Coercive Control after Childbirth: Intimate Partner Violence in Sub-Saharan Africa *

Sébastien Fontenay† Paula E. Gobbi‡ Marc Goñi§
Alejandra Ramos¶

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Abstract

This paper proposes a coercive time-appropriation model where fathers use Intimate Partner Violence (IPV) to reallocate mothers' time toward childcare, reducing their labor productivity. Using DHS data from 28 Sub-Saharan African countries and a pseudo-event study design, we find childbirth increases IPV by 30%, driven by physical and emotional abuse. This effect intensifies with higher partner education and in ethnic groups with historically strong female roles, indicating backlash. Violence is mitigated where political accountability is high or social sanctions are strong. As suggested by our model, mothers experiencing IPV face persistent employment declines. The findings identify motherhood as a "window of danger," suggesting effective policy must mitigate childcare burdens for women, and increase accountability for perpetrators.

JEL classification: J12, J13
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†Universidad de Alcalá & IZA

‡Université Libre de Bruxelles (ECARES) and CEPR

§University of Bergen and CEPR

¶Trinity College Dublin

1 Introduction

Across the globe, Intimate Partner Violence (IPV) remains one of the most pervasive threats to women's health (Campbell 2002) and economic perspectives (Adams et al. 2024; Anderberg and Rainer 2013). This challenge is particularly acute in Sub-Saharan Africa (SSA) (Devries et al. 2013), where traditional norms (Alesina et al. 2021; Tur-Prats 2019), weak institutional capacities (Wado et al. 2021) and significant disparities in resources (Cools and Kotsadam 2017) foster conditions conducive to intra-household conflict. The prevalence is especially severe in Central SSA, where 65.6% of ever-partnered women have experienced IPV—well above the global average of 26.4% (World Health Organization 2013).

Previous research across public health, anthropology, sociology and psychology suggests that IPV incidence is not constant throughout a woman's life, with motherhood representing a potential "window of danger." Clinical studies point to a heightened prevalence of IPV during the postpartum period (Jasinski 2004; Vatnar and Bjørkly 2010). This pattern is theorized to stem from a confluence of factors: biological vulnerabilities during lactation that increase female exposure to coercion (as observed in primates by Picq 2020), evolutionary drivers for males to control reproductive capacity and ensure paternity (Buss and Shackelford 1997), and societal structures where male anxiety over reproductive dependence fosters patriarchal control through violence (Héritier 1996). However, this rich qualitative and theoretical work is limited in its ability to establish causality or identify clear, actionable mechanisms for prevention. Consequently, understanding whether the transition to motherhood itself triggers violence, and what are the potential motives, is a critical next step for informing effective policy to combat this pervasive threat to women's safety in Sub-Saharan Africa and globally.

This paper contributes to this challenge along two main dimensions. First,

we develop a coercive time-appropriation model in which fathers may resort to violence as a coercive device to reallocate maternal time toward childcare at the cost of destroying mothers' labor productivity. Second, this paper provides causal evidence for the link between motherhood and IPV in SSA. We empirically test our model's predictions using a pseudo-event-study design applied to Demographic and Health Survey (DHS) data from 217,566 women across 28 African countries, spanning 1992 to 2019. Inspired by Kleven et al. 2025, we match each mother to a set of childless "doppelgängers" who share age, marital status, education, and location—effectively constructing panel-like trajectories from cross-sectional data. This strategy allows us to trace the risk of IPV from five years before to twenty years after childbirth.

The results strongly support our theoretical framework. IPV rises by approximately 30% in the five years following first birth, driven primarily by physical and emotional violence. Crucially, we find that the increase in IPV risk following motherhood is three times larger for women partnered with highly educated men, consistent with our theoretical prediction that fathers may use violence strategically to preserve child quality while maximizing their own labor-market returns.

Matching our contemporary data on IPV with ancestral ethnic characteristics drawn from the *Ethnographic Atlas* (EA) compiled by Murdock (1967), we find that the increase in IPV is notably sharper among women from ethnic groups with stronger traditions of female empowerment, consistent with a backlash dynamic (Bergvall 2024; Cools and Kotsadam 2017; Erten and Keskin 2018) in which men respond to women's expanding economic or social opportunities with heightened coercion. Conversely, the rise in violence is substantially mitigated in communities where local governance—such as elected village leadership— and more centralized institutions historically fostered a higher degree of public accountability (Gennaioli and Rainer 2007; Michalopoulos and Papaioannou 2013).

Furthermore, analyzing contemporary social norms using Afrobarometer data reveals that the form of post-childbirth violence is moderated by its social acceptability. In ethnic communities where IPV is less socially accepted, the rise in observable physical violence is significantly attenuated. In contrast, the increase in less-visible emotional violence remains largely unchanged. This pattern indicates that social sanctions primarily deter highly detectable forms of abuse, aligning with our model's prediction that higher expected costs curb specific coercive behaviors without eliminating the underlying instrumental motive.

Previous empirical research offers mixed evidence on the relationship between motherhood and IPV. Several small-sample studies based on hospital-based recruitment suggest that IPV increases during pregnancy and the postpartum period (Bowen et al. 2005; Charles and Perreira 2007; Jasinski 2004; Vatnar and Bjørkly 2010). In contrast, findings from nationally representative datasets often indicate a decline in violence during childbearing years (Currie et al. 2022; Jasinski and Kantor 2001). These inconsistencies are compounded by methodological differences: some studies rely on administrative measures such as police reports or arrest records, which are known to substantially understate the true prevalence of domestic violence.

Even among recent studies employing credible causal strategies, the evidence remains divergent. Massenkoff and Rose 2024, using a stacked difference-in-differences approach with longitudinal crime data from Washington State, document an increase in fathers' arrests for domestic violence following the conception—and especially the birth—of the first child. Conversely, Bergvall and Rodríguez Planas 2024 find a sharp decline in IPV during pregnancy and early motherhood in Sweden. In developing countries, causal evidence is even more limited. The most comprehensive effort to date, Britto et al. 2024, shows that the rise in domestic violence prosecutions in Brazil reflects both an increase in actual

violence and a higher likelihood of women reporting such incidents to authorities.

To the best of our knowledge, our study is the first to provide plausibly causal evidence on the relationship between motherhood and IPV using high-quality nationally-representative survey data across 28 countries. More broadly, our findings contribute to three strands of the literature. First, we extend economic models of household conflict (Adams et al. 2024; Anderberg and Rainer 2013; Anderberg et al. 2016; Aizer 2010; Bobonis et al. 2013) by modeling violence as an endogenous instrument for reallocating maternal time toward childcare. In our framework, IPV is modeled as a strategic decision by fathers aiming to increase their private consumption and substitute their childcare time with mother's time, contrasting with interpretations that attribute violence to frustration (Card and Dahl 2011), or opportunistic behavior exploiting women's resources (Bobonis et al. 2013) or lack of thereof (Anderberg et al. 2016; Tertilt and Berg 2015). Second, we bridge the "child penalty" literature (Kleven et al. 2025) and research on gender-based violence by demonstrating that children reshape not only women's labor-market trajectories but also intra-household dynamics. Third, we offer novel empirical support for research linking traditional norms to contemporary gender outcomes (Alesina et al. 2013; Guarnieri and Rainer 2021; Michalopoulos et al. 2019; Teso 2019), including violence against women (Alesina et al. 2021; Bloch and Rao 2002; Guarnieri and Tur-Prats 2023; Tur-Prats 2019), but also fertility decisions (Fontenay et al. 2024) or women's health (Anderson 2018; Becker 2022).

The remainder of this paper is organized as follows. Section 2 outlines the coercive time-appropriation model and its predictions. Section 3 describes the DHS data and construction of ancestral ethnic characteristics. Section 4 presents the empirical strategy and results, including heterogeneity by gender norms and political institutions. Section 5 concludes.

2 Conceptual framework: A model of IPV upon motherhood

This section develops a model of the household that explains why IPV escalates around motherhood. The central mechanism is that childbearing introduces a technology of home production that requires both maternal and paternal time inputs. In this setting, fathers may use violence as a coercive instrument to reallocate maternal time toward home production and to shift intra-household bargaining power in their favor. Yet violence is costly: it destroys part of the household income generated by wives time allocated to the labor market and may expose perpetrators to social sanctions. These features generate testable predictions which we validate empirically in Section 4.

The framework builds on the collective models of the household and economic models of IPV (Adams et al. 2024; Anderberg and Rainer 2013; Anderberg et al. 2016; Aizer 2010),with two features. First, violence distorts the allocation of time between the labor market and home production by asymmetrically reducing mothers' productivity in the labor market.Second, violence shifts intra-household bargaining in favor of the perpetrator, generating private consumption gains in addition to its effects on time allocation. While both channels determine the incentives for violence, only the time-allocation channel can rationalize the observed discontinuity in violence around motherhood. The model is well adapted to in Sub-Saharan Africa institutional context, characterized by high fertility and deeply ingrained social norms that legitimize violenceAs shown in Figure 1, the most widely justification for wife-beating in our sample is that the wife *"neglects the children."*

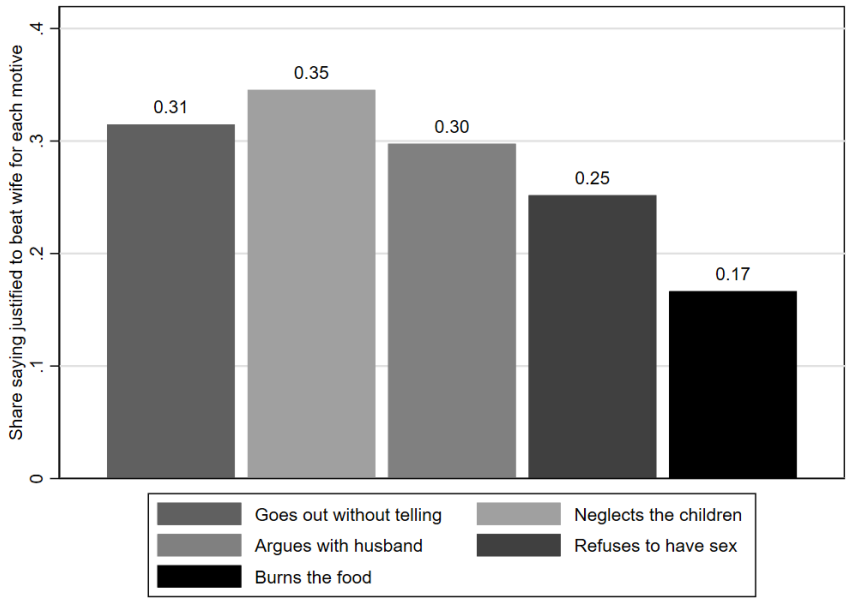


Figure 1: Social Norms Justifying Wife-Beating

Note: The figure plots the share of respondents in the DHS sample who agree that a husband is justified in beating his wife for specific reasons, including neglecting children, arguing, going out without telling him, refusing sex, or burning food. Data come from DHS variables `v744a`–`v744e`.

2.1 Economic environment

A household consists of a wife(w) and a husband (h). They both derive utility from child quality.

Child quality is a public good produced at home via a concave technology:

$$Q = F(E_w t_w, E_h t_h),$$

with t_i denoting the parent i's childcare time and E_i the efficiency of that time. The technology features imperfect sustainability between mother's and father's time.

Each spouse has one unit of time that is either devoted to childcare or to the labor market ($t_i + l_i = 1$). While childcare time is unpaid, labor market work generates potential income $E_i w_i(1 - t_i)$.

In addition to child quality, spouses derive utility from private consumption q_i, and violence v:

$$U_i = U_i(Q, q_i, v), \qquad v \in \{0, 1\}.$$

Utilities are strictly increasing and concave in Q and q_i, and additively separable in violence, v.

For the wife, violence generates direct disutility: $(U_w(Q, q_w, 1) < U_w(Q, q_w, 0))$. For the husband, violence yields a non-pecuniary payoff $\kappa > 0$ (the *expressive motivation of violence*), but may expose him to sanctions. Let p denote the probability that violence is detected and sanctioned, and $\delta > 0$ the associated sanctions.

$$U_h(Q, q_h, 1) = U_h(Q, q_h, 0) + \kappa - p\delta.$$

The first feature of the model is that violence has a productivity cost for the victim, both in the home production and in the labor market. We refer to the share of female labor in home production and in the labor market that is not destroyed by violence as $\alpha^t(v)$ and $\alpha^l(v)$. Our key assumption is that the productivity cost of violence is higher for her labor market than for childcare, i.e. $\alpha^l(v) < \alpha^t(v)$, so that violence disproportionately reduces the effective return to mother's labor market time.The household income is then:

$$\alpha^l(v)E_w w_w(1-t_w) + E_h w_h(1-t_h),$$

while home production is:

$$Q = F(\alpha^t(v)E_w t_w, E_h t_h).$$

This asymmetry allows violence to reallocate maternal time toward home production, making it a coercive time appropriation instrument. As a simplifying assumption, we normalize the childcare cost of violence to one ($\alpha^t(v) = 1$). We denote $\alpha(v) \in (0, 1]$ as the wife's labor-market productivity remaining under violence, with $\alpha(0) = 1$ under no violence.

Given a violence scenario, husband and wife choose the private consumptions and time allocations that maximize a weighted sum of their individual utilities,

$$\left(1 - \theta\left(\bar{v}, \frac{E_w w_w}{E_h w_h}\right)\right) U_w(Q, q_w, \bar{v}) + \theta\left(\bar{v}, \frac{E_w w_w}{E_h w_h}\right) U_h(Q, q_h, \bar{v})$$

where

$$\theta\left(v, \frac{E_w w_w}{E_h w_h}\right) \in (0, 1)$$

is the Pareto weight of the husband and $1 - \theta(\cdot)$ is the Pareto weight of the wife.

The second feature of the model is that $\theta(\cdot)$ is decreasing in the wife's relative outside option $\left(\frac{E_w w_w}{E_h w_h}\right)$ and increasing in violence ($\theta(1,\cdot) > \theta(0,\cdot)$), capturing the fact that violence can be used by perpetrators as a consumption appropriation instrument.

Household decisions are sequential. In the first stage, For a given scenario of violence, the household chooses (t_w, t_h, q_w, q_h) to maximize the weighted sum of utilities subject to the child quality technology and the household budget constraint. Next, a second stage, the husband chooses whether to inflict violence (v) by comparing his individual utility with and without violence.

2.2 Optimal Allocations, conditional on violence

In Appendix C we derive the First-Order Conditions (FOC) for an interior optimum which yield the optimality conditions described below.

Private consumptions. Optimal private consumptions are such that the ratio of marginal utilities equals the ratio of Pareto weights.

$$\frac{U_{m,q_h}(Q, q_h, \bar{v})}{U_{f,q_w}(Q, q_w, \bar{v})} = \frac{1 - \theta\left(\bar{v}, \frac{E_w w_w}{E_h w_h}\right)}{\theta\left(\bar{v}, \frac{E_w w_w}{E_h w_h}\right)}. \tag{1}$$

As violence increases $\theta(\cdot)$, it shifts private consumption toward the husband. This captures the private consumption appropriation motivation for violence.

Time allocation. The corresponding optimal time allocations are such that the marginal rate of technical substitution between maternal and paternal childcare involvement equals their relative opportunity cost of time.

$$\frac{F_1(E_w t_w, E_h t_h)}{F_2(E_w t_w, E_h t_h)} = \frac{\alpha(v) w_w}{w_h}. \tag{2}$$

By reducing the effective return to the mother's time allocated to the labor market, violence arises as a coercive instrument that induces a reallocation of her time toward the production of child quality. This time-appropriation channel is specific to our technology of home production and is why motherhood discontinuously introduces an additional incentive for violence.

2.3 Husband's Violence Decision

Now we focus on the husband's decision on whether or not to use violence. Let (Q^v, q_h^v) denote optimal child quality and husband's private consumption under violence regime v. The husband will inflict violence if $U_h(Q^1, q_h^1, 1) \geq U_h(Q^0, q_h^0, 0)$ or equivalently:

$$\kappa + \left[U_h(Q^1, q_h^1, 0) - U_h(Q^0, q_h^0, 0)\right] \geq p\delta, \tag{3}$$

where the left-hand side captures the gains of violence (direct and indirect) and the right-hand side the cost of violence. The term in square brackets, the indirect gains from violence, can be further decomposed into two components:

$$\underbrace{U_h(Q^1, q_h^1, 0) - U_h(Q^0, q_h^1, 0)}_{\text{time appropriation channel}} + \underbrace{U_h(Q^0, q_h^1, 0) - U_h(Q^0, q_h^0, 0)}_{\text{consumption appropriation channel}}.$$

The first term captures the utility gains induced by the from time-appropriation motivation for violence and arises only upon motherhood. The second term captures the private-consumption appropriation motivation for violence and operates even in the absence of children.

In this sense, motherhood amplifies the strategic use of violence by allowing the perpetrator to coerce the mother into childcare to substitute his own parental involvement time.

2.4 Comparative-static predictions

The model yields several testable predictions about how IPV responds to shifts in fertility and household dynamics:

(H1) Motherhood and violence. The transition to motherhood introduces a new incentive for violence: coercive time appropriation. In the presence of home production of child quality with imperfect substitutability of parental time, violence induces a shift of women's time from market work to home production, allowing perpetrators to reallocate their own time away from home production toward market work.

(H1.1) Number of children Higher number of children increases the household's home production Q, raising the potential utility gains of a husband that uses violence to reallocating the wife's time toward home production. This is a level effect: more children strengthen the time-appropriation motive for violence. Yet, because the home production technology exhibits diminishing marginal returns in N, the marginal gains from each additional child decline. Thus, while higher fertility increases the overall incentives for violence, the effect of each additional child is smaller.

(H3) Wife's economic empowerment. An increase in the wife's wage w_w raises household income and strengthens the private consumption gains from vi-

olence. At the same time, higher w_w increases the opportunity cost of violence-induced distortions in time allocation, weakening the time-appropriation channel. The overall effect of w_w on violence therefore depends on the relative importance of private consumption versus child quality in the father's utility. When the father places relatively greater importance on private consumption than on child quality, backlash arises.

(H4) Social acceptability of violence. Higher sanctions against perpetrators of violence, captured by increases in δ, raise the expected cost of violence without affecting household allocations. Violence therefore declines as social acceptability of violence falls or enforcement strengthens.

(H5) Detection of violence. Conditional on identical productivity costs, forms of violence with a higher probability of detection p face a higher expected cost. Consequently, sanctions are more effective at deterring highly observable forms of violence, such as physical violence, than less observable forms, such as emotional violence.

3 Data

We use the domestic violence module of the Demographic and Health Survey (DHS) to examine patterns of IPV. A key strength of the DHS is its provision of nationally representative data across a wide range of Sub-Saharan African countries. For this study, we compiled all available DHS surveys that include the domestic violence module. Our final dataset covers women's self-reported experiences of IPV in 28 Sub-Saharan African countries. To maximize sample size, we pool all available DHS survey waves within each country. The number of re-

spondents per country ranges from approximately 1,500 in Namibia to over 20,000 in Zambia.[1] Figure 2 shows the coverage of the African continent offered by the DHS data and the important differences across countries in IPV prevalence. Our sample should offer crucial external validity as it covers a very diverse set of countries from South-Africa to Mali or Ethiopia, with IPV risk ranging from below 20 percent to above 80 percent.

Another important advantage of the DHS surveys is the ability to accurately track respondents' fertility histories. In particular, variable `v212` records the age at which a woman gave birth to her first child. This variable is central to our empirical strategy, as it allows us to precisely identify the timing of the transition to motherhood. We use this information in our event study design (detailed in the next section) to estimate the effect of entering motherhood on the likelihood of experiencing IPV.

3.1 Measuring IPV

We construct three indices of IPV using responses from the DHS domestic violence module, based on 12 questions. The first index, capturing physical violence, takes a value of 1 if the respondent reports ever experiencing any of the following behaviors from her spouse: "pushed, shook, or threw something" (`d105a`), "slapped" (`d105b`), "punched with a fist or something harmful" (`d105c`), "kicked or dragged" (`d105d`), "tried to strangle or burn" (`d105e`), "threatened with knife/gun or other weapon" (`d105f`), or "twisted her arm or pulled her hair" (`d105j`). The second index reflects sexual violence and equals 1 if the woman reports ever being "forced to have sex" (`d105h`) or coerced into other unwanted "sexual acts" (`d105i`). The third index measures emotional violence, taking a value of 1 if the respondent indi-

[1] Appendix Table A.1 provides a complete list of the countries included, along with the corresponding survey phases.

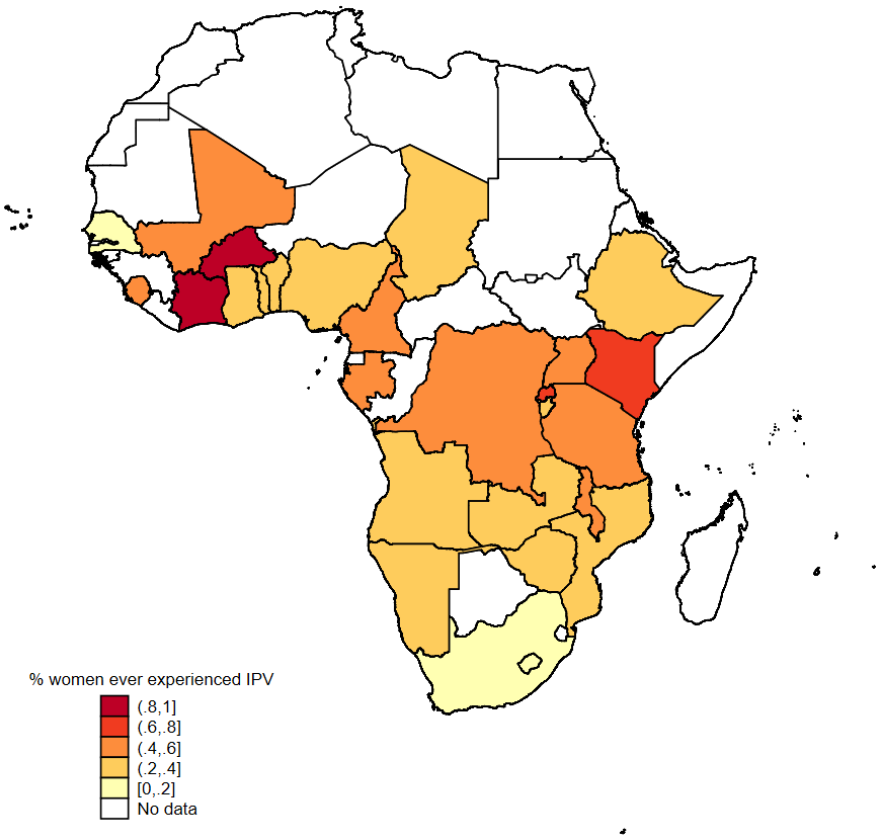


Figure 2: IPV Prevalence across Africa

Note: The map presents the share of DHS respondents reporting any form of IPV (physical, sexual, or emotional) across 28 Sub-Saharan African countries. Data are from the DHS domestic violence module.

cates that her spouse ever "humiliated her" (`d103a`), "threatened her with harm" (`d103b`), or "insulted her or made her feel bad" (`d103c`). These three indices are further combined into a single binary indicator that captures whether the woman has ever experienced any form of IPV—physical, sexual, or emotional—from her spouse.

3.2 Sample description

Our main sample includes only currently cohabiting / married women, as we aim to isolate the effect of motherhood on IPV—not the impact of having a partner more generally. By focusing on women who are cohabiting or married at the time of the interview, we ensure that any observed relationship between motherhood and IPV is not confounded by differences in partnership status. The sample includes 217,566 women across 28 Sub-Saharan African countries. Table 1 presents descriptive statistics for our sample. The average respondent is 31 years old, and the vast majority (94%) have at least one child. Women report an average of 3.7 children, and the age of the eldest child is approximately 12.4 years. In terms of fertility timing, the mean ages at first sexual intercourse, marriage, and first birth are 17.0, 18.5, and 19.3, respectively. Educational attainment varies substantially: 33% of women have no formal education, 37% completed primary education, 26% secondary, and only 4% have attained higher education. A large majority (67%) reside in rural areas.

Experiences of IPV are widespread: 37% of women report having experienced any form of IPV, with 21% having experienced physical violence, 11% sexual abuse and 27% reporting emotional violence. These patterns underscore both the high prevalence of IPV and the diversity of demographic and socioeconomic backgrounds in our sample.

Importantly, 6% of the women in our sample are childless at the time of the survey. We leverage this subgroup in a pseudo-event study framework by treating them as a comparison group for women who have already transitioned into motherhood. This design enables us to compare cohabiting/married women with and without children who are otherwise similar in observable characteristics. By matching mothers to childless women on variables such as age and education we aim to isolate the effect of motherhood per se on the risk of experiencing IPV.

Table 1: Descriptive Statistics of the DHS Sample

Variable	**Mean**	**Std. Deviation**	**Min**	**Max**
Rural (0/1)	0.670	0.470	0	1
No education (0/1)	0.328	0.470	0	1
Primary education (0/1)	0.372	0.483	0	1
Secondary education (0/1)	0.257	0.437	0	1
Higher education (0/1)	0.042	0.201	0	1
Age	31.190	8.393	15	49
Age at first intercourse	16.965	3.235	4	49
Age at marriage / cohabitation	18.524	4.478	2	49
Age at first birth	19.265	3.886	7	46
Has children (0/1)	0.937	0.244	0	1
Number of children (#)	3.696	2.551	0	17
Age of eldest child	12.411	8.169	0	40
Experienced IPV (0/1)	0.374	0.484	0	1
Experienced physical violence (0/1)	0.208	0.406	0	1
Experienced sexual violence (0/1)	0.112	0.316	0	1
Experienced emotional violence (0/1)	0.273	0.445	0	1
Number of observations	217,566			

Note: The table reports summary statistics for 217,566 married or cohabiting women from 28 Sub-Saharan African countries who answered the DHS domestic violence module. All variables are defined in Section 3.2.

3.3 Matching with ancestral ethnic characteristics

In Sections 4.6 and 4.8, we investigate the extent to which deep-rooted cultural norms shape contemporary patterns of IPV. To do this, we merge respondents' self-reported ethnic affiliation—available for 156,462 women in our sample—with ancestral ethnic characteristics drawn from the *Ethnographic Atlas* (EA) compiled by Murdock (1967). The EA provides historical ethnographic data on 842 African ethnic groups, based on observations from the 19$^{\text{th}}$ and early 20$^{\text{th}}$ centuries, including social structures such as matrilineality, polygyny, pastoralism, and the practice of bride price.

We link these historical traits to contemporary IPV outcomes by matching ethnic groups reported in the DHS (variable `v131`) to those listed in the EA. In cases where ethnicity is not directly available, we use language as a proxy, relying on DHS language variables such as `s119` for Liberia (2006), `s119` and `s114` for Namibia (2006 and 2013), and `s118` for Nigeria (2003).

The matching process is generally straightforward, given the relatively stable naming conventions across sources. However, in more ambiguous cases—such as when ethnic labels are regionally variant—we rely on the detailed correspondence tables developed by Teso (2019) and Michalopoulos et al. (2019). These mappings incorporate linguistic and ethnographic proximity, drawing on external resources such as the Joshua Project and the Ethnologue database.

Using this methodology, we successfully assign approximately 80% of DHS respondents with reported ethnicity to their corresponding ancestral group in the EA. This enables us to explore how long-standing cultural norms continue to shape gender dynamics and IPV risk in the present day.

4 Empirical analysis

To investigate the causal impact of motherhood on IPV, this section employs a novel empirical strategy developed by Kleven et al. 2025 that adapts the event study design to cross-sectional data. This methodology allows for causal inference by constructing pseudo-panels that replicate the structure of event studies typically reliant on panel data. Leveraging this approach allows for a robust analysis of IPV dynamics around childbirth, providing new insights into how abuse evolves over time—a particularly valuable feature given the scarcity of longitudinal datasets in IPV research, especially in developing countries. Using cross-sectional survey data also offers key advantages: such datasets are more widely available than longitudinal data and are less prone to reporting biases (e.g., underreporting in police records). Furthermore, applying this methodology across 28 countries greatly enhances the external validity of our findings.

4.1 Pseudo-event study

The pseudo-event study approach, developed by Kleven et al. 2025, can be adapted to examine how motherhood influences IPV by constructing a pseudo-panel that matches mothers to childless women with similar observable characteristics. Specifically, for a mother observed at event time $t = 0$ (the year of first childbirth), surrogate observations for pre-child event times ($t < 0$) are created by matching her to childless women from the same country, with the same age, marital status, and education. The matching variables are intentionally parsimonious, ensuring both consistent definition and full coverage across all countries. At the same time, they are important predictors of fertility patterns. When multiple childless women fall within the same observable cell (defined by country, age, marital status, and

education), each mother is matched to all eligible matches in that cell. These matches are then weighted inversely by the cell size ($1/k$, where k is the number of childless women in the cell). This methodology allows for the construction of event studies around childbirth, mimicking the structure of true panel data, while offering 5 years of pre-child data.

For a given IPV index Y_{it} (e.g., incidence of physical violence), we estimate the linear probability model of the following equation:

$$Y_{it} = \alpha \cdot D_{it}^{Event} + \beta \cdot D_{it}^{Age} + \gamma \cdot D_{it}^{Year} + v_{it}, \tag{4}$$

where D_{it}^{Event} represents dummies for event times relative to first childbirth. In all our graphs, the omitted event time dummy is chosen as $t = -2$, that is the year before pregnancy. D_{it}^{Age} and D_{it}^{Year} are age and year fixed effects to control non-parametrically for lifecycle trends and time trends.

The primary coefficient of interest is α, which captures the effect of having children on the likelihood that mothers experience IPV. Importantly, as shown in the graphs in the following section, α should remain statistically indistinguishable from zero in the pre-birth periods. This indicates that mothers at event time $t = 0$ were on similar trajectories as their matched counterparts, providing evidence for the internal validity of our matching strategy. Readers should pay particular attention to the immediate changes following childbirth, as the credibility of the event study design hinges on the assumption that mothers do not precisely time their first pregnancy. This assumption is most plausible within a narrow window around childbirth, making the methodology especially well-suited for analyzing short-term effects. Accordingly, in the next section, we limit our interpretation to the years immediately following childbirth and avoid drawing conclusions from longer-term trends.

4.2 Motherhood and IPV

In this subsection, we present the estimated effects of motherhood on each component of our IPV index—physical, sexual, and emotional violence—as well as the composite index capturing any form of violence. Figure 3 displays the evolution of the coefficient α from Equation (4), normalized relative to event time $t = -2$ (the year preceding pregnancy). The graphs reveal that the coefficient estimates for all pre-birth periods are statistically indistinguishable from zero, confirming the parallel trends assumption. This suggests our matching strategy successfully identified comparable childless women who followed similar trajectories to new mothers prior to childbirth. The post-birth variation in α can therefore be interpreted as the causal effect of motherhood on the probability of experiencing IPV.

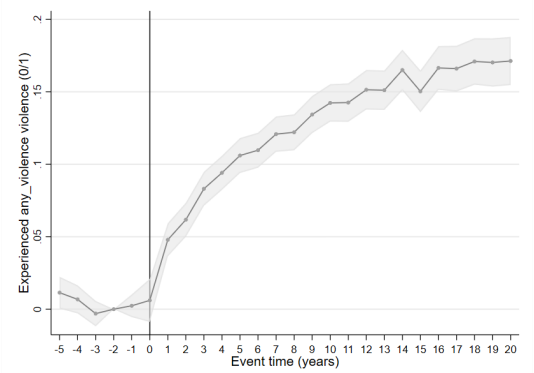
The first panel of Figure 3a, depicting our composite IPV index, reveals a striking pattern: the probability of experiencing IPV surges immediately after childbirth. In the first postnatal year, the estimated likelihood of abuse increases by 4.8 percentage points relative to event time $t = -2$, escalating to a 10.6 percentage points increase by year five. These effects represent substantial relative increases - when compared to the baseline prevalence of 29.5% among childless women, motherhood elevates IPV risk by 16% in the immediate postpartum period, growing to a 36% higher risk after five years. This pattern strongly supports our theoretical framework's first prediction: that the transition to motherhood serves as a significant triggering event for IPV.

We now turn to examining the most common forms of violence triggered by motherhood. Panels 3b and 3d reveal that emotional and physical violence show the most pronounced increases following childbirth, with spikes of 4.5 and 3.1 percentage points respectively at year one, rising to 9.4 and 8.1 percentage points by

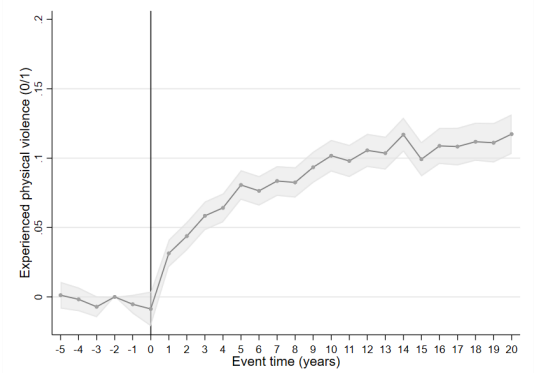
year five. Compared to women without children, this represents a 46% increase in emotional violence and a 53% increase in physical violence within five years postpartum. In contrast, sexual violence does not show a significant rise in the year after childbirth (Panel 3c) and reaches only a modest increase of 3.2 percentage points by year five. From this decomposition, we conclude that motherhood predominantly triggers emotional and physical violence rather than sexual violence. This pattern aligns with our model's prediction that the mother's partner may use coercion to reassert control during the reorganization of domestic roles—a dynamic more likely to manifest as emotional and physical violence than sexual violence.

We next extend our analysis to examine whether motherhood is associated with other forms of household violence—that is, violence either perpetrated by the woman herself or inflicted by other family members (Appendix Figure A.1). Panel A.1a investigates whether the transition to motherhood triggers physical aggression from women toward their partners in cases where the latter "are not hurting them" (DHS variable `d112`). The estimates reveal no evidence of such an effect in the years following childbirth. Panel A.1b then explores the probability that the female respondent experiences violence from other male figures in the household, specifically her father or father-in-law. Again, we find no significant change around the time of motherhood that could be attributed to the birth of the first child. Overall, these results indicate that motherhood does not increase the likelihood that women themselves become more violent, nor that they are more frequently targeted by other male relatives. In other words, the rise in violence following childbirth appears to be confined to the husband–wife relationship (and only in one direction), rather than reflecting a broader increase in household aggression.

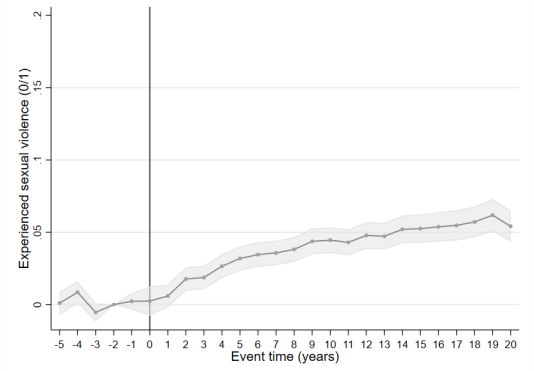
(a) Any form of violence (0/1)



(b) Physical violence (0/1)



(c) Sexual violence (0/1)



(d) Emotional violence (0/1)

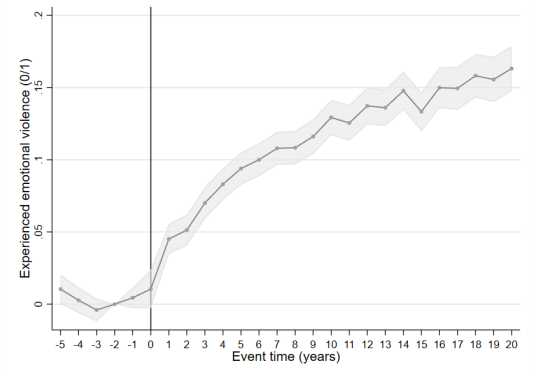


Figure 3: Effects of Motherhood on Intimate Partner Violence

Note: Event-study estimates of the effect of motherhood on IPV, corresponding to coefficients α in equation (4). Each panel plots the estimated change in the probability of experiencing (a) any IPV, (b) physical IPV, (c) sexual IPV, or (d) emotional IPV relative to two years before first childbirth. Shaded areas denote 95% confidence intervals.

4.3 Motherhood vs. Cohabitation

In the SSA context, family formation often involves a rapid succession of cohabitation and childbirth, raising a key empirical question: is the observed increase in IPV driven by motherhood, cohabitation, or both?

As shown in Appendix Figure A.3, only about 15% of households conceive a child before cohabitation, whereas nearly 70% have their first child within two years of moving in. Although the two events are closely intertwined, there remains sufficient temporal variation to separately identify their respective effects on IPV. To disentangle these closely related events, we estimate a joint-event study model following Kleven et al. 2025, allowing us to isolate the independent dynamic effects of entering a union and becoming a mother:

$$Y_{itt'} = \alpha \cdot D_{it}^{Child} + \delta \cdot D_{it'}^{Cohabitation} + \beta \cdot D_{it}^{Age} + \gamma \cdot D_{it}^{Year} + \nu_{itt'}, \tag{5}$$

where $Y_{itt'}$ denotes the probability to ever suffer IPV for woman i observed at event time t since first birth and t' since first cohabitation. The vectors D_{it}^{Child} and $D_{it'}^{Cohabitation}$ contain a full set of event-time dummies centered around the respective events. The coefficients α and δ capture the dynamic causal effects of motherhood and cohabitation, conditional on age and calendar-year fixed effects.

Because the domestic-violence module is administered only to women currently cohabiting, the event time for cohabitation is normalized to $t' = 0$. Although this implies the absence of a pre-event trend, we believe that the exercise is still informative. Indeed, as shown earlier in Figure 3a, IPV responses to childbirth materialize primarily in the first year postpartum, whereas IPV risk at $t = 0$ is highly similar to pre-birth trends.

Figure 4 displays the estimated trajectories of IPV around cohabitation and motherhood. Both events are associated with a statistically significant rise in IPV of roughly four percentage points during the first year after the event. The initial magnitude suggests that entering a cohabiting relationship itself entails a discrete increase in exposure to violence–likely reflecting the onset of economic and social interdependence as partners begin sharing space and resources.

However, while the effect of cohabitation remains relatively stable over the following two decades, the effect of motherhood grows markedly over time. By year six after first childbirth, IPV prevalence among mothers is approximately twice as high as among women of the same cohabiting duration without children. This divergence supports the mechanism proposed in our coercive time-appropriation model: violence is used strategically to reallocate maternal time toward childcare, and its intensity scales with the household's cumulative childcare burden. Overall, our results echo those of Adams et al. 2024, who show that cohabitation itself can trigger coercive dynamics, but we extend their findings by demonstrating that the risk of IPV intensifies markedly after the transition to motherhood.

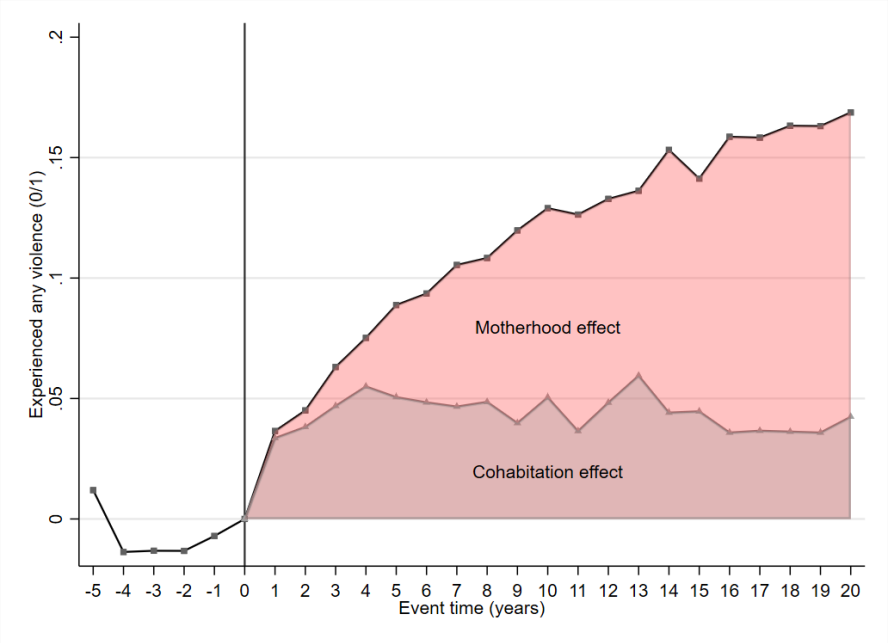


Figure 4: Motherhood vs. Cohabitation

Note: Comparison of IPV dynamics around first cohabitation and first childbirth. Both event times are centered at year zero. The figure plots the estimated event-study coefficients, corresponding to coefficients α and δ in equation (5).

4.4 IPV and employment opportunities

The surge in IPV upon motherhood, documented above, aligns with our model's prediction of coercion aimed at reallocating maternal time. We now test a critical economic corollary of this mechanism (H1): that abusive partners use violence to restrict mothers' labor force participation, thereby enforcing a specialization in childcare. This assumption is supported by previous literature documenting the link between IPV and the restriction of women's employment opportunities (Adams et al. 2012; Adams et al. 2024; Anderberg and Rainer 2013; Browne et al. 1999; Lloyd and Taluc 1999). In particular, Adams et al. 2024, using a matched-control event-study design similar to ours, show that women who cohabit with physically abusive partners experience substantial declines in employment from

the onset of cohabitation. In their model of economic abuse, Anderberg and Rainer 2013 also illustrate how abusers deliberately engage in acts of economic sabotage to push their partners toward specialization in home production.

Our model predicts similar dynamics around motherhood, suggesting that men may use violence to shift mothers' time allocation toward childcare. Unfortunately, no cross-country time use surveys are available for SSA to support this assumption. However, we can test it by examining whether women in abusive relationships are more likely to stop working at the onset of motherhood—precisely when IPV tends to intensify. To investigate this, we use the DHS variable `v714`, which records whether the respondent is currently employed at the time of the survey.[2]

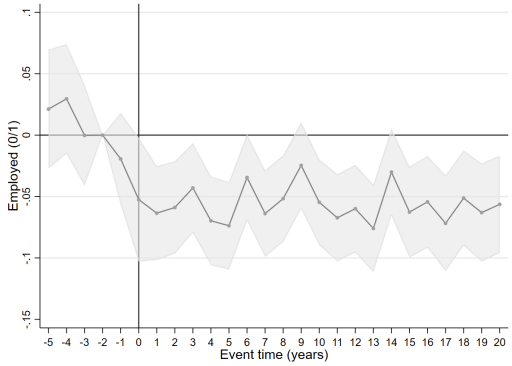
We use this alternative employment outcome to examine the economic consequences of IPV around the transition to motherhood. Specifically, we extend our baseline model in equation (4) by interacting the event-time dummies with an indicator for having ever experienced IPV. This difference-in-differences specification allows us to compare employment trajectories before and after childbirth between women who have suffered IPV and those who have never been victims. We then plot the coefficients on these interactions in Figure 5, which capture the differential evolution of employment following motherhood for women exposed to IPV relative to their non-abused counterparts. Panels 5a and 5b present the coefficients of the interactions, distinguishing between women who have ever experienced physical or emotional violence—the two forms of IPV that we previously identified as being triggered by motherhood.

Across both panels, we observe that pre-birth employment trajectories remain essentially unchanged for victims and non-victims of IPV. In contrast, the onset of

[2]Women who have worked in the past 7 days, including those who did not work in the past 7 days but who are regularly employed and were absent from work for leave, illness, vacation, or any other such reason.

motherhood is associated with a sharp and persistent employment decline of IPV victims in comparison to non-victims. The effect is strongest among women who have suffered emotional IPV, for whom employment falls by about 10 percentage points at the time of the first birth and never catches up with non-victim of emotional violence in the following 20 years after childbirth. Relative to the 51.6% employment rate among childless women, this implies an a 20-percent reduction in employment probability for IPV victims after childbirth. These results reinforce our theoretical interpretation of violence as a coercive time-appropriation mechanism, whereby abusive partners restrict women's participation in the labor market to reallocate their time toward childcare in the aftermath of motherhood.

(a) Physical violence (0/1)



(b) Emotional violence (0/1)

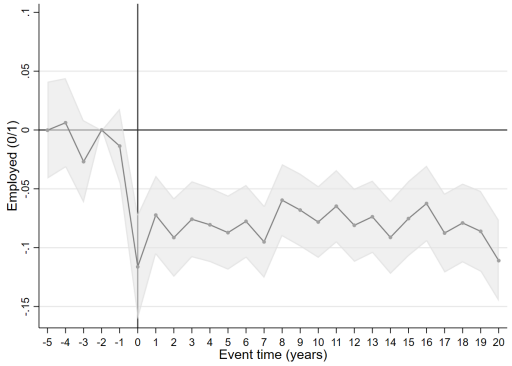


Figure 5: Comparison Employment Trajectories around Motherhood of Women Subject or not to IPV

Note: The figure plots the coefficients from a specification that interacts event-time dummies around the first birth with an indicator for ever having experienced physical or emotional IPV. Coefficients represent the differential evolution of employment before and after motherhood for women exposed to IPV versus non-victims. The omitted period is two years before childbirth ($t = -2$). Shaded areas show 95% confidence intervals.

4.5 Heterogeneity Across Locations and Household Characteristics

We now examine how the substantial increase in IPV risk upon motherhood varies across key household characteristics. Understanding such heterogeneity is crucial for assessing the validity of the proposed mechanisms in our coercive time-appropriation model, but also to identify specific demographic and socioeconomic factors that might amplify violence in the household.

The heterogeneity analysis is reported in Figure 6. While Panels 6a and 6b–based on the child's gender and partners' age gap[3]–show no statistically significant differences, Panels 6c and 6d reveal clear heterogeneity. Panel 6c shows that the rise in IPV following childbirth is significantly stronger among households with more educated fathers–with at least completed secondary education. Five years after the birth of their first child, more educated fathers are already 15 percentage points more likely to have resorted to violence against their partner, against 5 percentage points for fathers with no education or who attended only primary school. Those results are perfectly consistent with our coercive time-appropriation model, in particular with H2: more educated fathers have higher potential private consumption gains from violence, without affecting child quality. Panel 6d further indicates that the effect of motherhood on IPV is larger in the long run in urban settings. This pattern is also consistent with our model, stating that when women's outside options are stronger, such as in cities, conflicts over time allocation will be more persistent.

Next, we also explore differences across a selected set of SSA countries representing different regions and levels of economic development. Overall, the es-

[3]We distinguish between households in which the woman is older or the man is maximum 5 years older than her partner, and households where the man is more than 5 years older.

timates in Appendix Figure A.2 indicate that motherhood is systematically associated with a substantial rise in IPV within ten years after childbirth, though the magnitude varies across contexts. Each panel reports the estimated effect of motherhood over the ten years following the first birth, corresponding to the period when the rise in IPV is most pronounced and before it levels off in later years. In the central African countries of Cameroon and Congo, the average coefficients suggest an increase in IPV of roughly 4-5 percentage points relative to the pre-birth period. In the western African countries of Burkina Faso and Nigeria, the effects are slightly larger, with a magnitude of 8–9 percentage points. In eastern Africa—notably Uganda, Tanzania, and Malawi—the motherhood effect on IPV is even stronger, averaging 10–20 percentage points. Finally, the pattern observed for Zimbabwe, located in the southern part of the continent, closely mirrors that of its eastern African counterparts, with IPV increasing by about 15 percentage points within ten years after childbirth—equivalent to a 50% higher rate compared to childless women.

Importantly, these cross-country differences do not appear to follow a clear gradient of economic development: for instance, Zimbabwe and Congo—despite having highly similar GDP per capita—display striking differences in the effects of motherhood on IPV. This suggests that economic conditions cannot account for the observed heterogeneity. For this reason, in subsections 4.6 and 4.8, we turn to explore whether deeply rooted cultural norms and institutional legacies may offer a more compelling explanation for the intensity of IPV after motherhood.

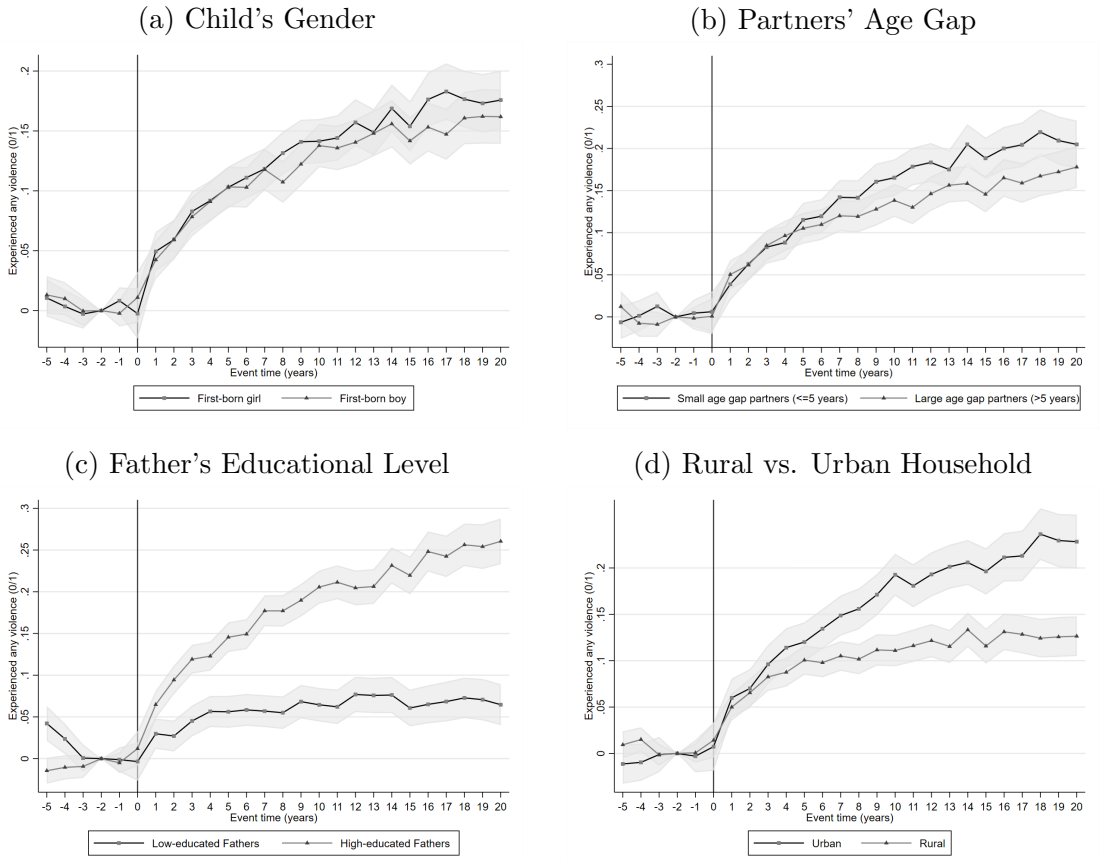


Figure 6: Heterogeneity Analysis based on Child's, Father's and Household's Characteristics

Note: Event-study estimates of the effect of motherhood on IPV relative to two years before first childbirth, corresponding to coefficients α in equation (4). Panel (a) splits by child's gender; (b) by partners' age gap; (c) by father's education; (d) by rural versus urban residence. Shaded areas denote 95% confidence intervals.

4.6 Effects of female empowerment

We now turn to examining the role of deep-rooted cultural norms in shaping the differences found in the previous section. Specifically, we test the third prediction of our theoretical framework: that the increase in violence following motherhood is more pronounced when women have stronger outside options and fathers place a greater relative importance on private consumption. Our model posits that, in this

scenario, women's economic empowerment raises the incentives for instrumental violence despite its efficiency costs.

To test this prediction, we construct a Female Empowerment Index (FEI) that captures women's participation across multiple dimensions of social life. A higher FEI reflects greater female engagement in society. Our index is derived as the inverse of the Male Dominance Index developed by Guarnieri and Tur-Prats 2023. Specifically, we draw on 10 ethnographic traits from Murdock 1967's Ethnographic Atlas, identified by Guarnieri and Tur-Prats 2023 and other studies as relevant indicators of gender (in)equality. Traits such as matrilineality, polygyny, gathering, fishing, shifting agriculture, and non-herding animal husbandry are associated with more egalitarian gender norms. In contrast, the use of the plough, nuclear family structures, pastoralism, and the practice of bride price are linked to male-dominant roles. Guarnieri and Tur-Prats 2023 demonstrate that their index correlates strongly with contemporary measures of gender (in)equality, such as female labor force participation. By leveraging these historical cultural norms—documented in the 19th and 20th centuries—we mitigate concerns of simultaneity bias that would arise from relying solely on current DHS data for heterogeneity analysis.

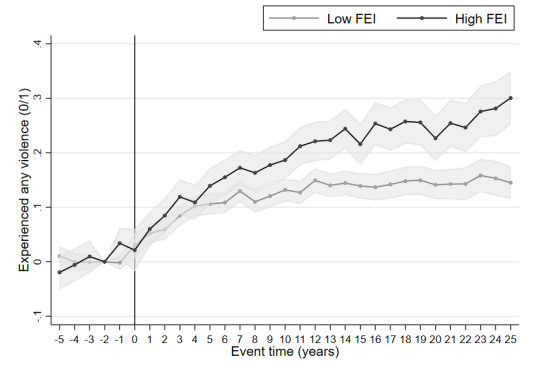
Following Guarnieri and Tur-Prats 2023, we use Principal Component Analysis (PCA) to construct the FEI for the 252 ethnic groups in our sample. The loadings from the first principal component, which are consistent with prior literature, are reported in Appendix Table A.2. This first component alone accounts for approximately 20% of the common variance across the 10 selected variables. We normalize the resulting PCA scores to range from 0 to 1, with higher values indicating greater female empowerment. The median FEI in our sample is 0.77. Based on this, we create a binary indicator that classifies ethnic groups as having either low or high female empowerment, depending on whether their FEI falls

below or above the median.

Figure 7a presents the trend in IPV incidence before and after motherhood across societies with different levels of female empowerment, as measured by the FEI. The figure displays event study estimates separately for ethnic groups with below-median FEI (in gray) and above-median FEI (in black). In the immediate aftermath of the first childbirth, both groups exhibit similar increases in IPV. However, starting around year 10, the estimates for low-FEI groups stabilize at just over 10 percentage points. In contrast, among high-FEI groups, IPV continues to rise steadily—exceeding 20 percentage points after year 10 and reaching approximately 30 percentage points after 25 years—more than double the long-term increase observed in low-FEI groups.

This heterogeneity analysis suggests that deep-rooted gender norms shape the incidence of IPV following motherhood. Crucially, the observed differences across societies align with the third prediction of our theoretical framework: IPV increases more sharply in contexts where women have greater outside opportunities. This finding may appear counterintuitive, as one might expect IPV to be more prevalent in low-empowerment settings characterized by entrenched gender hierarchies. Instead, the evidence is consistent with a backlash effect, whereby fathers who place relatively less importance on child quality respond to women's increased access to economic opportunities by using violence toredirect their partners' efforts toward childcare.

(a) Female Empowerment Index



(b) Local political accountability

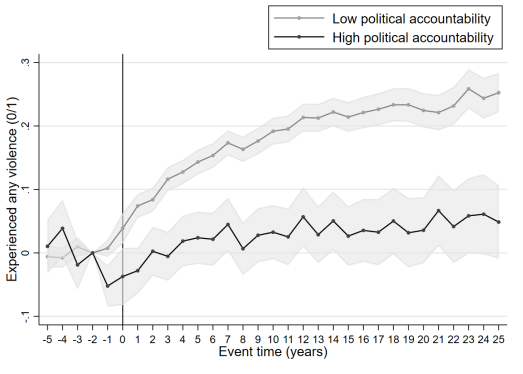


Figure 7: Heterogeneity Analysis by Ethnic Group's Characteristics

Note: Event-study estimates of the motherhood effect on IPV, corresponding to coefficients α in equation (4), by (a) ancestral female empowerment and (b) local political accountability. Groups are defined using historical measures from the Ethnographic Atlas by Murdock 1967. Shaded areas denote 95% confidence intervals.

4.7 Social acceptance of IPV based on Afrobarometer

To examine whether, as predicted by our model, the social acceptability of IPV moderates its incidence after motherhood (H4), we construct an ethnic-level measure of the social acceptance of IPV using data from Afrobarometer Round 9.[4] Social acceptance here refers to the degree of community disapproval and sanction associated with perpetrating violence against a partner. We argue that greater normative acceptance of IPV reduces reputational or relational risks for perpetrators, as synthesized by the parameter δ in our model. We capture this construct using four questions from the Afrobarometer that gauge attitudes toward and perceptions of IPV: whether a husband is justified in using physical discipline against his wife (Q52B), the perceived commonness of violence against women (Q53A), and the expected community and police responses to a report of gender-based

[4]The Afrobarometer is a pan-African, nationally representative public attitude survey that provides critical data on social norms, including perceptions and acceptance of gender-based violence. Afrobarometer Round 9 was conducted between 2019 and 2021.

violence (Q53B, Q53C).

For each ethnic group represented in the Afrobarometer, we build an index based on the four previous questions. The composite index is constructed via Principal Component Analysis (PCA) applied to the polychoric correlation matrices of the four ordinal variables. This approach accounts for the Likert-scale nature of the survey items and derives a latent continuous measure of IPV acceptance.[5] The resulting index is constructed such that higher values indicate greater social acceptance of IPV—and thus a lower social cost for perpetrators—within that ethnic group.

This ethnic-level index is then merged with our DHS sample based on self-reported ethnicity. For the majority of cases (40.6% of the DHS sample), a direct match is possible using identical ethnic group names across the two datasets. When a direct match is not available, we utilize the ethnicity concordance table developed by Nunn and Wantchekon 2011, which links ethnicities in the Afrobarometer to those in the Ethnographic Atlas, enabling us to assign an index value to an additional 11.6% of respondents. In total, we successfully assign a social acceptance measure of IPV for 52.3% of the women in our DHS sample, providing a plausible proxy for the normative environment surrounding IPV within their ethnic community.

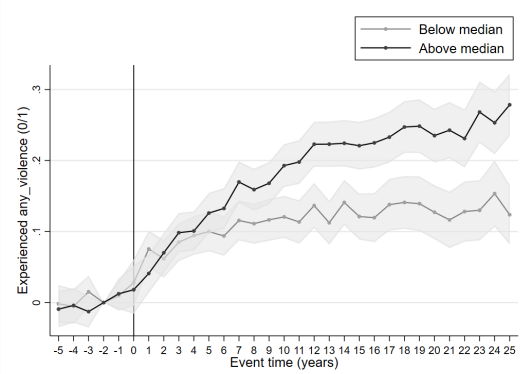
The results reported in Figure 8 reveal a sharp divergence in how motherhood affects different forms of IPV depending on the social acceptance of violence

[5]The Afrobarometer questions used to construct the social-cost index are ordinal in nature. That is, response categories reflect ordered degrees of agreement, likelihood, or justification, but the distances between adjacent categories are not assumed to be equal. For example, question Q53c asks how likely it is that a woman reporting gender-based violence would be criticized, harassed, or shamed, with responses coded as 1 = "Very unlikely," 2 = "Somewhat unlikely," 3 = "Somewhat likely," and 4 = "Very likely." While the ordering captures increasing perceived likelihood, the psychological distance between "Very unlikely" and "Somewhat unlikely" may differ from that between "Somewhat likely" and "Very likely." To account for this ordinality, we employ PCA based on polychoric correlations, which do not impose equal-interval assumptions and are appropriate for Likert-type survey items.

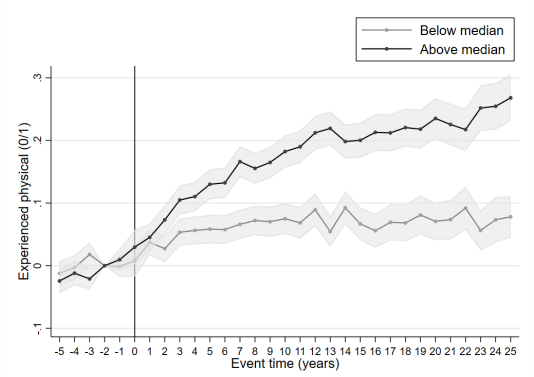
within an ethnic group. When we split ethnic groups by the median of the IPV acceptance index, we find that in ethnic groups where IPV is more socially accepted (black line reported as "above median"), physical violence against mothers increases dramatically following childbirth (Panel 8b). In contrast, the trajectory for emotional violence (Panel 8c) shows no statistically significant differential trend between high- and low-acceptance groups.

This pattern is consistent with H5, as in contexts where perpetrators face stronger social sanctions, highly observable forms of abuse are deterred, while less visible forms, such as emotional abuse, are comparatively less responsive. Our findings thus indicate that social sanctions constrain the form of violence, rather than the underlying motive of instrumental violence and time coercion.

(a) Any form of violence (0/1)



(b) Physical violence (0/1)



(c) Emotional violence (0/1)

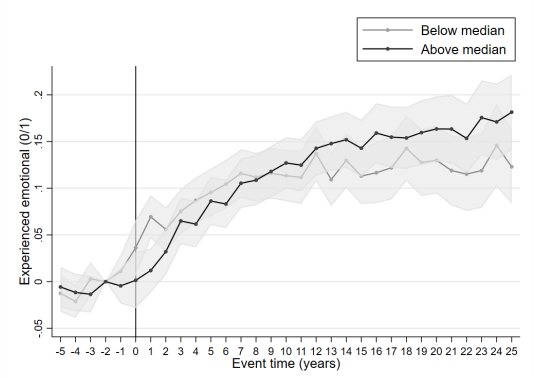


Figure 8: Social acceptance of IPV based on Afrobarometer

Note: Event-study estimates of the motherhood effect on IPV, corresponding to coefficients α in equation (4), by the social acceptance of IPV. The social acceptance index is constructed from Afrobarometer questions on the acceptance and perceived commonness of IPV, with higher values indicating greater acceptance (i.e., lower social cost). Panel (a) shows the effect on any form of IPV, panel (b) on physical violence, and panel (c) on emotional violence. Ethnic groups are split at the median of the social acceptance index. Shaded areas denote 95% confidence intervals.

4.8 Local political accountability

In this subsection, we examine how the rise in IPV following motherhood may vary with political institutions. We rely on previous work by Michalopoulos and Papaioannou 2013 who show that centralized societies favor a higher degree of political accountability, which according to Gennaioli and Rainer 2007 might trans-

late into larger provision of public services (e.g., education or health). One can imagine that in societies where the highest authority is the family or clan, and succession is hereditary, the incentives for social change are very low. On the contrary, more accountable political institutions might create an environment that accelerates the evolution of social norms. Within our theoretical framework, these mechanisms may reduce IPV by increasing the reputational costs associated with violent behavior and by encouraging greater paternal involvement in childrearing. In settings where fatherhood is a socially evaluated role, men may be more likely to engage in caregiving and avoid violence in order to present themselves as "good fathers" in the eyes of the community.

To operationalize variation in political institutions, we draw on variables `v033` and `v072` from the *Ethnographic Atlas*, which have been widely used in the previous literature studying how pre-colonial ethnic institutions contributed to shaping regional development within African countries (Gennaioli and Rainer 2007; Mayshar et al. 2022; Michalopoulos and Papaioannou 2013; Osafo-Kwaako and Robinson 2013). The first variable `v033` measures the hierarchical complexity of ethnic groups in 5 levels. We create a dummy variable that distinguishes between the lowest levels made of "no political authority beyond community" or "petty chiefdoms" compared to "large chiefdoms" or "states." The second variable `v072` captures the "rules of succession applying to the office of local headman." We again create a dummy variable that distinguishes between ethnic groups in which the local leader is selected through election or informal consensus, and those in which the position is obtained through hereditary succession. Our final objective is to identify ethnic groups in which local leadership legitimacy is contingent on public approval, while being accountable to centralized institutions –that is both bottom-up and top-down political accountability (O'Donnell 1998 refers to vertical vs. horizontal accountability). We consider this to be the highest degree of

political accountability that should favor public scrutiny and greater reputational costs for behaviors deemed socially or morally inappropriate. On the contrary, in hereditary systems with no higher political authority, private behavior may be less regulated by public accountability.

Figure 7b presents event study estimates of IPV around the time of childbirth, distinguishing between communities with high political accountability (black line) and those with low political accountability (gray line). The figure reveals a pronounced divergence in IPV trajectories following childbirth. In communities with high political accountability, IPV remains relatively stable and close to zero over time. By contrast, in low political accountability settings, IPV increases sharply after childbirth and continues to rise in subsequent years.

Our findings suggest that political institutions shapes not only public leadership structures but also private household dynamics. In particular, reputation-based governance systems appear to incentivize more positive paternal behavior. The observation that IPV remains flat in communities with high degree of political accountability is consistent with the idea that social accountability mechanisms can deter violent behavior. This divergence underscores the role of institutional design in shaping gendered norms within the household and highlights the broader potential of democratic accountability to promote prosocial behaviors—particularly those related to fatherhood and nonviolence.

5 Conclusions

This paper investigates the causal link between motherhood and Intimate Partner Violence (IPV) in Sub-Saharan Africa, combining a novel theoretical framework with a pseudo-event study using nationally representative DHS data. We develop

a coercive time-appropriation model model in which fathers may use violence to reallocate maternal time toward childcare. The model generates a set of testable predictions—including a spike in IPV following first birth, tapering effects with additional children, intensification when female outside options improve, and mitigation when paternal involvement is greater.

Empirical analysis confirms these predictions. IPV increases by approximately 30% in the five years following first childbirth, primarily through physical and emotional abuse. The rise in violence is more pronounced for women in ethnic groups with stronger female empowerment norms, suggesting a backlash effect when mothers have more attractive economic or social alternatives. In contrast, violence is significantly attenuated in communities where political institutions promote accountability and signal higher social valuation of engaged fatherhood.

From a policy perspective, our results suggest that criminalization alone is insufficient. Policymakers should also consider how interventions empowering women might inadvertently shift—rather than eliminate—coercive behaviors in some settings. Effective interventions should raise the opportunity cost of maternal time while promoting paternal involvement—such as community-based fatherhood initiatives, or conditional cash transfers linked to shared caregiving. Finally, empowering local governance structures to sanction IPV may simultaneously reduce abuse and increase men's reputational incentives to parent actively.

Taken together, our findings underscore the importance of viewing IPV not only as a legal or cultural issue, but also as an economic and institutional one. Designing policies that recognize the household-level trade-offs around caregiving—and strategically realign the incentives of all household members—may be key to reducing violence and improving gender equity across the life cycle.

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A Appendix tables

Table A.1: DHS Surveys Included in the Sample and Corresponding Phase

Country ISO3	Phase 4	Phase 5	Phase 6	Phase 7
AGO				2015-2016
BDI				2016-2017
BEN				2017-2018
BFA			2010	
CIV			2011-2012	
CMR	2004		2011	2018-2019
COD		2007	2013-2014	
COM			2012	
ETH				2016
GAB			2012	
GHA		2008		
KEN	2003	2008-2009	2014	
LBR		2006-2007		
MLI		2006	2012-2013	2018
MOZ			2011	
MWI	2004-2005	2010		2015-2016
NAM			2013	
NGA		2008	2013	2018
RWA	2005		2010-2011;2014-2015	
SEN				2019
SLE			2013	2019
TCD			2014-2015	
TGO			2013-2014	
TZA		2009-2010		2015-2016
UGA		2006	2011	2016
ZAF				2016
ZMB		2007	2013-2014	2018-2019
ZWE		2005-2006	2010-2011	2015

Note:

Notes: List of DHS surveys used in the analysis, indicating country coverage and survey phase. All included surveys contain the domestic violence module and fertility history variables used in the construction of event-time measures.

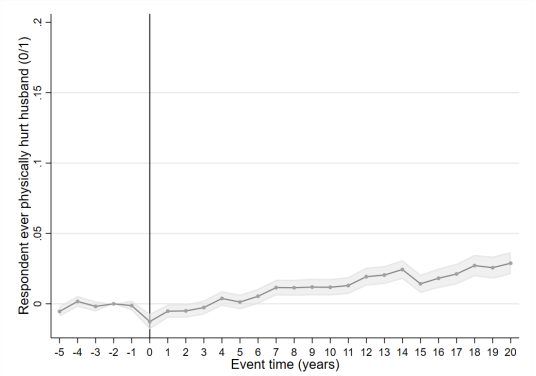
Table A.2: Female Empowerment Index - PCA Loadings

	Loadings
Matrilineal	.1668508
Polygyny	.1786288
Shifting agriculture	.3358585
Dependence on non-herding husb.	.3845014
Dependence on gathering	.0937713
Dependence on fishing	.3377078
Use of the plough	-.4261911
Dependence on pastoralism	-.5243638
Nuclear family	-.3144248
Brideprice	-.0362144

Note: Principal Component Analysis (PCA) loadings used to construct the Female Empowerment Index (FEI). Positive loadings indicate traits associated with female empowerment, while negative loadings indicate traits associated with male-dominant systems. The first component explains approximately 20% of total variance across the 10 ethnographic traits.

B Appendix figures

(a) Respondent ever Hurt Her Husband



(b) Respondent ever Hurt by Father or Father-in-law

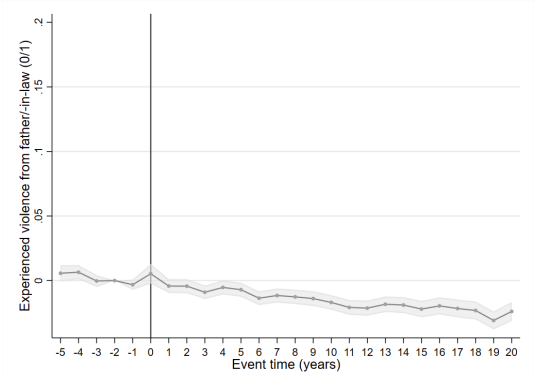


Figure A.1: Other Outcomes related to Household's Violence

Note: Event-study estimates of the effect of motherhood on different outcomes relative to two years before first childbirth, corresponding to coefficients α in equation (4). The figure explores alternative forms of household violence around motherhood. Panel (a) shows physical aggression by women toward their partners. Panel (b) shows violence from fathers or fathers-in-law. Shaded areas denote 95% confidence intervals.

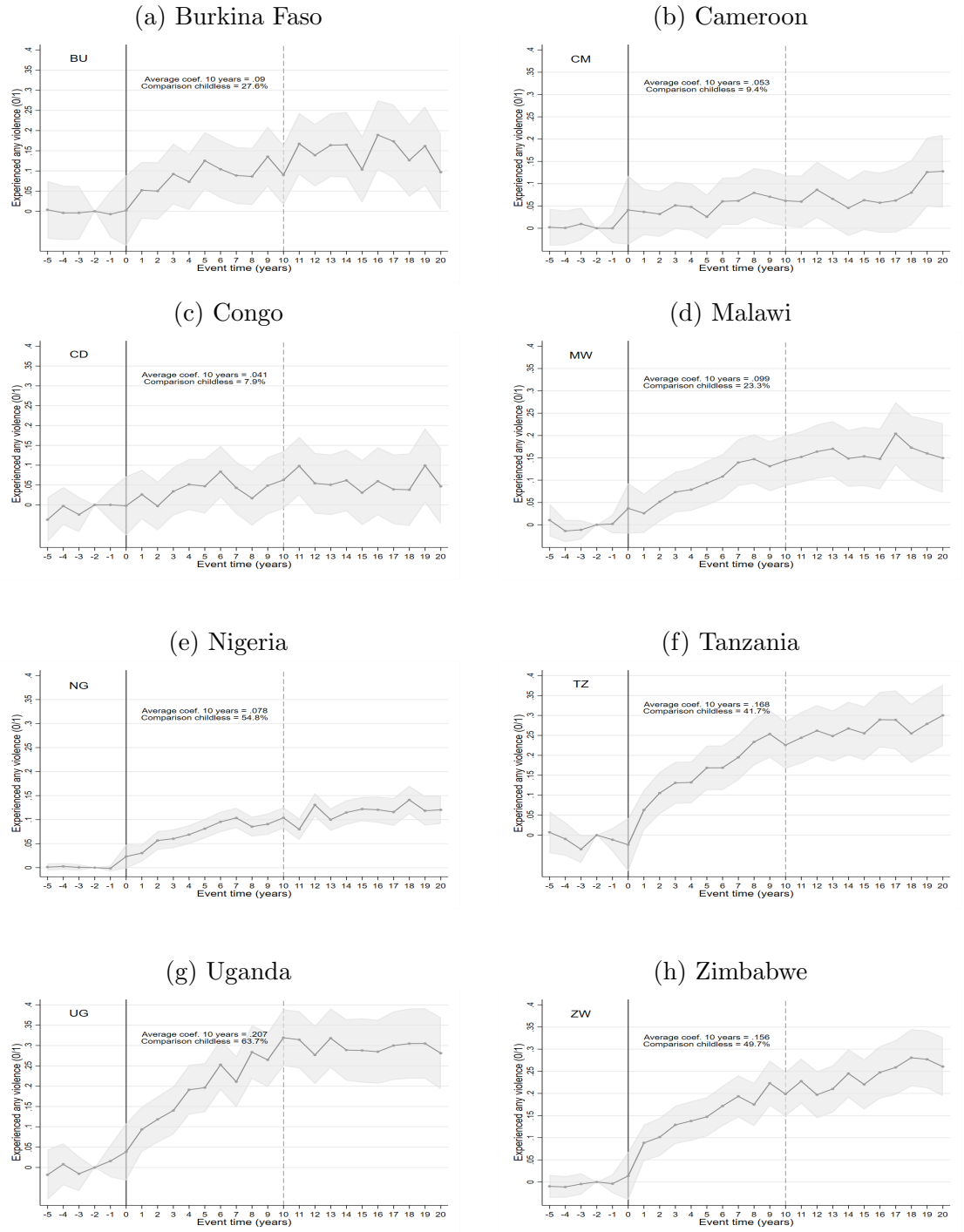


Figure A.2: Heterogeneity by Country

Note: Country-level estimates of the effect of motherhood on IPV for selected Sub-Saharan African countries. Estimates correspond to coefficients α in equation (4). Each panel also reports the estimated average change in IPV probability within ten years after first birth ("Average coef. 10 years"), as well as the relative change compared to childless women. Shaded areas denote 95% confidence intervals.

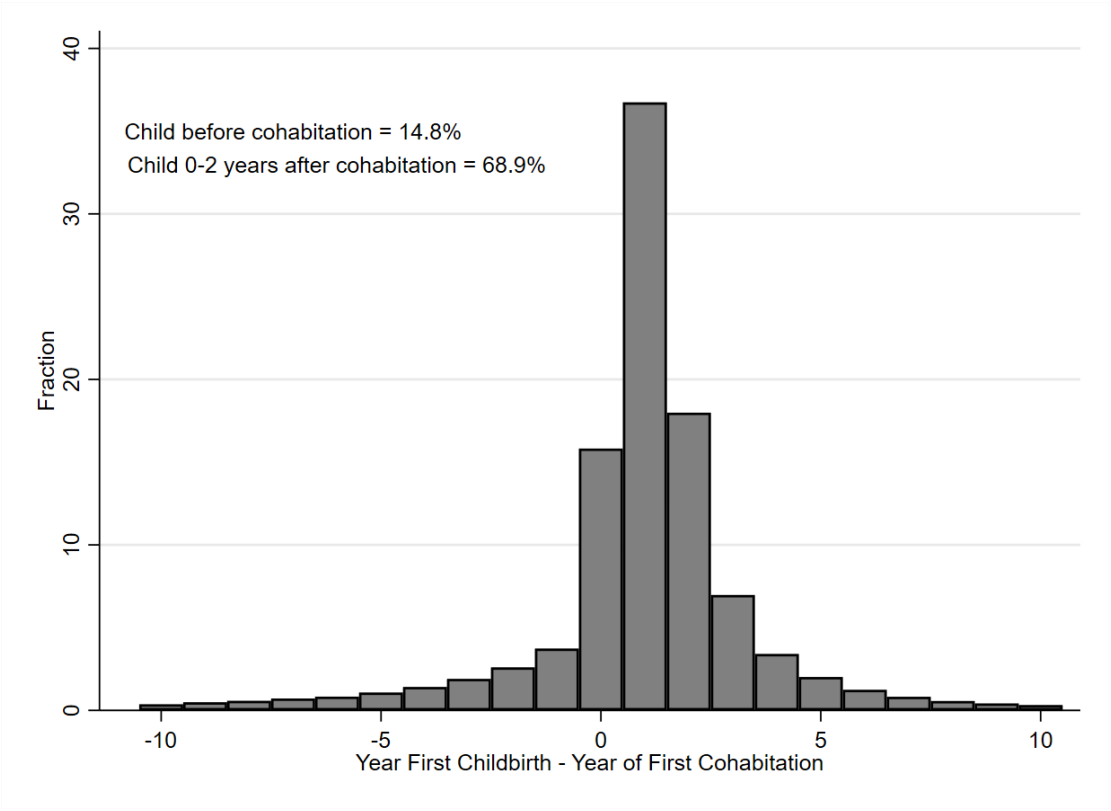


Figure A.3: Time between First Child and First Cohabitation

Note: Distribution of the time interval between first cohabitation and first childbirth. The figure shows the proportion of households by the number of years between these two events.

C Derivation of the First-Order Conditions

For a given scenario of violence $\bar{v} \in \{0, 1\}$, husband and wife choose time allocation and private consumption (t_w, t_h, q_w, q_h) to maximize a weighted sum of individual utilities:

$$\max_{q_w, q_h, t_w, t_h} \left(1 - \theta\left(\bar{v}, \frac{E_w w_w}{E_h w_h}\right)\right) U_w(Q, q_w, \bar{v}) + \theta\left(\bar{v}, \frac{E_w w_w}{E_h w_h}\right) U_h(Q, q_h, \bar{v})$$

subject to

$$Q = F(E_w t_w, E_h t_h),$$
$$q_w + q_h \leq \alpha(\bar{v}) E_w w_w (1 - t_w) + E_h w_h (1 - t_h).$$

First-Order Conditions

Let $\lambda(\bar{v})$ denote the Lagrange multiplier associated with the household budget constraint.

Private consumption. The first-order conditions with respect to private consumption are:

$$\frac{\partial \mathcal{L}}{\partial q_w}: \quad \left(1 - \theta\left(\bar{v}, \frac{E_w w_w}{E_h w_h}\right)\right) U_{f,q_w}(Q, q_w, \bar{v}) - \lambda(\bar{v}) = 0,$$
$$\frac{\partial \mathcal{L}}{\partial q_h}: \quad \theta\left(\bar{v}, \frac{E_w w_w}{E_h w_h}\right) U_{m,q_h}(Q, q_h, \bar{v}) - \lambda(\bar{v}) = 0.$$

These two conditions combined give:

$$\frac{U_{m,q_h}(Q, q_h, \bar{v})}{U_{f,q_w}(Q, q_w, \bar{v})} = \frac{1 - \theta\left(\bar{v}, \frac{E_w w_w}{E_h w_h}\right)}{\theta\left(\bar{v}, \frac{E_w w_w}{E_h w_h}\right)}.$$

At the optimum, the ratio of marginal utilities of private consumption equals the ratio of Pareto weights.

Time allocations. The first-order conditions with respect to time allocated to home production are

$$\frac{\partial \mathcal{L}}{\partial t_w}: \left[\left(1 - \theta\left(\bar{v}, \frac{E_w w_w}{E_h w_h}\right)\right) U_{f,Q}(Q, q_w, \bar{v}) + \theta\left(\bar{v}, \frac{E_w w_w}{E_h w_h}\right) U_{m,Q}(Q, q_h, \bar{v})\right] \times$$
$$F_1(E_w t_w, E_h t_h)\, E_w - \lambda(\bar{v})\, \alpha(\bar{v}) E_w w_w = 0,$$

$$\frac{\partial \mathcal{L}}{\partial t_h} : \left[\left(1 - \theta\left(\bar{v}, \frac{E_w w_w}{E_h w_h}\right)\right) U_{f,Q}(Q, q_w, \bar{v}) + \theta\left(\bar{v}, \frac{E_w w_w}{E_h w_h}\right) U_{m,Q}(Q, q_h, \bar{v}) \right] \times$$
$$F_2(E_w t_w, E_h t_h)\, E_h - \lambda(\bar{v})\, E_h w_h \quad = 0.$$

These two conditions combined give:

$$\text{MRTS}_{t_w,t_h} \equiv \frac{F_1(E_w t_w, E_h t_h)}{F_2(E_w t_w, E_h t_h)} = \frac{\alpha(\bar{v}) w_w}{w_h}.$$

At the optimum, parental time is allocated so that the marginal rate of technical substitution between parental time inputs equals their relative opportunity cost of time.

By inflicting violence, the perpetrator reduces the opportunity cost of female labor market work, shifting agent f 's time allocation toward home production.

This margin is specific to environments with home production with imperfect substitutability of mother and father time. In the absence of home production, violence affects allocations only through private consumption, at the cost of reduced household income (as well as disutility for the victim and net utility or disutility for the perpetrator). With home production, violence additionally allows the father to reallocate time away from home production and toward market work, while shifting mother's time toward home production. This preserves the father's labor income and increases his private consumption through the bargaining channel.

Two remarks follow. First, in the absence of a productivity cost of violence ($\alpha(\bar{v}) = 1$), the optimal time allocation is determined solely by the technology of home production and relative wages. Second, asymmetry in the productivity cost of violence across activities is key for time allocation to respond to violence, as if the productivity cost of violence were identical in home production and in the labor market, the effects would cancel out.