valid, we assume for each household:

- A.1 No anticipation effect: the husband could not switch between occupation sectors in anticipation of the lockdown
- A.2 The husband selection into an occupation considered essential in the COVID-19 Government measures is exogenous with respect to intimate partner violence

The first assumption is easy to justify, as the restrictions introduced in March 2020 were announced unexpectedly and became effective immediately, giving little time to adjust and making a change of occupation difficult. Moreover, since the

whole country was in a strict lockdown with an early curfew, we can safely consider the opportunities of finding alternative jobs scarce.

The second assumption appears verified when looking at pre-lockdown occurrences of violence. Note that we are only able to distinguish between physical (excluding sexual) and emotional violence, and we only asked a general question, as discussed in Section 3.2. As shown in Table 1, pre-lockdown violence is not statistically significant different across the two groups. Specifically, while the prevalence of emotional violence is very similar for the *Non-affected* and *Affected* households (48.5% and 49.4% respectively), when considering the prevalence of physical violence the difference is 2.4 percentage points, but not significant.

One might also worry that husband’s selection into a job occupation is correlated to violence habits or preferences. It is sensible that the choice of a job could depend on both observables and unobservables, such as idiosyncratic preferences for or attitudes towards IPV. It could be that individuals self-selecting into some occupations are by nature more prone to violence than those choosing to work in other occupations, or they become so as a result of their employment. We explore this issue in two ways. First, we check how male job occupations correlate with intimate partner violence in the 2016 DHS Uganda dataset, by restricting the sample to women similar to those in our sample and we find no striking differences in the likelihood of abuse among the job sectors considered (Figure D1 in Appendix). Second, we compare husband’s job occupation in our sample with respect to IPV before the lockdown was enacted and again we do not see significant differences between different husband’s job sectors (Figures D2 and D3 in Appendix).

5 Results

In this section we present and discuss our main results. In Figure F1 we show that during April and May 2020, 45.4% of the respondents reported having experienced at least one episode of abuse. Breaking down this result by category, 44% of the respondents reported emotional abuse and 13.3% reported physical violence, and almost all women physically abused were also emotionally abused, suggesting that the two types of violence act as complements. Finally, of the women having experienced at least an episode of violence in either April or May, only 40% say that they reported it to the authorities, an NGO or friends and family.

We turn to the effect of having a partner who temporarily lost his job due to the lockdown (being *Affected*) on the occurrence of violence.¹⁴

¹⁴ We define this unemployment shock “temporary” since after the containment measure were lifted,

TABLE 2
ESTIMATES OF HUSBAND'S TEMPORARY JOB LOSS ON INTIMATE
PARTNER VIOLENCE

	Physical		Emotional		Any	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Panel A: OLS Estimates						
Affected	0.049*	0.049*	0.008	0.008	0.011	0.011
	(0.025)	(0.026)	(0.036)	(0.031)	(0.035)	(0.031)
	[0.060]	[0.069]	[0.834]	[0.804]	[0.766]	[0.727]
Outcome pre-lockdown	0.282***	0.240***	0.273***	0.227***	0.283***	0.242***
	(0.053)	(0.048)	(0.034)	(0.029)	(0.032)	(0.029)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Non-affected Mean	0.108	0.108	0.437	0.437	0.446	0.446
R-squared	0.182	0.211	0.183	0.263	0.189	0.261
Observations	809	809	809	809	809	809
Panel B: 2SLS Estimates						
Husband did not work	0.108*	0.107*	0.022	0.022	0.029	0.029
	(0.060)	(0.061)	(0.077)	(0.066)	(0.076)	(0.068)
	[0.080]	[0.090]	[0.773]	[0.747]	[0.706]	[0.676]
First stage F-stat	102.487	99.824	102.922	100.672	102.592	100.230
Observations	808	808	808	808	808	808
Market and Age FE	Yes	Yes	Yes	Yes	Yes	Yes
Main Controls	Yes	Yes	Yes	Yes	Yes	Yes
Additional Controls	No	Yes	No	Yes	No	Yes

OLS and 2SLS models. Robust standard errors clustered at the market level parentheses, p -values in square brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. *Affected* indicates whether the woman's husband was employed in a sector restricted by the Government measures. *Outcome pre-lockdown* controls for the occurrence of physical, emotional or any violence in the pre-lockdown period. *Main controls* included are respondent's income in the pre-lockdown period, husband's education, and a binary variable indicating whether the respondent sells fruit and vegetables in the market. *Additional controls* include religion, respondent's education, nights spent at the market, gender norms, husband's alcohol consumption and goods sold at the market. Income is winsorized at the 99% level and in '000 Ugandan Shillings. *Non-affected mean* is the mean value of the outcome in the *Non-affected* group.

In Table 2 Panel A we show the effect of temporary male unemployment on the occurrence of different types of intimate partner violence. For physical and sexual violence combined (columns (i) and (ii)), temporary male unemployment is positively and significantly correlated with violence. The effect is strong in magnitude and corresponds to an increase of 4.9 percentage points (45%) compared to the mean of the *Non-affected* group. These estimates point in the same direction and are higher than what reported by Bhalotra et al. (2021b), who find that male job loss leads to a 30% increase in the likelihood of IPV. For emotional violence (columns (iii) and (iv)) and any violence (columns (v) and (vi)), the main coefficient is close to 0 and not statistically significant. The lack of significant effects on emotional violence is not surprising given that emotional violence is more subjective and prone to measurement issues. Moreover, this helps ruling out the possibility that our results on physical violence are due to some reporting bias. Finally, baseline violence is highly predictive of future violence: being victim of violence pre-lockdown (before March 2020) is associated with an increase in the likelihood of experiencing violence during the lockdown period by 22-25 percentage points. However, it is “new” violence that drives the effect we observe; when examining heterogeneous responses with respect to pre-lockdown violence (Table H3 in Appendix), we see that the coefficient of the interaction of *Affected* and past physical violence is not significant, while the coefficient for *Affected* is 0.051 and significant. This indicates that *Affected* women who had never experienced violence before became victims of abuse during the lockdown.

As much as the Government directives were implemented rigorously, the possibility of non-compliance remains. Some men could have found an alternative temporary occupation. Some others could have decided not to work, because they feared to be infected, because working was not profitable or because of lack of transportation means. While we do not have information on this specifically, we know whether each respondent’s husband did or did not work. The two-sided non-compliance is shown in Table E3 in Appendix. To estimate the impact of the economic restrictions on compliers, we adopt a 2SLS technique. In Panel B of Table 2 we show the instrumental variable results, which we interpret as a re-scaling of the previously discussed OLS results. The effect of male unemployment on violence is positive for every type of abuse, but only statistically significant for physical and sexual violence combined (columns (i) and (ii)). Again, the difference in prevalence of physical abuse across groups is large in magnitude and corresponds to an increase of about 79% over the mean of the *Non-affected* women whose husbands actually did not work. This

all *Affected* partners could go back to work.

evidence shows that short-term male unemployment significantly increases the likelihood that male partners commit physical and sexual abuse towards their spouses for a sample of women with relatively high economic empowerment.

These results are consistent with several theories and we can explore the potential mechanisms driving the results in a descriptive way. We examine the possibility of an economic motive behind the observed increase in violence. Some respondents could report their husbands' contribution to the weekly household expenses. We consider this as proxy of husbands' income and we see that, while contributions decreased for husbands in both groups compared to the pre-lockdown period, contributions of *Affected* women's husbands decreased by a larger extent (65% vs 57% reduction). Therefore, unemployed husbands might have used violence instrumentally, to extract resources from their spouses. Moreover, in line with the presence of a pure economic channel, in Table F3 we do not see any difference across groups in the amount of support received by the Government or NGOs.

Looking at the evolution of violence over time can also help to shed some light on the channel driving the results. In Table 3, we investigate the occurrence of physical and emotional violence post-lockdown (specifically, in August and September 2020), to understand whether the effect we observe is permanent in nature. While pre-lockdown violence is still highly predictive of violence in the post-lockdown period, our main coefficients are small and insignificant, suggesting a temporary impact of unemployment on violence. When the economic shock is absorbed (as in August and September), violence subsides.¹⁵ While it is only speculative, this suggests that the increase in violence is due to the economic shock and not to a change in norms, which would instead be more persistent.¹⁶

Furthermore, we are inclined to exclude that increased stress levels and increased exposure are the mechanisms driving the results. First, we do not see any difference across the two groups in husband's alcohol consumption during the lockdown, which would signal increased stress levels (Appendix Table F3). Second, although the unemployed husbands were potentially spending more time at home, the eligibility requirement for our sample implied that the respondents kept working outside the home. An increase in exposure is possible, but it is unlikely to be the main channel driving our results. We also check whether *Affected* women were more likely to spend more nights in the market, which could be used as a coping mechanism. We find

¹⁵ Due to the different phrasing of the questions we cannot compare the prevalence of violence before and after the lockdown.

¹⁶ One caveat relates to the inclusion of teachers and employees in the *Affected group*, following the official regulation. Men employed in these occupations were restricted from working but could have received the usual salary. In this case, a change in their status, inside or outside the household, could be driving the results.

TABLE 3
ESTIMATES OF HUSBAND'S TEMPORARY JOB LOSS ON
POST-LOCKDOWN INTIMATE PARTNER VIOLENCE

	Physical		Emotional		Any	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Panel A: OLS Estimates						
Affected	0.005 (0.011) [0.673]	0.003 (0.010) [0.737]	-0.033 (0.035) [0.350]	-0.032 (0.035) [0.364]	-0.029 (0.035) [0.411]	-0.029 (0.036) [0.410]
Outcome pre-lockdown	0.089** (0.035) [0.012]	0.081** (0.034) [0.016]	0.396*** (0.032) [0.000]	0.375*** (0.033) [0.000]	0.384*** (0.032) [0.000]	0.362*** (0.034) [0.000]
Non-affected Mean	0.022	0.022	0.333	0.333	0.333	0.333
R-squared	0.261	0.277	0.256	0.280	0.247	0.272
Observations	809	809	809	809	809	809
Panel B: 2SLS Estimates						
Husband did not work	0.010 (0.026) [0.700]	0.008 (0.025) [0.763]	-0.074 (0.068) [0.283]	-0.073 (0.066) [0.275]	-0.065 (0.066) [0.326]	-0.067 (0.065) [0.313]
First stage F-stat	102.487	99.824	102.922	100.672	102.592	100.230
Observations	808	808	808	808	808	808
Market and Age FE	Yes	Yes	Yes	Yes	Yes	Yes
Main Controls	Yes	Yes	Yes	Yes	Yes	Yes
Additional Controls	No	Yes	No	Yes	No	Yes

OLS and 2SLS models. Robust standard errors clustered at the market level in parentheses, p -values in square brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. *Affected* indicates whether the woman's husband was employed in a sector restricted by the Government measures. *Outcome pre-lockdown* controls for the occurrence of physical, emotional or any violence in the pre-lockdown period. *Main controls* included are respondent's income in the pre-lockdown period, husband's education, and a binary variable indicating whether the respondent sells fruit and vegetables in the market. *Additional controls* include religion, respondent's education, nights spent at the market, gender norms, husband's alcohol consumption and goods sold at the market. Income is winsorized at the 99% level and in '000 Ugandan Shillings. *Non-affected mean* is the mean value of the outcome in the *Non-affected* group.

that *Affected* and *Non-affected* women on average spend an equal number of nights in the market during the lockdown.

Finally, the increase in physical and sexual violence can be driven by the loss of identity associated with male unemployment, generating a backlash effect. Unfortunately we cannot investigate this channel since we lack the data.

As pre-registered, we report the results measuring one outcome of interest using the list experiment, a technique introduced by Miller (1984), which permits to ask sensitive questions in an indirect way. Respondents were randomly divided in two groups and asked to indicate the number of true statements out of a list that either included a statement on IPV or not. IPV prevalence results from the difference in group means. As reported in Appendix Section F.2, we see evidence of mis-reporting, but this is not statistically different across groups. We also see no significant difference in occurrence of violence during the lockdown period. However, these results must be interpreted with caution, given that the list experiment technique is often misunderstood by the respondents or poorly implemented.

Finally, in Appendix we show some robustness checks (Section G) and additional heterogeneity analysis (Section H). For robustness, we perform the analysis i) restricting the sample to only women who were married at the time of the survey and ii) without imputing missing values, and our results appear almost unchanged. We also look at heterogeneity along different dimensions (gender norms and number of nights spent in the market) without finding any significant difference.

6 Conclusions

In this paper we show that physical and sexual intimate partner violence against employed women in Uganda increases by 45% as a consequence of their husbands' temporary unemployment. We show that violence occurs almost immediately after the negative economic shock is realized, but the effect is temporary and fades out as soon as the situation reverts back to normality. We also show that violence is sticky and persists over time, but interestingly our results are driven by “new” violence. Precisely the *Affected* women who had never experienced violence before became victims of abuse during the lockdown.

We believe our findings could represent a lower-bound, since our respondents are more economically empowered and experience less violence than than the average (DHS Program, 2016; UBOS, 2019). Less economically empowered women, living in more remote areas and with limited networks might face an higher risk of abuse, as a consequence of an unemployment shock. We also suggest that the higher likelihood of

experiencing abuse among *Affected* women can be due to either extraction purposes (Bloch and Rao, 2002) or a form of male backlash (Macmillan and Gartner, 1999), probably driven by economic motives.

Finally, we document the indirect consequences of the COVID-19 containment measures for IPV in Uganda. While there is abundant anecdotal evidence of a positive correlation between the lockdown's introduction and IPV in many countries, rigorously establishing a causal link is not always possible. This is especially true in developing countries, where administrative information, data on hotline calls or Police reports are rarely existent.

These results are particularly relevant for policy-makers in Uganda and other African countries, where job security is limited, unemployment episodes are frequent and households are often on the verge of poverty. Policy-makers should invest resources in identifying vulnerable women and in designing interventions aimed at improving economic resilience as well as reshaping gender and family norms. Similarly, unemployed men should be reintegrated in the labor force and exposed to gender training curricula.

Women employment is generally associated with higher empowerment but it might not be enough to offset violence when the household faces a severe negative shock. Our setting is particularly interesting as it allows us to show that urban and employed women are not fully insured against violence and are vulnerable to physical and sexual IPV as a consequence of an economic shock. However, extending the results obtained in a sample of married female food vendors operating in markets in urban Uganda to other contexts should be done with caution.

We provide evidence of some of the consequences that negative economic shocks might have on women well-being. Further research is needed to test specific policies and programs effective in protecting women when victims of abuse, promoting peaceful conflict resolution within households and creating stronger insurance systems.

References

- Aizer, A. (2011). Poverty, violence, and health the impact of domestic violence during pregnancy on newborn health. *Journal of Human resources*, 46(3):518–538.
- Anderson, S. and Eswaran, M. (2009). What determines female autonomy? evidence from bangladesh. *Journal of Development Economics*, 90(2):179–191.
- Antman, F. M. (2014). Spousal employment and intra-household bargaining power. *Applied Economics Letters*, 21(8):560–563.
- Bhalotra, S., Britto, D. G. C., Pinotti, P., and Sampaio, B. (2021a). Job Displacement, Unemployment Benefits and Domestic Violence.
- Bhalotra, S., Kambhampati, U., Rawlings, S., and Siddique, Z. (2021b). Intimate partner violence: the influence of job opportunities for men and women. *The World Bank Economic Review*, (35).
- Black, M., Kresnow, M.-j., Simon, T., Arias, I., and Shelley, G. (2006). Telephone survey respondents’ reactions to questions regarding interpersonal violence. *Violence and victims*, 21:445–59.
- Bloch, F. and Rao, V. (2002). Terror as a bargaining instrument: A case study of dowry violence in rural india. *American Economic Review*, 92(4):1029–1043.
- De Leeuw, E. (2004). To mix or not to mix data collection modes in surveys. *J Off Stat*, 21.
- de Quidt, J. and Haushofer, J. (2019). Depression through the lens of economics. a research agenda. In *The economics of poverty traps*, pages 127–152. University of Chicago Press.
- DHS Program (2016). Uganda demographic and health survey 2016 [dataset] ugir7bfl.dta.
- Duflo, E. and Udry, C. (2004). Intrahousehold resource allocation in cote d’ivoire: Social norms, separate accounts and consumption choices.
- Egger, D., Miguel, E., Warren, S. S., Shenoy, A., Collins, E., Karlan, D., Parkerson, D., Mobarak, A. M., Fink, G., Udry, C., Walker, M., Haushofer, J., Larrebourg, M., Athey, S., Lopez-Pena, P., Benhachmi, S., Humphreys, M., Lowe, L., Meriggi, N. F., Wabwire, A., Davis, C. A., Pape, U. J., Graff, T., Voors, M., Nekesa, C., and

- Vernot, C. (2021). Falling living standards during the covid-19 crisis: Quantitative evidence from nine developing countries. *Science Advances*, 7(6).
- Ericsson, S. (2020). Backlash: female economic empowerment and domestic violence. *Lund University, Department of Economics*, (WP No. 2019:12).
- Fox, G. L., Benson, M. L., DeMaris, A. A., and Van Wyk, J. (2002). Economic distress and intimate violence: Testing family stress and resources theories. *Journal of Marriage and Family*, 64(3):793–807.
- International Labour Organization (ILO) (2017). Statistics on the informal economy.
- Macmillan, R. and Gartner, R. (1999). When she brings home the bacon: Labor-force participation and the risk of spousal violence against women. *Journal of Marriage and Family*, 61(4):947–958.
- Mahfoud, Z., Ghandour, L., Ghandour, B., Mokdad, A. H., and Sibai, A. M. (2015). Cell phone and face-to-face interview responses in population-based surveys: How do they compare? *Field Methods*, 27(1):39–54.
- Mahmud, M. and Riley, E. (2021). Household response to an extreme shock: Evidence on the immediate impact of the covid-19 lockdown on economic outcomes and well-being in rural Uganda. *World Development*, 140:105318.
- Majlesi, K. (2016). Labor market opportunities and women’s decision making power within households. *Journal of Development Economics*, 119:34–47.
- McNutt, L.-A. and Lee, R. (2000). Intimate Partner Violence Prevalence Estimation using Telephone Surveys: Understanding the Effect of Nonresponse Bias. *American Journal of Epidemiology*, 152(5):438–441.
- Mendolia, S. (2014). The impact of husband’s job loss on partners’ mental health. *Review of Economics of the Household*, 12(2):277–294.
- Miller, J. D. (1984). *A new survey technique for studying deviant behavior*. PhD thesis, The George Washington University.
- Nandi, A. and Platt, L. (2017). Are there differences in responses to social identity questions in face-to-face versus telephone interviews? results of an experiment on a longitudinal survey. *International Journal of Social Research Methodology*, 20(2):151–166.

- 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(3):1251–1285.
- Rataj, E., Kunzweiler, K., and Garthus-Nigel, S. (2016). Extreme weather events in developing countries and related injuries and mental health disorders - a systematic review. *BMC Public Health*, 16(1020).
- Rawlings, S. and Siddique, Z. (2020). Domestic violence and child mortality in the developing world. *Oxford bulletin of economics and statistics*, 82(4):723–750.
- Sabia, J. J., Dills, A. K., and DeSimone, J. (2013). Sexual violence against women and labor market outcomes. *American Economic Review*, 103(3):274–78.
- UBOS (2019). Annual labor force survey 2018/2019. *Uganda Bureau of Statistics*.
- UN (1993). Declaration on the elimination of violence against women. *UN General Assembly Resolution 48/104*.
- UNDP (2020a). Gender based violence and covid-19.
- UNDP (2020b). Human development report 2020.
- WHO (2021). Violence against women prevalence estimates, 2018. global, regional and national prevalence estimates for intimate partner violence against women and global and regional prevalence estimates for non-partner sexual violence against women.
- Ziparo, R. (2020). Why do spouses communicate? love or interest? a model and some evidence from cameroon. *Working Paper*, 9.

Appendices

Appendix A Literature Review

TABLE A1
SUMMARY OF RELEVANT LITERATURE

Author(s)	Year	Country	Method	Findings
Aizer	2007	US	Instrument women's income with a measure of local labor market conditions	Increase in a woman's personal income leads to a reduction in the probability of violence against her
Aizer	2010	US	Exploit changes in local labor demand	Improvements in area-level relative wages of women lower domestic violence
Alonso-Borrego and Carrasco	2017	Spain	Use geographical information on employment rates by age and gender	Crucial role of male employment in reducing risk of IPV
Amaral et al.	2016	India	DiD using Mahatma Gandhi National Rural Employment Guarantee Scheme (NREGS) program	The program leads to an increase in domestic violence
Anderbeg et al.	2016	UK	Exploit variation in unemployment change across police force areas, gender and age groups at the onset of the late-2000s recession	No evidence that domestic violence increases with the overall unemployment rate; female unemployment increases the risk of domestic abuse, unemployment among males reduces it
Angelucci	2008	Mexico	Instrument women's income with Oportunidades program and men's income with village agricultural wage	An increase in the income of both spouses decreases alcohol abuse and that reduces aggressive behavior

Bhalotra et al.	2021	Multiple	Exploit country-level unemployment shocks at $t - 1$	An increase in male unemployment rate is associated with an increase in the incidence of physical violence against women, while an increase in female unemployment rates is associated with a reduction in the incidence of violence
Bhalotra et al.	2021	Brazil	Natural experiment using mass layoffs	Both male and female job loss lead to an increase in domestic violence
Bhattacharyya et al.	2011	India	Instrumental variable	Paid work and house ownership are associated with a decrease in violence
Bobonis et al.	2013	Mexico	Oportunidades program	Beneficiaries experience a reduction in physical abuse, but increase violent threats
Bowlus and Seitz	2006	Canada	Control for observables	Female employment reduces the likelihood of abuse
Camacho and Rodriguez	2020	Colombia	Government CCTs	IPV decrease in the months when the transfers are received, but the effect is only transitory and varies according to households' expectations
Chin	2011	India	Instrument women's employment status with rainfall and rice state dummy	A change in female employment decreases the probability of physical spousal violence
Ericsson	2020	Sweden	Instrument women empowerment with women potential earnings	Increasing a woman's potential earnings increases the probability that she visits a hospital for assault-related injuries
Erten and Keskink	2021	Cambodia	Exploit local labor demand shocks generated by Cambodia's WTO accession	Men in districts facing larger tariff reductions decrease their employment and women increase their labor force participation; IPV increases
Finoff	2012	Rwanda	Control for observables	Women who are employed, but whose husbands are not, experience more sexual violence
Haushofer et al.	2019	Kenya	RCT giving UCTs	Reduction in physical and sexual IPV when transfer given to woman and reduction in physical IPV when transfer given to the man; reduction in physical IPV also among non-treated households

Heath	2013	Bangladesh	Control for observables	Positive correlation between whether a woman works and the possibility that she suffers IPV, that disappears for women who are more educated or older at first marriage
Hidrobo and Fernald	2013	Ecuador	Government UCTs	The effect depends on woman's education and on her education relative to her partner's
Hsu	2017	US	Government UCTs	Violence increases after welfare payments
Kotsadam et al.	2020	Ethiopia	RCT	Randomly assigned jobs have no effect on physical IPV
Mahmud and Riley	2021	Uganda	Pre-post comparison	During COVID-19 lockdown, households report reduced income and a higher likelihood of having major arguments and higher perceived frequency of IPV
McMillan	2021	Canada	Control for observables	Effect of women's employment on IPV depends on employment of partner
Peterman et al.	2021	Ghana	Government UCTs	Reduction of emotional, physical and combined IPV
Pronyk et al.	2006	South Africa	RCT giving loans and training	Reduction of IPV
Roy et al.	2018	Bangladesh	RCT giving UCTs and behavioral change curriculum	Reduction in IPV
Tertilt and van den Berg	2014	Sweden	Correlational	Positive correlation between unemployment and increase in violence outside home for women
Tur-Prats	2019	US	Measure of unemployment using Bartik's approach	No effect of unemployment on IPV, but decrease in female unemployment relative to male unemployment is associated with an increase in IPV for individuals living in provinces with a nuclear-family tradition

The table includes a non-exhaustive summary of the literature examining the relationship between IPV and income or employment.

Appendix B Survey tools

B.1 Main Questions

Below we report the main questions we used to measure the occurrence of IPV in our sample.

TABLE B1
QUESTIONS ABOUT IPV USED IN THE SURVEY

Violence question	Macro category
<i>Panel A: Violence during the lockdown</i>	
Has your husband/partner slapped you?	<i>Physical</i>
Has your husband/partner twisted your arm or pulled your hair?	<i>Physical</i>
Has your husband/partner punched you with his fists or with something that could hurt you?	<i>Physical</i>
Has your husband/partner kicked you, dragged you or beaten you up?	<i>Physical</i>
Has your husband/partner tried to choke you or burn you?	<i>Physical</i>
Has your husband/partner insulted you or made you feel bad about yourself?	<i>Emotional</i>
Has your husband/partner made you feel useless or worthless?	<i>Emotional</i>
Has your husband/partner physically forced you to have sexual intercourse or other sexual acts with him when you did not want to?	<i>Physical</i>
Has your husband/partner forced you with threats or in any other way to have sexual intercourse or other sexual acts with him when you did not want to?	<i>Physical</i>
<i>Panel B: Violence pre-lockdown and post-lockdown</i>	
Had your husband ever used emotional violence against you in the past, before the month of April? Had he ever insulted you or made you feel bad about yourself, or made you feel useless or worthless, before the lockdown?	<i>Emotional</i>
Had your husband ever used physical violence against you in the past, before the month of April? Had he ever slapped you, or twisted your arm or pulled your hair... , before the month of April?	<i>Physical</i>
Has your husband used emotional violence against you recently, in the months of August and September? Has he insulted you or made you feel bad about yourself, or made you feel useless or worthless?	<i>Emotional</i>
Has your husband used physical violence against you recently, in the months of August and September? Has he slapped you, or twisted your arm or pulled your hair... ?	<i>Physical</i>

The questions in Panel A are taken from the DHS Domestic Violence Module.

B.2 List Experiment

We asked one alternative outcome question using the list experiment technique. Stratifying by the group (*Affected* or *Non-affected*), we randomly divided the respondents in receiving either a *Control* list or a *Treatment* list of items. The former

group was read a list of three statements and the latter group was instead read a list of four statements (the same three statements of the *Control* list and one additional statement relative to IPV). Each woman was then asked to indicate how many of the statements were true for her: the difference in the average number reported between the groups would then reveal the percentage of women agreeing with the sensitive statement.

This is the text we used in the survey:

Now I would like to read you 4 statements. The statements will be about some situations you might have experienced during the period of the COVID-19 lockdown and curfew (April and May). Some of them will be true, some of them will not be true. After I read all of them, I will ask you to tell me how many of these statements are true for you. I do not want to know which ones are true, but just how many. Now I will give you a suggestion on how to do it: after I read each statement, I would like you to lift a finger if the statement is true, and do not lift a finger if the statement is not true. In this way, you can count with your fingers how many statements are true. DO NOT tell me each time you lift or do not lift a finger. At the end, I will just ask you how many fingers you have lifted: please just give me the number and do not tell me which statements are true. Is this clear to you? If respondent says no, explain again.

I will now read the statements. Please, listen carefully:

- 1. I attended a religious service, but not for a special occasion like a wedding or a funeral*
- 2. I kept working at my usual job*
- 3. I travelled back to my village*

The *Treatment* group was read also this additional sentence:

- 4. My husband slapped me, twisted my arm or pulled my hair*

The statements were chosen to avoid both floor and ceiling effects, namely that some respondents by finding all statements true or false would indirectly reveal their answers.

We asked the same information about physical violence also directly through the following questions: *Has your husband/partner slapped you in April and May? Has your husband/partner twisted your arm or pulled your hair in April and May?*

Appendix C Ethics

Prior to administering the phone survey, enumerators obtained an informed consent from each respondent and were mechanically restricted from proceeding with the survey without such consent. The respondents were told that they would be asked personal information and were given the necessary time to consider whether to participate in the study. Additionally, we allowed time for the respondents to ask any questions they might have, and we emphasized that they could opt not to participate without penalty.

In order to minimize the risk of coercion or undue influence, the field team was composed of trained Ugandan women who speak the language and know local customs.

We realize that intimate partner violence is a very sensitive topic and respondents could be exposed to the risk of retaliation. In order to minimize this risk, we adopted all possible precautions. First, we tried as much as possible to verify that the phone number we were provided with was used exclusively by the respondent, by asking her if she had a second phone number she would like to be called on. Second, the enumerator explicitly advised the respondent to find an isolated and private space to safely answer the questions. We conducted the interview only with respondents located at their workplace at the moment of our call, or who could guarantee to be in a quiet and isolated place. Third, all sensitive questions (also the ones with different answer options) were framed by the interviewer such that the respondent could answer simply with a “Yes” or “No”, without having to disclose the topic discussed. Finally, the enumerators were instructed on how to handle queries from third parties.

Another reason for concern is the psychological stress that the respondents could face while being asked to remember painful episodes. The field team was trained on how to ask questions in a respectful and sensitive manner and the respondents were always given as much time as they needed. Additionally, the respondents were repeatedly told that they could skip any question or decide to terminate the interview at any time. Although we stressed that we were not in the position to provide support, in case the respondents asked for psychological help, we provided referrals to organizations that could be of assistance.

Appendix D IPV data and husband’s job sector

In this section we show some descriptives about IPV in the DHS sample and for our sample in the pre-lockdown period, as well as their correlation with the husband’s

job sectors.

TABLE D1
IPV IN DHS SAMPLE

Variable	Mean	St. Dev.
<i>Panel A: all episodes</i>		
Emotional Violence	0.34	0.47
Humiliated	0.17	0.38
Threatened	0.14	0.35
Insulted	0.27	0.45
Less-severe physical Violence	0.28	0.45
Pushed/shook/thrown objects	0.15	0.35
Slapped	0.25	0.43
Punched/hit	0.12	0.32
Twisted arm/pulled hair	0.09	0.29
Severe physical Violence	0.13	0.33
Kicked/dragged	0.12	0.32
Strangled/burnt	0.04	0.18
Threatened with weapon	0.03	0.17
Sexual Violence	0.16	0.37
Forced sex	0.15	0.36
Forced sexual acts	0.03	0.18
<i>Panel B: aggregates</i>		
Any violence	0.42	0.49
Any EMOTIONAL violence	0.31	0.46
Any PHYS/SEX violence	0.32	0.47
Observations	956	

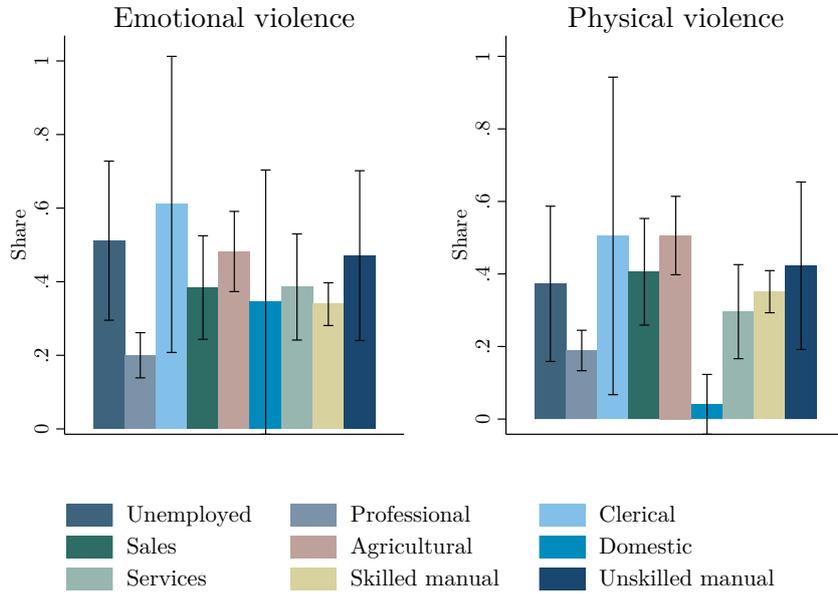
Own elaboration based on DHS, 2016. Sample of 956 working women in urban areas, married and above 18 years of age.

TABLE D2
COMPARISON WITH DHS SAMPLE

	Our sample	DHS sample	
		Urban	Rural
Violence prevalence			
Any	0.48	0.38	0.51
Physical	0.09	0.26	0.38
Emotional	0.48	0.29	0.37
Age	36.90	30.24	31.04
Respondent education			
No education	0.03	0.08	0.14
Primary	0.46	0.39	0.64
Secondary	0.44	0.35	0.17
More than secondary	0.06	0.18	0.05
Resp. owns mobile phone	1.00	0.78	0.38
Resp. in paid employment	1.00	0.68	0.66
Husb. employed	0.98	0.95	0.94
Obs.	809	1246	5023

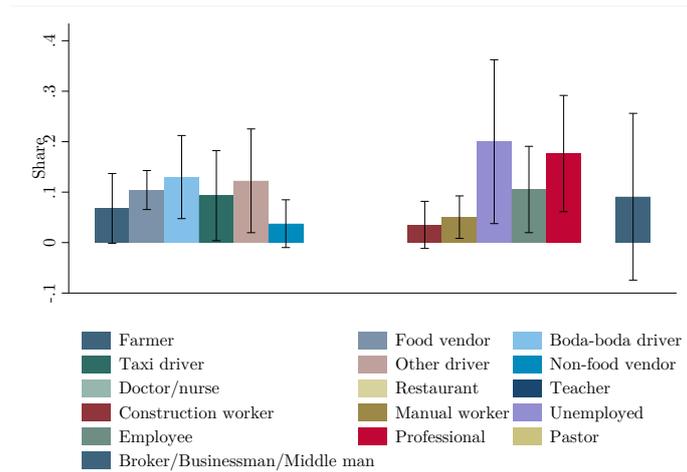
The Table shows sample averages for selected variables. Own elaboration based on collected data and DHS, 2016. The DHS sample includes only married women older than 18. In our sample, all variables refer to the pre-lockdown period (i.e. before April 2020).

FIGURE D1
IPV BY HUSBAND JOB SECTOR



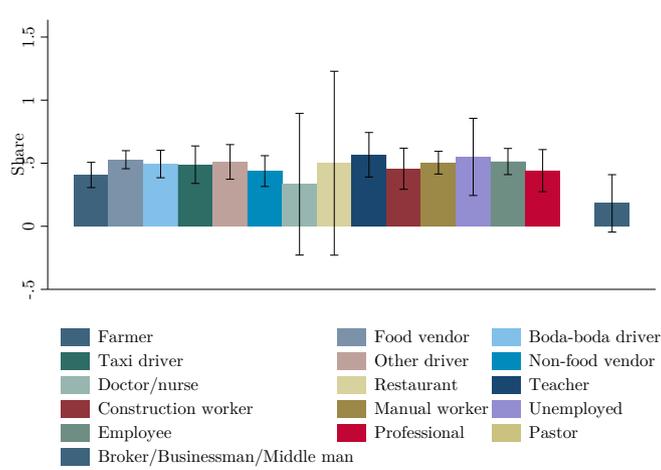
The figure shows the prevalence of emotional and physical (broadly defined as beating and sexual abuse) violence conditional on husband's job sector. The sample includes 956 working women in urban areas, married and above 18 years of age. 95% confidence bands on top of bars. *Source:* DHS, 2016.

FIGURE D2
HUSBAND JOB SECTOR ON PHYSICAL IPV PRE-LOCKDOWN



The figure shows the prevalence of physical violence (defined as beating only) conditional on husband's job sector. Standard errors are clustered at the market level. 95% confidence bands on top of bars.

FIGURE D3
HUSBAND JOB SECTOR ON EMOTIONAL IPV PRE-LOCKDOWN



The figure shows the prevalence of emotional violence conditional on husband's job sector. Standard errors are clustered at the market level. 95% confidence bands on top of bars.

Appendix E Data Information

E.1 Selection

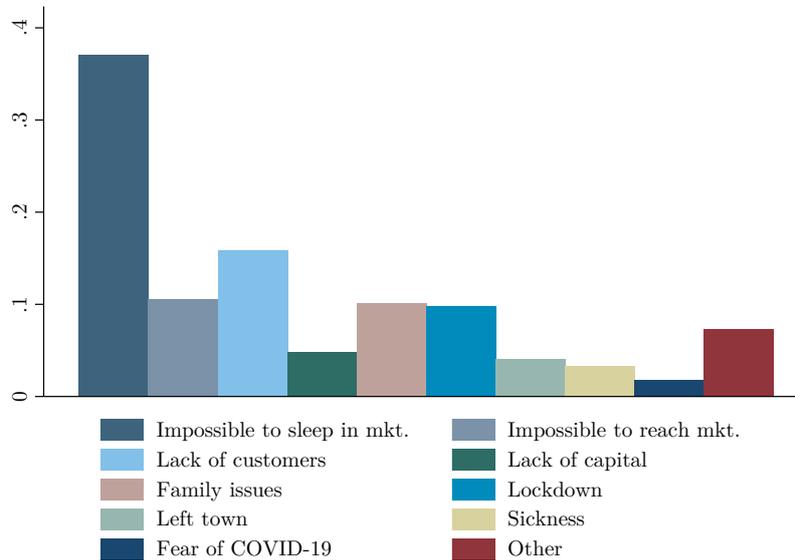
One possible concern for our identification strategy is that we selected respondents on the basis of their employment status during the lockdown, which in principle could be correlated with the husband's employment status. In Table E1 we use information from all eligible and some ineligible women and we show that the likelihood of being actively employed during the lockdown period is not different for *Affected* and *Non-affected* women. In Figure E1 we also present the main reasons indicated by the respondents for not working in the market (and that made them ineligible).

TABLE E1
EFFECT OF HUSBAND'S TEMPORARY JOB LOSS ON
LIKELIHOOD THAT A WOMAN WORKS IN APRIL/MAY

	Respondent worked (i)	Respondent worked (ii)
Affected	-0.030 (0.025)	-0.009 (0.022)
Non-affected Mean	0.748	0.748
Market and Age FE	Yes	Yes
Control	No	Yes
Observations	1386	1386
R-squared	0.079	0.152

OLS models. Robust standard errors clustered at the market level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The outcomes are binary variables indicating whether a respondent worked in the market during April and May 2020. *Affected* indicates whether the woman's husband was employed in a sector restricted by the Government measures. *Control* is an indicator for the type of products sold in the market. *Non-affected mean* is the mean value of the outcome in the *Non-affected* group.

FIGURE E1
REASONS FOR NOT WORKING IN THE MARKET DURING THE LOCKDOWN



The figure shows the main reasons reported by the listed respondents for deciding not to work in the market as usual, during the lockdown. Note that these women were excluded from the analysis sample.

E.2 Missing Values

In the analysis, we handle missing values according to the type of variable we consider. For the binary outcome variables, we have only two missing values. They are due to respondents not giving consent to be asked the IPV questions. In order not to lose statistical power, as pre-registered, we keep these respondents in the sample and we the missing values in the outcomes as 1; that is, we assume that they experienced each type of violence. In the analysis, we always control for this replacement by including an indicator.

Two respondents reported that they did not know their husband’s occupation and one respondent refused to answer to this question. This means that we could not assign these respondents to either the *Affected* or the *Non-affected* group. To preserve statistical power, we assign them to the *Non-affected* group, as this is the most conservative approach to take. For the husband’s actual employment status, we replace missing values as the median actual employment status by sector of employment. As a result, we estimate LATE on 808 observations, instead of 809.

In case of missing binary covariates (religion, education, husband’s alcohol consumption and norms), we impute them as the overall median, or as the median within market (only for the number of nights spent in the market). Among these variables, the only one with more than 1% of missing values is the number of nights the respondent slept in the market during an average week in the lockdown period.

¹⁷

Table E2 reports balance checks for the differential presence of missing values in the two groups. Reassuringly, there is no significant difference in the likelihood of a missing value for the main variables of interest.

¹⁷ Please note that here we deviate from the pre-analysis plan where we had decided to use the mean of the distribution instead.

TABLE E2
BALANCE TESTS OF MISSING VALUES

	(1) Overall	(2) Non- affected	(3) Affected	(4) Diff.	(5) p-val.	(6) Norm. Diff.	(7) N
Any violence pre-lockdown	0.002 (0.050)	0.004 (0.066)	0.002 (0.042)	-0.004 (0.006)	0.525	0.047	809
Physical violence pre-lockdown	0.004 (0.061)	0.004 (0.066)	0.003 (0.059)	-0.002 (0.006)	0.779	0.014	809
Emotional violence pre-lockdown	0.004 (0.061)	0.004 (0.066)	0.003 (0.059)	-0.002 (0.006)	0.738	0.014	809
Respondent income pre-lockdown	0.009 (0.093)	0.009 (0.093)	0.009 (0.093)	-0.002 (0.008)	0.842	0.000	809
Religion	0.001 (0.035)	0.000 (0.000)	0.002 (0.042)	0.002 (0.002)	0.298	-0.059	809
Education	0.001 (0.035)	0.000 (0.000)	0.002 (0.042)	0.002 (0.002)	0.334	-0.059	809
Nights spent at market	0.043 (0.204)	0.039 (0.194)	0.045 (0.207)	0.019 (0.012)	0.139	-0.030	809
Respondent's gender norms	0.001 (0.035)	0.000 (0.000)	0.002 (0.042)	0.002 (0.002)	0.329	-0.059	809
Husband's gender norms	0.001 (0.035)	0.000 (0.000)	0.002 (0.042)	0.002 (0.002)	0.329	-0.059	809
Husband's alcohol consumption	0.001 (0.035)	0.000 (0.000)	0.002 (0.042)	0.002 (0.002)	0.313	-0.059	809
Any violence lockdown	0.002 (0.050)	0.004 (0.066)	0.002 (0.042)	-0.004 (0.006)	0.525	0.047	809
Physical violence lockdown	0.002 (0.050)	0.004 (0.066)	0.002 (0.042)	-0.004 (0.006)	0.525	0.047	809
Emotional violence lockdown	0.002 (0.050)	0.004 (0.066)	0.002 (0.042)	-0.004 (0.006)	0.525	0.047	809
Sexual violence lockdown	0.002 (0.050)	0.004 (0.066)	0.002 (0.042)	-0.004 (0.006)	0.525	0.047	809

The table shows summary statistics and mean differences for the presence of missing values in selected variables across groups. *Affected* - *Non-affected* differences and *p*-values are obtained by regressing each variable on a group indicator, controlling for market fixed effects. Standard errors clustered at the market level in parentheses.

E.3 Non-compliance

Although there is evidence that the Government directives were implemented rigorously, we observe some two-sided non-compliance, as reported by the respondents. While 80% of the husbands whose job sector was affected did not work during the lockdown, the remaining 20% found another temporary job. As for the non-affected sectors, it appears that about 40% of the husbands who were allowed to work during the lockdown decided not to do so.

TABLE E3
COMPLIANCE TO COVID-19
CONTAINMENT MEASURES

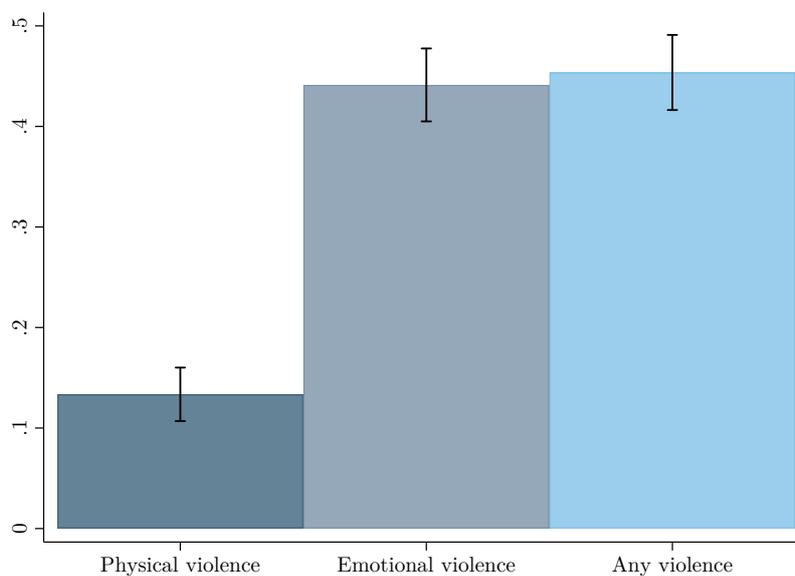
	<i>Affected by measures</i>		
	No	Yes	Total
<i>Worked in lockdown</i>			
Yes	140	111	251
No	90	467	557
Total	230	578	808

This table shows the number of husbands who decided to work or to not work during the lockdown, when their sector was affected or non-affected.

Appendix F Additional Results

F.1 Overall Prevalence in April and May

FIGURE F1
OVERALL PREVALENCE OF VIOLENCE



The figure shows the prevalence of different macro categories of violence in our sample during the lockdown. Standard errors are clustered at the market level. 95% confidence bands on top of bars.

F.2 Comparison of direct measure and list experiment

As pre-registered, we also estimate the prevalence of physical abuse (restricted to slapping, harm twisting or hair pulling) using the list experiment technique. Results

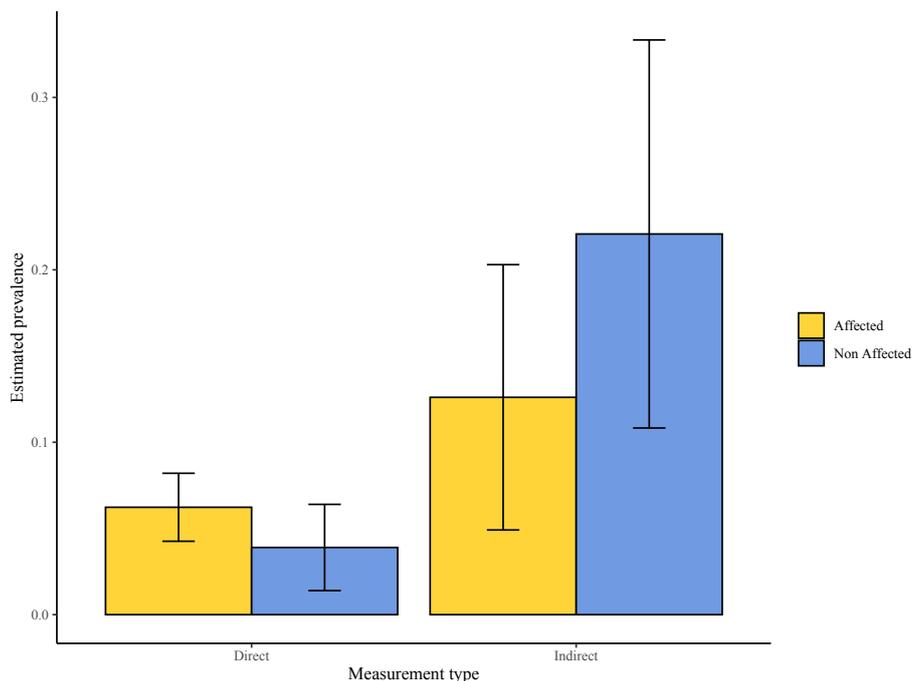
are shown in Table F1. The prevalence of abuse estimated indirectly is higher than the prevalence of the same abuse estimated directly (15.3% and 5.6%, respectively).

In the third and fourth columns, we test the validity of the identifying assumptions (No Liars, No Design Effect, Ignorability and Monotonicity) of the list experiment. We are not able to reject the null hypotheses that the assumptions jointly hold ($\beta = 1$) and the null hypotheses that the Ignorability assumption singularly holds ($\delta = 0$).

In Figure F2 we compare the different prevalence measures across *Affected* and *Non-affected* groups. Although the direct and the indirect measures give opposite results in terms of point estimates, in both cases the standard errors are large and the confidence bands around the mean overlap. We confirm this in a regression setting in Table F2, where both the coefficient for the interaction between *Affected* and *List* in columns (i) and (ii) and the coefficient for *Affected* in columns (iii) and (iv) are not significantly different than 0.

These results are insightful as they highlight the importance of choosing reliable and consistent measurement techniques, especially for survey questions. However, given the impossibility of verifying the perfect implementation of the list experiment technique (in terms of practical implementation as well as translation rigor) and considering the robustness of the findings described in the rest of the paper, we consider the direct measures more convincing.

FIGURE F2
 AVERAGES OF A MEASURE OF PHYSICAL VIOLENCE BY METHOD AND GROUP



The figure shows the prevalence of specific actions of IPV (slapping, arm-twisting and hair-pulling) in the *Affected* and *Non-affected* groups using two different methods: direct questions and list experiment. 95% confidence bands on top of bars.

TABLE F1
 DIRECT AND INDIRECT VIOLENCE
 PREVALENCE ESTIMATES

Indirect prevalence	Direct prevalence	β	δ
0.1532	0.0556	0.94	0.0106
(0.0325)	(0.0081)	(0.1924)	(0.0161)
		[0.7551]	[0.5115]

The table shows estimates of indirect and direct prevalence of violence restricted to slapping, harm twisting or hair pulling. Column β calculates the list experiment estimates among respondents who answered “Yes” to the direct question. Column δ calculates the effect of receiving the treatment list on direct reporting. Standard errors in parentheses and p -values for the null hypotheses $\beta = 1$ and $\delta = 0$ in square brackets.

TABLE F2
OLS ESTIMATES OF HUSBAND'S TEMPORARY JOB
LOSS ON A MEASURE OF PHYSICAL VIOLENCE

	List Experiment		Direct Measure	
	(i)	(ii)	(iii)	(iv)
Affected	0.032 (0.050)	0.012 (0.052)	0.029 (0.019)	0.025 (0.019)
List	0.192** (0.081)	0.167** (0.082)		
Affected*List	-0.073 (0.078)	-0.051 (0.078)		
Constant	0.743*** (0.035)	0.783*** (0.108)	0.005 (0.009)	0.002 (0.061)
Market and Age FE	Yes	Yes	Yes	Yes
Main Controls	Yes	Yes	Yes	Yes
Additional Controls	No	Yes	No	Yes
Observations	809	809	809	809
R-squared	0.130	0.158	0.153	0.180

OLS models. Robust standard errors clustered at the market level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The outcomes are binary variables indicating the occurrence of physical abuse in terms of slapping, hair pulling or arm twisting, elicited using the list experiment technique and direct questioning. *Affected* indicates whether the woman's husband was employed in a sector restricted by the Government measures. *Main controls* included are respondent's income in the pre-lockdown period, husband's education, and a binary variable indicating whether the respondent sells fruit and vegetables in the market. *Additional controls* include religion, respondent's education, nights spent at the market, gender norms, husband's alcohol consumption and goods sold at the market. Income is winsorized at the 99% level and in '000 Ugandan Shillings. *Non-affected mean* is the mean value of the outcome in the *Non-affected* group.

F.3 Other Effects of Husband's Job Loss

In Table F3 we examine the impact of husband's unemployment on other outcomes. Columns (i) and (ii) look at its effect on the likelihood of receiving any support (cash, food or other) from the Government or an NGO during the lockdown. Columns (iii) and (iv) explore the drinking behavior of the husband as a potential response to unemployment. We do not see any significant difference across the groups.

TABLE F3
OTHER EFFECTS OF HUSBAND'S JOB LOSS

	Support		Alcohol		Income	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
<i>Panel A: OLS Estimates</i>						
Affected	0.008 (0.040) [0.841]	0.009 (0.041) [0.825]	-0.045 (0.280) [0.872]	-0.048 (0.303) [0.874]	-4.042 (4.970) [0.422]	-4.286 (4.777) [0.376]
Non-affected Mean	0.580	0.580	0.203	0.203	45.159	45.159
R-squared	0.201	0.219	0.409	0.438	0.345	0.358
Observations	809	809	176	176	809	809
<i>Panel B: 2SLS Estimates</i>						
Husband did not work	0.021 (0.085) [0.807]	0.024 (0.077) [0.757]	-0.118 (0.754) [0.877]	-0.132 (0.693) [0.850]	-8.908 (10.806) [0.416]	-9.425 (10.309) [0.367]
Observations	808	808	175	175	808	808
Market and Age FE	Yes	Yes	Yes	Yes	Yes	Yes
Main Controls	Yes	Yes	Yes	Yes	Yes	Yes
Additional Controls	No	Yes	No	Yes	No	Yes

OLS and 2SLS models. Robust standard errors clustered at the market level in parentheses, p -values in square brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The outcomes are binary variables indicating whether the household received some form of Government support during April and May 2020 (columns (i) and (ii)), whether the husband consumed more alcohol than usual in the lockdown period (columns (iii) and (iv)) and respondent weekly income (columns (v) and (vi)). *Affected* indicates whether the woman's husband was employed in a sector restricted by the Government measures. *Main controls* included are respondent's income in the pre-lockdown period, husband's education, and a binary variable indicating whether the respondent sells fruit and vegetables in the market. *Additional controls* include religion, respondent's education, nights spent at the market, gender norms, husband's alcohol consumption and goods sold at the market. Income is winsorized at the 99% level and in '000 Ugandan Shillings. *Non-affected mean* is the mean value of the outcome in the *Non-affected* group.

Appendix G Robustness Checks

G.1 Married only sample

Some women report to have split up their marriages or relations right after the containment measures were put in place. We thus repeat our analysis excluding these 34 cases and restricting our sample to only women who were still married in November 2020. As reported in Table G1, results are mitigated compared to our main results. However, the signs of the coefficients are consistent with what we found

using the main sample.

TABLE G1
EFFECT OF HUSBAND'S TEMPORARY JOB LOSS ON IPV FOR
MARRIED WOMEN

	Physical		Emotional		Any	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Panel A: OLS Estimates						
Affected	0.041 (0.024) [0.101]	0.042 (0.025) [0.108]	0.010 (0.037) [0.791]	0.009 (0.031) [0.781]	0.013 (0.037) [0.735]	0.011 (0.032) [0.723]
Outcome pre-lockdown	0.289*** (0.059) [0.000]	0.251*** (0.051) [0.000]	0.258*** (0.036) [0.000]	0.219*** (0.031) [0.000]	0.268*** (0.034) [0.000]	0.234*** (0.030) [0.000]
Non-affected Mean	0.102	0.102	0.427	0.427	0.436	0.436
R-squared	0.182	0.206	0.171	0.248	0.177	0.246
Observations	775	775	775	775	775	775
Panel B: 2SLS Estimates						
Husband did not work	0.091 (0.057) [0.120]	0.092 (0.059) [0.126]	0.028 (0.081) [0.729]	0.025 (0.068) [0.720]	0.034 (0.080) [0.675]	0.030 (0.070) [0.668]
Outcome pre-lockdown	0.295*** (0.058) [0.000]	0.260*** (0.050) [0.000]	0.260*** (0.036) [0.000]	0.221*** (0.031) [0.000]	0.271*** (0.034) [0.000]	0.236*** (0.029) [0.000]
Observations	774	774	774	774	774	774
Market and Age FE	Yes	Yes	Yes	Yes	Yes	Yes
Main Controls	Yes	Yes	Yes	Yes	Yes	Yes
Additional Controls	No	Yes	No	Yes	No	Yes

OLS and 2SLS models for married women. Robust standard errors clustered at the market level in parentheses, p -values in square brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The outcomes are binary variables indicating the type of abuse. *Affected* indicates whether the woman's husband was employed in a sector restricted by the Government measures. *Main controls* included are respondent's income in the pre-lockdown period, husband's education, and a binary variable indicating whether the respondent sells fruit and vegetables in the market. *Additional controls* include religion, respondent's education, nights spent at the market, gender norms, husband's alcohol consumption and goods sold at the market. Income is winsorized at the 99% level and in '000 Ugandan Shillings. *Non-affected mean* is the mean value of the outcome in the *Non-affected* group.

G.2 No Missing Imputation

In Table G2 we report the analysis using the original variables as collected from the respondents, namely without imputing missing values. The sample size is evidently smaller when including the controls, implying less power to detect the effects,

However, results appear robust.

TABLE G2
EFFECT OF HUSBAND'S TEMPORARY JOB LOSS ON IPV NOT
IMPUTING MISSING VALUES

	Physical		Emotional		Any	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Panel A: OLS Estimates						
Affected	0.047*	0.046	0.003	0.014	0.006	0.019
	(0.027)	(0.029)	(0.035)	(0.027)	(0.035)	(0.030)
	[0.090]	[0.121]	[0.931]	[0.607]	[0.857]	[0.524]
Outcome pre-lockdown	0.291***	0.256***	0.269***	0.222***	0.279***	0.239***
	(0.054)	(0.048)	(0.034)	(0.029)	(0.032)	(0.029)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Non-affected Mean	0.104	0.104	0.435	0.435	0.443	0.443
R-squared	0.170	0.204	0.181	0.267	0.187	0.262
Observations	799	763	799	762	800	763
Panel B: 2SLS Estimates						
Husband did not work	0.088	0.088	0.007	0.038	0.008	0.041
	(0.062)	(0.066)	(0.076)	(0.059)	(0.077)	(0.067)
	[0.162]	[0.191]	[0.931]	[0.522]	[0.922]	[0.542]
Outcome pre-lockdown	0.302***	0.269***	0.262***	0.209***	0.271***	0.223***
	(0.052)	(0.048)	(0.034)	(0.029)	(0.034)	(0.031)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	784	749	784	748	785	749
Market and Age FE	Yes	Yes	Yes	Yes	Yes	Yes
Main Controls	Yes	Yes	Yes	Yes	Yes	Yes
Additional Controls	No	Yes	No	Yes	No	Yes

OLS and 2SLS models without the imputation of missing values. Robust standard errors clustered at the market level in parentheses, p -values in square brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The outcomes are binary variables indicating the type of abuse. *Affected* indicates whether the woman's husband was employed in a sector restricted by the Government measures. *Main controls* included are respondent's income in the pre-lockdown period, husband's education, and a binary variable indicating whether the respondent sells fruit and vegetables in the market. *Additional controls* include religion, respondent's education, nights spent at the market, gender norms, husband's alcohol consumption and goods sold at the market. Income is winsorized at the 99% level and in '000 Ugandan Shillings. *Non-affected mean* is the mean value of the outcome in the *Non-affected* group.

Appendix H Heterogeneous Effects

While we are interested in the general impact of male unemployment, we also consider the possibility of heterogeneous responses by some baseline characteristics. This could help us speaking about the main drivers of the results. We test for the

presence of heterogeneous treatment effects by estimating the following

$$y_{imt} = \beta_0 + \beta_1 a_{im} + \beta_2 w_{im} + \beta_3 (a_{im} \times w_{im}) + \beta_4 y_{imt-1} + \beta_5 W_{im} + \beta_6 X_{im} + age_i + \delta_m + \varepsilon_{imt} \quad (4)$$

where w_{im} is a variable indicating husband's gender norms (as a dummy equal to 1 in the case of more discriminatory gender norms) and number of nights the respondents spent in the market.

We look at the differential impact of husband's unemployment by having more restrictive gender norms or having spent more time in the market (above the sample median). Specifically, we consider a husband holding discriminatory gender norms if the respondent report that he agrees with the statement "If a woman earns more money than her husband, it's almost certain to cause problems". For the nights spent outside home, we look at whether the respondent spent more nights at the market than the median of the sample. We are not powered to detect any effect.¹⁸ Finally, in deviation from the pre-analysis plan, we also consider heterogeneity with respect to pre-lockdown violence. We see a positive and significant effect for physical violence exactly for the *Affected* women who had never been subjected to violence before April.

¹⁸Note that we pre-registered we would examine heterogeneous responses also with respect to relative income, but the low quality of the income data prevents us to do so.

TABLE H1
HETEROGENEOUS RESPONSE ACCORDING TO HUSBAND'S GENDER
NORMS

	Physical		Emotional		Any	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Panel A: OLS Estimates						
Affected	0.047 (0.034) [0.181]	0.041 (0.035) [0.247]	-0.018 (0.063) [0.778]	-0.015 (0.056) [0.789]	-0.025 (0.063) [0.694]	-0.022 (0.058) [0.707]
Norms	0.063 (0.047) [0.190]	0.044 (0.048) [0.361]	0.182** (0.069) [0.012]	0.133* (0.076) [0.091]	0.152** (0.072) [0.041]	0.098 (0.081) [0.233]
Affected*Norms	0.006 (0.051) [0.912]	0.014 (0.049) [0.780]	0.053 (0.068) [0.442]	0.040 (0.067) [0.557]	0.070 (0.071) [0.328]	0.058 (0.072) [0.427]
Non-affected Mean	0.108	0.108	0.437	0.437	0.446	0.446
R-squared	0.190	0.211	0.226	0.264	0.225	0.262
Observations	809	809	809	809	809	809
Panel B: 2SLS Estimates						
Husband no work	0.096 (0.075) [0.211]	0.080 (0.074) [0.284]	-0.023 (0.129) [0.862]	-0.021 (0.115) [0.857]	-0.039 (0.132) [0.767]	-0.037 (0.121) [0.763]
Husband no work*Norms	0.027 (0.118) [0.817]	0.049 (0.113) [0.665]	0.104 (0.151) [0.498]	0.078 (0.151) [0.609]	0.145 (0.159) [0.369]	0.121 (0.164) [0.465]
Norms	0.048 (0.087) [0.585]	0.021 (0.085) [0.806]	0.151 (0.121) [0.223]	0.110 (0.128) [0.397]	0.104 (0.128) [0.423]	0.059 (0.139) [0.675]
Observations	808	808	808	808	808	808
Market and Age FE	Yes	Yes	Yes	Yes	Yes	Yes
Main Controls	Yes	Yes	Yes	Yes	Yes	Yes
Additional Controls	No	Yes	No	Yes	No	Yes

OLS and 2SLS models looking at heterogeneity with respect to husband's gender norms. Robust standard errors clustered at the market level in parentheses, p -values in square brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The outcomes are binary variables indicating the type of abuse. *Affected* indicates whether the woman's husband was employed in a sector restricted by the Government measures and *Norms* indicates whether the husband holds discriminatory gender norms. *Main controls* included are respondent's income in the prelockdown period, husband's education, and a binary variable indicating whether the respondent sells fruit and vegetables in the market. *Additional controls* include religion, respondent's education, nights spent at the market, husband's alcohol consumption and goods sold at the market. Income is winsorized at the 99% level and in '000 Ugandan Shillings. *Non-affected mean* is the mean value of the outcome in the *Non-affected* group.

TABLE H2
HETEROGENEOUS RESPONSE ACCORDING TO NIGHTS SPENT AT THE
MARKET

	Physical		Emotional		Any	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Panel A: OLS Estimates						
Affected	0.034 (0.046) [0.459]	0.034 (0.048) [0.484]	-0.003 (0.043) [0.953]	-0.020 (0.042) [0.634]	-0.005 (0.042) [0.912]	-0.021 (0.043) [0.624]
Nights	-0.034 (0.028) [0.230]	-0.035 (0.032) [0.287]	0.002 (0.056) [0.971]	-0.030 (0.051) [0.559]	-0.013 (0.054) [0.810]	-0.044 (0.051) [0.394]
Affected*Nights	0.032 (0.060) [0.594]	0.032 (0.065) [0.626]	0.021 (0.066) [0.752]	0.061 (0.070) [0.386]	0.032 (0.067) [0.630]	0.071 (0.071) [0.323]
Non-affected Mean	0.108	0.108	0.437	0.437	0.446	0.446
R-squared	0.183	0.212	0.184	0.263	0.189	0.262
Observations	809	809	809	809	809	809
Panel B: 2SLS Estimates						
Husband no work	0.080 (0.110) [0.469]	0.081 (0.117) [0.495]	-0.008 (0.106) [0.941]	-0.052 (0.107) [0.628]	-0.014 (0.104) [0.897]	-0.056 (0.110) [0.615]
Husband no work*Nights	0.054 (0.139) [0.700]	0.052 (0.151) [0.735]	0.057 (0.153) [0.713]	0.144 (0.167) [0.393]	0.081 (0.153) [0.601]	0.164 (0.168) [0.336]
Nights	-0.046 (0.080) [0.568]	-0.044 (0.089) [0.623]	-0.026 (0.110) [0.815]	-0.090 (0.114) [0.438]	-0.050 (0.107) [0.647]	-0.110 (0.114) [0.339]
Observations	808	808	808	808	808	808
Market and Age FE	Yes	Yes	Yes	Yes	Yes	Yes
Main Controls	Yes	Yes	Yes	Yes	Yes	Yes
Additional Controls	No	Yes	No	Yes	No	Yes

OLS and 2SLS models looking at heterogeneity with respect to the number of nights spent in the market. Robust standard errors clustered at the market level in parentheses, p -values in square brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The outcomes are binary variables indicating the type of abuse. *Affected* indicates whether the woman's husband was employed in a sector restricted by the Government measures and *Nights* indicates whether the number of nights spent at the market is above the sample median. *Main controls* included are respondent's income in the prelockdown period, husband's education, and a binary variable indicating whether the respondent sells fruit and vegetables in the market. *Additional controls* include religion, respondent's education, gender norms, husband's alcohol consumption and goods sold at the market. Income is winsorized at the 99% level and in '000 Ugandan Shillings. *Non-affected mean* is the mean value of the outcome in the *Non-affected* group.

TABLE H3
HETEROGENEOUS RESPONSE ACCORDING TO VIOLENCE PRE-LOCKDOWN

	Physical		Emotional		Any	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Panel A: OLS Estimates						
Affected	0.051** (0.025) [0.046]	0.051* (0.025) [0.051]	-0.042 (0.058) [0.476]	-0.024 (0.052) [0.647]	-0.030 (0.058) [0.612]	-0.016 (0.053) [0.759]
Affected*Physical violence	-0.021 (0.106) [0.841]	-0.020 (0.097) [0.836]				
Affected*Emotional violence			0.100 (0.084) [0.242]	0.067 (0.074) [0.374]		
Affected*Violence					0.083 (0.089) [0.358]	0.057 (0.076) [0.459]
Non-affected Mean	0.108	0.108	0.437	0.437	0.446	0.446
R-squared	0.182	0.211	0.185	0.263	0.190	0.261
Observations	809	809	809	809	809	809
Panel B: 2SLS Estimates						
Husband no work	0.107* (0.056) [0.063]	0.106* (0.057) [0.069]	-0.086 (0.118) [0.471]	-0.045 (0.108) [0.678]	-0.060 (0.121) [0.624]	-0.029 (0.111) [0.798]
Husband no work*Physical violence	0.009 (0.535) [0.987]	0.016 (0.522) [0.976]				
Physical violence	0.285 (0.300) [0.349]	0.242 (0.296) [0.420]				
Husband no work*Emotional violence			0.235 (0.197) [0.241]	0.151 (0.172) [0.386]		
Emotional violence			0.116 (0.140) [0.414]	0.128 (0.119) [0.288]		
Husband no work*Violence					0.193 (0.210) [0.365]	0.129 (0.179) [0.478]
Violence					0.155 (0.146) [0.296]	0.158 (0.120) [0.197]
Observations	808	808	808	808	808	808
Market and Age FE	Yes	Yes	Yes	Yes	Yes	Yes
Main Controls	Yes	Yes	Yes	Yes	Yes	Yes
Additional Controls	No	Yes	No	Yes	No	Yes

OLS and 2SLS models looking at heterogeneity with respect to violence in the pre-lockdown period. Robust standard errors clustered at the market level in parentheses, p -values in square brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The outcomes are binary variables indicating the type of abuse. *Affected* indicates whether the woman's husband was employed in a sector restricted by the Government measures and the violence variables indicate whether the respondent was victim of that type of violence before the lockdown. *Main controls* included are respondent's income in the prelockdown period, husband's education, and a binary variable indicating whether the respondent sells fruit and vegetables in the market. *Additional controls* include religion, respondent's education, gender norms, husband's alcohol consumption and goods sold at the market. Income is winsorized at the 99% level and in '000 Ugandan Shillings. *Non-affected mean* is the mean value of the outcome in the *Non-affected* group.