

# Food Prices and Intimate Partner Violence (IPV)

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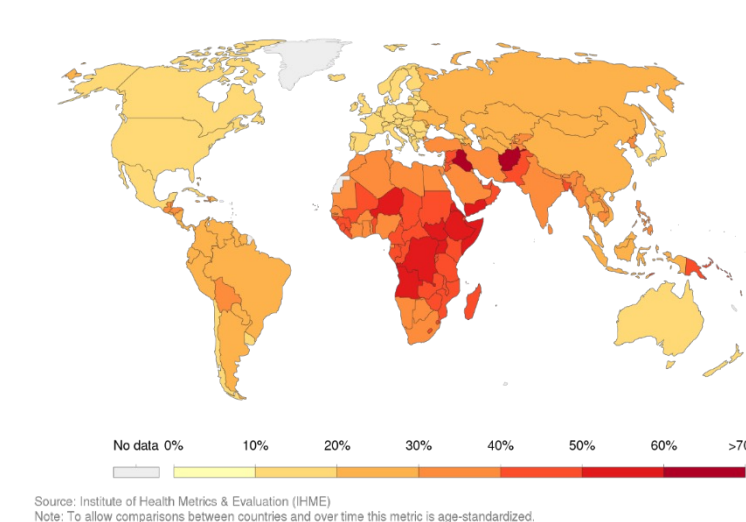
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## 1. Introduction

- Over 1 in 4 females (age 15 +) have suffered from **intimate partner violence (IPV)** at least once, equal to 641 million women (UN, 2015).
- The Food Price Index reveals a notable increase in global food prices, accompanied by a clear rise in volatility in recent years (FAO, 2022).

Women who experienced violence by an intimate partner, 2016  
Share of women, older than 14 years, who experienced physical or sexual violence by an intimate partner in the last year.



FAO Monthly Food Price Index (Jan 1999 – May 2021)



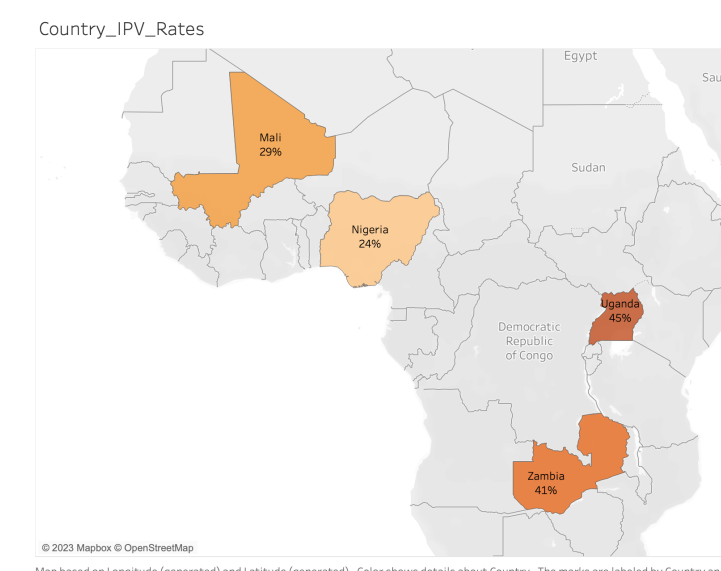
- IPV** can be related to a variety of factors:
  - Individual:** Women with younger age, less education and are currently working (Bachman and Saltzman, 1995; Tandrayen-Ragoobur, 2020); lower food security (Diamond-Smith et al., 2019)
  - Community:** A neighbourhood with higher levels of the disorder (Raghavan et al., 2006) and a higher sex ratio (D'Alessio and Stolzenberg, 2010)
  - Societal:** The higher proportion of women in the industry workforce (Ragtelic et al., 2021); the lower women's participation in agriculture (Alesina et al., 2020)
- High food price level and volatility** can lead to various consequences:
  - Individual:** Poor nutrition intake among mothers and children (Darnton-Hill & Cogill, 2010)
  - Community:** Land redistribution, deepening class, gender and ethnic divides (Beban and Gironde, 2023)
  - Societal:** Higher poverty and more serious food security problems (Barrett, 2010; Gregory & Coleman-Jensen, 2013); higher incidence of social unrest (Bellemare, 2015)
- Knowledge gaps**
  - The studies related to IPV **fail to address the macroeconomic** factors (Cools & Kotsadam, 2017; Tandrayen-Ragoobur, 2020).
  - The **effect of food prices at the household level** is frequently **overlooked** (Bellemare & Lee, 2016).
  - No study has examined the relationship between food prices and IPV.

## 2. Testable Hypotheses

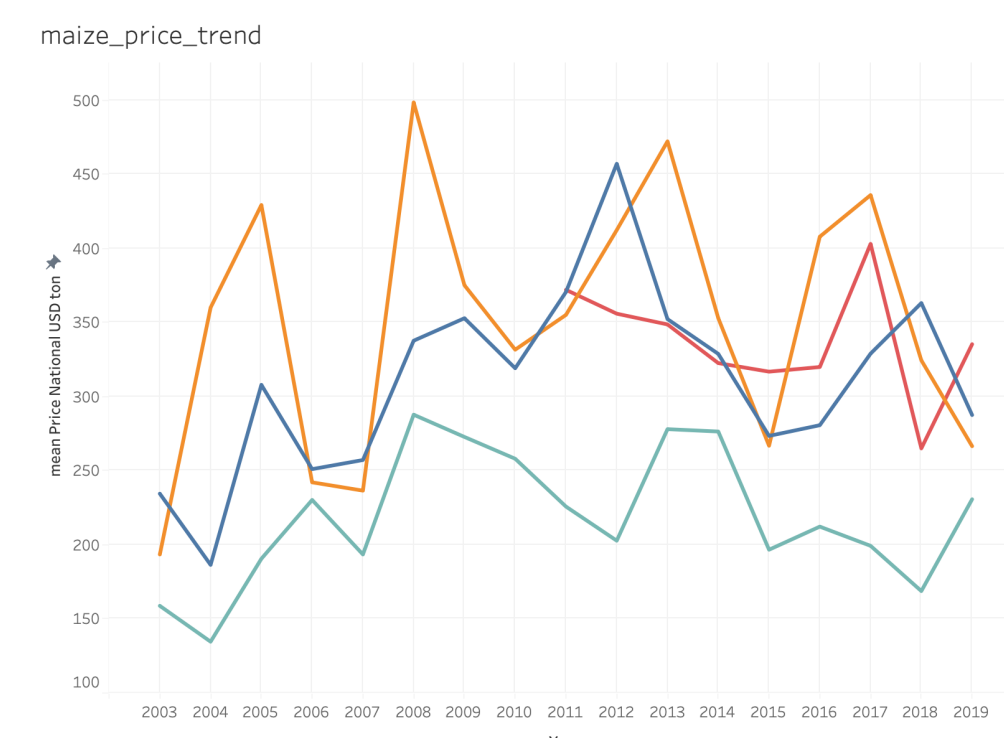
- Hypothesis 1:** Higher food prices would contribute to a higher probability of a woman suffering from IPV.
- Hypothesis 2:** Higher food price volatility would increase the probability of a woman suffering from IPV.

## 3. Data

- Individual and HH-level data:** Four SSA countries, supported by Demographic and Health Surveys (DHS) funded by USAID.
- We use data from Mali (2012, 2018), Nigeria (2013, 2018), Uganda (2011, 2016) and Zambia (2007, 2013, 2018).
- About 13% of women in the sample report experiencing any type of IPV in the previous 12 months.
- Types of violence IPV: emotional (nonphysical behaviour or attitude of controlling, subduing, punishing, or isolating), physical (intentional act causing injury or trauma) and sexual violence (unwanted sexual activity).
- Food price data:** The national and market-level food price data from the World Food Programme (WFP) from 2003 to 2019.
- The price of maize is addressed since maize is the most widely grown staple food and a vital source of food security across Sub-Saharan Africa (Smale et al., 2011).
- The original price data from WFP is in local currency. We use the annual exchange rates to translate local food prices into US dollars.



- 4 SSA countries
- 6,614 clusters
- 146,424 households
- 199,517 females aged between 15 and 49
- from 2007 to 2018



The trend of sum of mean Price National USD/ton for Year. Color shows details about Country.

- Maize prices in four countries exhibited a **similar upward trend** with **severe fluctuations** (unit: USD dollars/ton).

## 4. Empirical Strategy

- Baseline Regression:**

$$IPV_{ikjt} = \beta_0 + \beta_1 \cdot PriceLevel_{j,t-1} + \beta_2 \cdot PriceVolatility_{j,t-1} + \beta_3 \cdot X_{it} + \delta_k + \gamma_j + \mu_t + \epsilon_{ikjt}$$

- IPV<sub>ijt</sub>: 1 if women *i* of age *k* in location *j* experienced IPV in the previous 12 months of year *t*; 0 otherwise
- PriceLevel<sub>j,t-1</sub>: Mean of logged monthly food price in location *j* in year *t-1*
- PriceVolatility<sub>j,t-1</sub>: Variance of logged monthly food price in location *j* in year *t-1*
- X<sub>it</sub>: Time-varying control variables of individual *i* in year *t*
- δ<sub>k</sub>: Age fixed effects
- γ<sub>j</sub>: Location (e.g. country)-fixed effects
- μ<sub>t</sub>: Year fixed effects
- ε<sub>ikjt</sub>: Error term (clustered at cluster level)

## 5. Preliminary Results

Independent Variables	(1)	(2)	(3)	(4)	(5)
Mean of national price	-0.0887*** (0.0104)	-0.0303*** (0.0101)	-0.0339*** (0.0101)	0.124*** (0.0270)	0.109*** (0.0269)
Variance of national price	0.623*** (0.0380)	0.507*** (0.0356)	0.506*** (0.0355)	2.439*** (0.504)	2.355*** (0.503)
Married		-0.0577*** (0.00788)	-0.0566*** (0.00786)	-0.0139 (0.00890)	-0.0124 (0.00890)
Number of children		0.00771*** (0.000792)	0.0116*** (0.000926)	0.00803*** (0.000782)	0.0115*** (0.000911)
Living in urban areas		-0.0185*** (0.00570)	-0.0170*** (0.00572)	-0.0150*** (0.00566)	-0.0136** (0.00568)
Currently working		0.0431*** (0.00407)	0.0459*** (0.00411)	0.0432*** (0.00406)	0.0455*** (0.00409)
Secondary or higher education		-0.0339*** (0.00458)	-0.0325*** (0.00458)	-0.0218*** (0.00459)	-0.0212*** (0.00459)
Partner's alcohol intake		0.215*** (0.00501)	0.216*** (0.00497)	0.220*** (0.00503)	0.221*** (0.00500)
Partner's age		-0.00265*** (0.000191)	-0.000758*** (0.000254)	-0.00271*** (0.000188)	-0.000988*** (0.000254)
Male head in household		0.0139*** (0.00574)	0.0108* (0.00570)	0.0180*** (0.00575)	0.0151*** (0.00572)
Age FE	NO	NO	YES	NO	YES
Country FE	NO	NO	NO	YES	YES
Year FE	NO	NO	NO	YES	YES
Constant	0.730*** (0.0601)	0.458*** (0.0595)	0.340*** (0.0618)	-0.987*** (0.212)	-1.014*** (0.213)
Observations	78,680	78,680	78,680	78,680	78,680
R-squared	0.016	0.067	0.071	0.076	0.079

Robust standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

- Both **higher price levels** and **volatility** are associated with an **increase** in the incidences of **IPV** at a **significant level** (p<0.01) in the full model (column 5).
- One standard deviation **increase in food price level** is associated with about a **27% increase** in the incidence of IPV.
- One standard deviation increase in food price volatility is associated with about **135% increase** in the incidence of IPV.

## 6. Additional Findings

Additionally, we find that:

- The **positive** and **significant** association **between higher food price levels** and **higher incidences of IPV** is:
  - mainly driven by physical and emotional violence, and not by sexual violence.
- The **negative** and **significant** coefficient estimate on **price levels** for sexual violence is to be explored.
- Food price volatility** has a **positive** and **significant** coefficient estimate for sexual violence.
- The impacts of food prices and price volatility vary by country.

## 7. Policy Implications

- Advocating awareness of IPV with early price warning systems:**
  - Launch education and awareness programs about IPV when warning of potential price fluctuations. This could offset possible violent acts to some extent.
- Emergency financial relief for IPV victims:**
  - Establish emergency financial relief programs for individuals suffering from IPV. This could help them break free from abusive situations exacerbated by economic hardships.

## 8. Further Work

- Explore different price levels:** Present more granular results with market-level prices at the cluster level; instrument national prices with international prices for potential endogeneity of prices
- Explore mechanisms:** Explore potential pathways through which food prices affect IPV – food consumption, food security, etc.
- Include more control variables:** Include more control variables to keep results from being biased (e.g. wealth index)

### Research Question

Do rising food prices and price volatility escalate IPV?

- Does higher food prices lead to higher incidences of IPV for women in households?
- Does higher food price volatility lead to higher incidences of IPV for women in households?