Foreign Aid and Intimate Partner Violence: Evidence from Ethiopia *

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Abstract

This paper investigates the impact of foreign aid on intimate partner violence (IPV) in Ethiopia, using geocoded data on foreign aid projects from 1995 to 2014. These projects are matched geographically with survey data from the Demographic and Health Surveys (DHS). Adopting a difference-in-differences approach, which leverages spatial and temporal variations between DHS interviews and the implementation of aid, we find that foreign aid contributes to a reduction in IPV. Women exposed to foreign aid projects show a decreased tendency to justify marital violence. Furthermore, our research indicates that foreign aid significantly improves women's education and enhances their access to information, especially through television. These results underscore the role of foreign aid as a crucial mechanism for disseminating information, empowering women with the knowledge needed to change perceptions and attitudes towards gender norms, and thereby reducing the justification of marital violence.

Keywords: IPV, Foreign aid, Women, Ethiopia

JEL Codes: N33; O30; Z12

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1 Introduction

Intimate partner violence (IPV) represents a significant public health issue with profound social, economic, and health implications. If unresolved, IPV can lead to substantial economic costs for governments, communities, and individuals (Peterson et al., 2018). Women who experience or have experienced IPV often face negative health outcomes, including an increased risk of depression, injuries, post-traumatic stress disorder, suicidal behavior, HIV infections, and adverse pregnancy outcomes (Campbell, 2002; Devries et al., 2013; Kafka et al., 2021). The World Health Organization (WHO) estimates that 30% of women worldwide have experienced IPV at least once in their lifetime. The incidence is highest in East and Sub-Saharan Africa(WHO, 2021), with Sub-Saharan Africa reporting the highest numbers at 36%, exceeding the global rate of 30% (Tessema et al., 2023). In response, UN Women advocates for long-term, sustainable investments aimed at effectively preventing violence against women and girls.

Recent studies in the medical field explored the incidence of IPV in Sub-Saharan Africa and its determinants (Shamu et al., 2016; Decker et al., 2014). Jewkes et al. (2003) highlight the normalization of violence within societies as a primary risk factor for IPV. Moreover, Selin et al. (2019) uncover a link between IPV and economic vulnerability, noting that victims often face increased concerns about food insecurity and are more likely to borrow money outside the household. These studies also point to lower gender equitable norms as critical factors contributing to IPV (Selin et al., 2019).

These findings underscore that financial constraints and food insecurity amplify the risk of IPV within households. Thus, examining programs such as cash transfers and foreign aid in relation to IPV is crucial, especially in regions marked by economic vulnerabilities. Although existing research has thoroughly investigated the impact of cash transfers on IPV, demonstrating a reduction in IPV incidence by 5 to 11 percentage points (for example, Buller et al. (2018), Heath et al. (2020)), a noticeable gap persists in the literature regarding the influence of foreign aid on IPV in African contexts, which has only recently begun to be addressed. For example, Berlin et al. (2023) examine the impact of aggregate foreign aid on female empowerment in Malawi, showing that gender-targeted foreign aid has a small positive impact on female empowerment.

This paper aims to bridge this gap by examining the impact of foreign aid — defined as "the transfer of state resources through loans, grants, or provision of goods, from more developed to less developed countries, for development or emergency relief purposes"

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(Oxford Dictionary of the Social Sciences, 2002) — on the acceptance of IPV among women.

We focus on understanding the acceptance of IPV rather than merely the frequency of IPV incidents, for a clear reason. In Sub-Saharan Africa, foreign aid initiatives aim to enhance social and economic infrastructures and services, with a particular emphasis on improving education inclusivity (OECD, 2018; UN Sustainable Development Goal 4).[1] Existing theoretical constructs within IPV literature suggest that higher levels of female education could potentially decrease IPV incidents by providing women with better employment prospects and financial independence, thereby empowering them to exit abusive relationships (Aizer, 2010). However, entrenched patriarchal norms and limited legal recourse for divorce in many developing nations, including those in Sub-Saharan Africa, often limit women's ability to seek practical alternatives to abusive relationships, despite their educational achievements (Davis and Taylor, 1997). In some cases, an increase in educational attainment may even provoke backlash from male counterparts, leading to increased instances of IPV (Bhalotra et al., 2021). Nevertheless, education remains a crucial factor in reshaping attitudes toward IPV acceptance, especially when paired with initiatives aimed at challenging traditional gender norms (More et al., 2017). Given the significant emphasis of foreign aid on education, female empowerment, and gender equality promotion (Women, 2015), it is vital to explore how these aid efforts impact women's acceptance of IPV in Sub-Saharan Africa.

Firstly, foreign aid can empower women through education, challenging traditional gender norms and reducing their acceptance of IPV (Buller et al., 2018; More et al., 2017).

Secondly, foreign aid often improves access to information through infrastructure enhancements (OECD, 2018). Exposure to sources like cable TV or urban lifestyles can acquaint rural households with more egalitarian values and empowered female role models, potentially reducing the acceptance of domestic violence (La Ferrara, 2016; Jensen and Oster, 2009).

To assess the impact of foreign aid on women's acceptance of IPV, we focus on Ethiopia. Ethiopia presents a unique case study because it (i) incurs dramatic costs due to IPV, estimated to be 1.2% of its GDP (UN Women, 2022), and (ii) receives the highest volume of net official development assistance aimed at Sub-Saharan Africa

[1] See `https://www.oecd.org/dac/financing-sustainable-development/` and `https://sdgs.un.org/goals/goal4` respectively.

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(OECD, 2018).

The paper uses georeferenced data on the sub-national allocation of foreign aid projects in Ethiopia for the years 1995 to 2014, geographically matched with survey data for over 50,000 Ethiopian women who were part of the Demographic Health Survey (DHS) for the rounds 2000, 2005, 2011, and 2016. By leveraging spatial and time variation in the data and using a Difference-in-Differences approach, we find that exposure to foreign aid reduces women's acceptance of IPV by 12 percentage points.

The paper offers new insights into the literature on the impact of external factors, such as cash transfers, on IPV by exploring the role of foreign aid. Additionally, it enriches the growing body of literature that investigates the effects of foreign aid on economic development through a highly disaggregated analysis (Adera, 2023; Blair et al., 2022; Iacoella et al., 2021; Isaksson and Durevall, 2023; Martorano et al., 2020; Dreher et al., 2019; Bai et al., 2022; Isaksson and Kotsadam, 2018).

The rest of this paper is organized as follows: Section 2 describes the data. Section 3 presents the identification strategy. Section 4 discusses the empirical results. Section 5 concludes.

2 Data

Our analysis is based on geographically matching data on aid projects in Ethiopia over the period 1995–2014, collected by AidData from the World Bank, with survey data from more than 50,000 women obtained from the Demographic and Health Survey (DHS). The relevant survey data for Ethiopia from the DHS are available for the years 2000, 2005, 2011, and 2016.

The aid project data originates from AidData's World Bank Geocoded Research Release, Version 1.4.2 (AidData, 2017). We primarily focus on World Bank aid due to their routine practice of geocoding all their projects. Figure 1 visually illustrates the geographical distribution of foreign aid projects for each year.

The Demographic and Health Survey (DHS) is a nationally representative household survey conducted in developing countries, including Ethiopia. This survey includes a standardized module, initiated in the late 1990s, that explores respondents' attitudes toward domestic violence. Known as the domestic violence module (Measure DHS, 2014), it queries married women aged 15 to 49 about their views on the justifiability of experiencing violence under various circumstances. For Ethiopia, data from this module

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are available for the 2000, 2005, 2011, and 2016 DHS rounds.

To create a comprehensive dataset, we compiled a pooled dataset from all available DHS rounds, incorporating data on attitudes toward wife-beating and the GPS coordinates of each surveyed cluster. This dataset includes information on over 50,000 women aged 15-49, spanning the years 2000-2016, and residing across 2,256 DHS survey clusters. A DHS cluster may encompass one or several geographically proximate villages or an urban neighborhood. Geolocation of each DHS cluster facilitates precise identification of the locations where the interviews with women were conducted. Figure 1 also visually presents the geographical distribution of clusters for each survey year.

Intimate Partner Violence (IPV) We measure intimate partner violence (IPV) as justification of wife beating, as in Alesina et al. (2021), La Ferrara (2016), and Jensen and Oster (2009). The reasons for this are straightforward.

Firstly, survivors of IPV often face stigma if they don't fit the societal image of "ideal victims", which includes being weak, not responsible for the circumstances, and usually being harassed by an unknown offender, with the latter not applying to IPV victims (Christie, 1986). Stereotypes about IPV survivors often align with myths surrounding domestic violence, such as blaming the survivor, trivializing violence, justifying the perpetrator, and assuming IPV is solely physical (Doran and Hutchinson, 2017; Yamawaki et al., 2012). This stigma leads to feelings of blame, shame, and fear, with survivors often internalizing blame and fearing discrimination (Yamawaki et al., 2012). Discrimination against IPV survivors can hinder help-seeking behaviors. Moreover, adherence to sexist and patriarchal values contributes to public stigma, further reducing the likelihood that victims report IPV episodes (Bryant and Spencer, 2003). Therefore, measuring the experience of IPV in developing Sub-Saharan countries such as Ethiopia, where traditional patriarchal norms are entrenched, may lead to underestimation of the actual incidence of IPV. Conversely, acceptance of wife beating, although suffering from limitations, in particular susceptibility to reporting bias, is designed to capture women's status – one of the major determinants of IPV incidents – and attitudes towards IPV as best as possible and to be consistent with other major surveys (Jensen and Oster, 2009). This makes it a good measure to study the potential effect of foreign aid on IPV.

Secondly, entrenched patriarchal norms and limited legal options for divorce in many developing countries, particularly in Sub-Saharan Africa, restrict women's ability to leave abusive relationships (Davis and Taylor, 1997). In some cases, increased income or female

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empowerment may even escalate IPV instances due to backlash from male counterparts (Bhalotra et al., 2021). However, education paired with initiatives challenging gender norms can reshape attitudes toward accepting IPV (More et al., 2017). As foreign aid often targets developing gender egalitarian norms, focusing on the extent of women's justification of IPV rather than just incidents seems reasonable, especially in regions where traditional norms prevail.

We collect women's acceptance of wife beating from the women's module of the DHS. Married women aged 15 to 49 selected for the domestic violence module are asked a set of questions about domestic violence and its acceptance (Croft et al., 2018). These questions are aimed at measuring women's attitudes toward wife-beating and include the following: *a) "Beating justified if the wife goes out without telling the husband"; b)"Beating justified if the wife neglects the children"; c)"Beating is justified if the wife argues with the husband"; d) Beating is justified if the wife refuses to have sex with the husband"; e) "Beating justified if the wife burns the food".* For each of the above, the answer equals one if the responding woman agrees that a husband is justified in beating his wife.

For brevity, we refer to the above IPV-related battery of questions respectively as IPV_a, IPV_b, IPV_c, IPV_d, and IPV_e. The summary statistics on each of the IPV dummies are presented in Table A2. In 2000, wife-beating was considered to be most acceptable in cases where a woman may neglect the children (60.9%), and it is considered least acceptable in cases where she would refuse to have sex with her husband (46.6%). A similar pattern was observed in 2016 but with lower probabilities compared to those in 2000. To gain a comprehensive overview, we use as main dependent variable in our analyses a dummy variable, IPV, that identifies whether the interviewed woman agrees that a husband is justified in beating his wife in at least one of the five cases mentioned above. Table A2, under the IPV_{any} row, presents descriptive statistics for our outcome variable. In the DHS years 2000, 2005, 2011, and 2016 respectively, about 79.9%, 75.7%, 65.7%, and 55.7% of the women in the sample agreed that husbands are justified in beating their wives in at least one of the above five cases. In general, there is substantial acceptance of wife beating in Ethiopia with a declining trend over time.

Local aid projects The geocoded aid data on foreign aid projects is sourced from AidData (Tierney et al., 2011). AidData provides geolocated foreign aid projects, implemented between 1995 and 2014. The dataset was created using the Tracking Underre-

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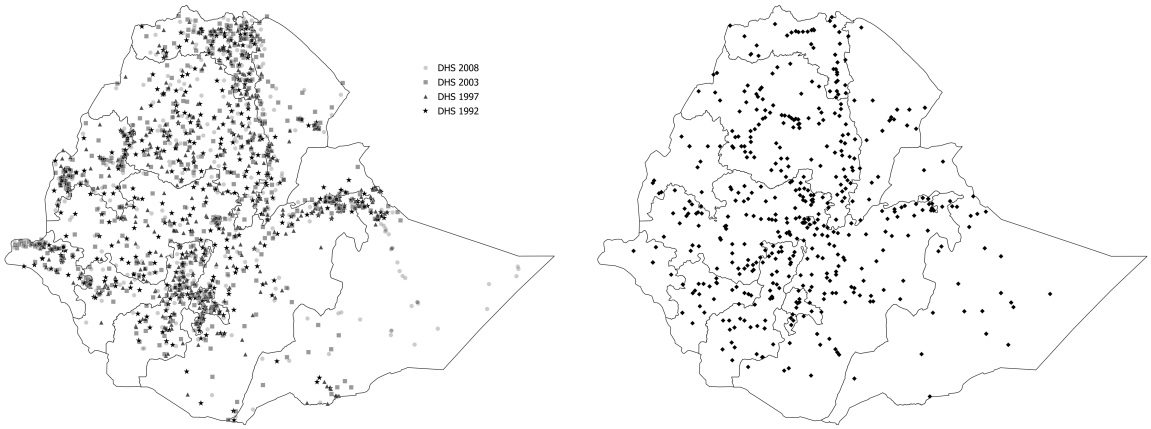
Figure 1: Location of DHS survey clusters and WB aid projects



Note: the left image displays the location of clusters in the four DHS survey rounds. The right image illustrates the location of aid projects funded by the World Bank.

ported Financial Flows (TUFF) methodology, leveraging open-source media to mitigate misreporting and underreporting of projects. Organized at the project location level, the dataset includes variables such as project location, commitment year, implementation start and end year, sector, and other relevant information.

In our later discussion in the identification strategy section, we highlight the importance of project implementation start and end dates for our analysis. Our primary focus centers on World Bank aid projects. Specifically, we utilize the World Bank foreign projects aid data, "World Bank Geocoded Research Release, Version 1.4.2", provided by AidData.[2] This dataset includes information on the start and end dates for 1,181 geocoded World Bank projects in Ethiopia. These projects are depicted in Figure 1.[3]

The World Bank Group (WBG) has strategically prioritized assisting Ethiopia in charting a more inclusive and sustainable growth trajectory, leveraging national programs to ensure quality services reach all corners of the country. Through initiatives aimed at enhancing productivity in both rural and urban areas, with a focus on fundamental education, market accessibility, and youth employment opportunities, the WBG is actively fostering structural and economic transformation. The projects aim at pro-

[2]See `https://www.aiddata.org/`.

[3]Note that although AidData encompasses data for Chinese projects, the implementation start and end years for these projects are often missing. In the case of Chinese aid to Ethiopia, only 24 projects provide information on project implementation start and end years. Therefore, Chinese projects are excluded from the scope of our analyses.

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viding essential services, ensuring food security, and addressing the specific needs of vulnerable populations, particularly internally displaced persons (IDPs) and women, including survivors of gender-based violence.[4]

A point to consider when using AidData is the precision at which the aid project locations are coded. The precision of aid project locations varies, with categories ranging from 1 for coordinates at an exact location to 8 when the location is estimated to be a seat of an administrative division or the national capital (Strandow et al., 2011). Existing research commonly utilizes projects where the geographical coordinates precisely match the location (precision code 1) or are within a known radius of 25 km from the reported coordinates (precision code 2). There are 728 World Bank aid projects with such precision in Ethiopia. We show in the analyses that using either the full set of 1,181 projects or the subset of 728 World Bank projects barely alters the main results.

Finally, it is important to mention that aid data provides information on aid projects classified by sector. Specifically, "AidData's sector coding scheme" offers a classification of projects into different sectors (e.g., education, health, infrastructure, or water supply).[5] This classification enables a better understanding of whether there is a heterogeneous effect depending on the sector to which aid is allocated. We will leverage this information when discussing the mechanisms through which aid can influences IPV acceptance.

2.1 Matching projects to DHS

As illustrated in Figure 1, both the DHS and AidData datasets include geographic coordinates. We link foreign aid projects data to local survey respondents in the DHS survey by using the point coordinates provided in AidData. To geolocate the DHS survey respondents, we follow the methodologies outlined in Isaksson and Kotsadam (2018) and Isaksson (2020). The coordinates of the surveyed DHS clusters, comprising one or several geographically proximate villages or a neighborhood in an urban area, are employed to associate women's households with aid project sites.

In the matched sample, we calculate the distance (in kilometers) from each woman's household cluster to the nearest aid project location. Figure A.1 illustrates that women

[4]See `https://www.worldbank.org/en/country/ethiopia/overview`

[5]The total number of projects amounts to 1,181. These projects are classified according to their nature. To explore the effects of projects with educational objectives and those targeting the communication sector, we construct two sub-samples comprising solely these classifications. Specifically, there are 132 projects focused on education and 78 projects within the communication domain. A comprehensive overview of the project classifications is presented in Table A3.

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from approximately 902 out of 2,256 DHS clusters (about forty percent) are located within a distance of 10 km from the closest aid project location. A closer examination of Figure A.1 reveals that the majority of DHS clusters to which households belong are located within a distance of 25 km to the nearest aid project location.

3 Empirical Strategy

The empirical strategy relies on exploiting the geographical variation in the sub-national location of foreign aid projects in Ethiopia. We identify treated women as those whose household is located in a DHS cluster within a distance of 10 km from the closest foreign aid project location.[6]

We estimate the following baseline specification:

$$IPV_{it} = \beta_1 * ongoing_{it} + \alpha_w + \delta_t + \mathbf{X'_{it}}\gamma + \epsilon_{it} \tag{1}$$

with i individual woman; t DHS round; IPV measure of IPV as defined in Section 2; *ongoing* dummy variable that takes on value 1 if the woman is treated; X'_{it} set of individual controls, namely women's household size, age, literacy, ethnicity, religion, and years of education. Such controls are included because the effect of foreign aid on women's attitudes towards IPV is likely to be influenced by women's idiosyncratic characteristics such as level of empowerment and alignment with patriarchal norms – measured through women's education, literacy, ethnicity and religion –, resource constraints and allocation within the household – measured with household size – and age (Alesina et al., 2021; Selin et al., 2019; Jewkes et al., 2003).

Standard errors are clustered at the DHS cluster level to account for the correlation of the error terms at the cluster level.

To control for location-specific variations in IPV levels around each aid project location, we introduce spatial fixed effects, α_w, and year fixed effects, δ_t. The spatial fixed effects are based on Ethiopia's administrative units, known as Woredas (ADM 3). A woreda is the smallest geographic region in the Ethiopian context, consisting of villages (known as Kebeles in Ethiopia). This approach mirrors the use of regional fixed effects by Isaksson and Kotsadam (2018), where they employed 352 sub-national region dum-

[6]Using the 10 km threshold results in 40% of women in our sample being treated. Figure A6 shows the estimates considering different cut-offs for robustness.

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mies for the entire African continent. Our study benefits from a larger count of these geographic units (695 woredas) for Ethiopia. The average woreda size is 8,166 square km. This size is comparable, for instance, to a 50 km radius circle, which encompasses an area of about 7,850 square km, as used in Isaksson and Kotsadam (2018). The use of woreda is also close in size to the geographic fixed effects introduced by Berlin et al. (2023), each covering approximately 5,000 square km.

The causal interpretation of β_1 in equation 1 requires that the location of foreign aid projects does not correlate with local IPV levels. However, it is likely that foreign aid projects are not randomly located, but rather, they tend to be biased toward communities with more vulnerable populations[7] (Briggs, 2018), which are also likely to experience higher incidence of gender violence. Therefore, the assumption of exogeneity of foreign aid project locations does not hold. We address this identification challenge by implementing a spatial–temporal estimation strategy as in Isaksson and Kotsadam (2018). We exploit differences in timing and sub-national location of the DHS rounds and aid projects. By using the aid project start date and DHS interview date, we differentiate between DHS clusters located in areas that, at the time the DHS round took place, were exposed to aid projects, and those in areas that were not yet exposed but were targeted for future projects. Our estimation strategy relies on comparing IPV between two groups of women: those residing near a site where an aid project is already implemented as of the DHS interview date and those residing near a site where an aid project is planned to be implemented in the future, but implementation has not yet started.

In sum, women in our sample may fall into one of three scenarios: they may live in a cluster that is close to a location where (i) a project is ongoing, (ii) a project is planned to start in the future or (iii) no project exists.

Our identification strategy, thus, involves three groups of women: (i) those residing within 10 km from a location where at least one project is ongoing, (ii) those residing within 10 kilometers from a location where at least a project is scheduled to take place, but implementation has not yet started and who are not close to any ongoing project, and (iii) those residing more than 10 kilometers from any project site (serving as our omitted reference category in the regressions).

We can, thus, rewrite our baseline regression as:

[7]See `https://www.worldbank.org/en/country/ethiopia/overview`

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$$IPV_{it} = \beta_1 * ongoing_{it} + \beta_2 * future_{it} + \alpha_w + \delta_t + \mathbf{X'_{it}}\gamma + \epsilon_{it} \quad (2)$$

with IPV – measured as described in Section 2 – regressed on a dummy variable *ongoing* identifying whether woman i lives within 10 km of the location of an ongoing foreign aid project, and a dummy variable $future$ that identifies whether woman i resides within 10 km of the closest target location of a future foreign aid project. To control for variation in average IPV levels across time and space, the model includes spatial fixed effects α_w and year fixed effects δ_t. We also include a set of individual level controls X'_{it} to account for individual characteristics that may affect individual attitudes towards IPV. Our set of controls is women's household size, age, literacy, ethnicity, religion, and years of education. Standard errors are clustered at DHS cluster level to take into account the correlation of the error terms at cluster level. Further, Figure A6 shows estimates using Conley standard errors (Conley, 1999) to adjust for spatial correlation.

We estimate the difference between β_1 and β_2 in equation 2, providing a differences-in-difference type of estimates. In particular, β_1 represents the impact of the aid project plus any effect from selection into project locations. β_2 gives any effect that arises from selection into project locations. Thus, the difference, $\beta_1 - \beta_2$, provides the impact of aid after the selection effects are isolated. The identification assumption is that, in the absence of an ongoing project, the difference $\beta_1 - \beta_2$ should be indistinguishable from zero.

4 Results

4.1 Baseline OLS Estimates

Table 1 presents the correlation between foreign aid and IPV, estimated with equation 1. The preferred baseline estimate is reported in column 5 of Table 1.

Column 5 estimates the effect of foreign aid on IPV with a cut-off of 10 km, including individual level controls, year and spatial fixed effects. Point estimates show that, on average, being exposed to foreign aid is negatively and significantly correlated with women's acceptance of IPV. This relationship remains robust even when including survey year fixed effects, spatial fixed effects and individual level controls.

This first result suggests that foreign aids, especially when targeted at women and

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aimed at promoting inclusive and sustainable development may be effective in challenging traditional patriarchal gender norms, thereby reducing women's acceptance of IPV (Buller et al., 2018; More et al., 2017; Women, 2015).

However, as outlined in the above discussion, simply interpreting the coefficient as indicative of the impact of foreign aid on IPV acceptance assumes that the selection of project locations is unrelated to existing levels of local IPV levels, a premise we find unlikely. We, thus, compare in the section below IPV acceptance in clusters close to sites where foreign aid projects were ongoing at the time of the survey with those in clusters close to locations where foreign aid projects were planned but had not yet been implemented at the time of the interview.

Table 1: OLS estimates

	(1)	(2)	(3)	(4)	(5)
VARIABLES	10 km cutoff	10 km cutoff	10 km cutoff	10 km cutoff	10 km cutoff
ongoing10	-0.278***	-0.278***	-0.139***	-0.103***	-0.107***
	(0.004)	(0.012)	(0.010)	(0.011)	(0.011)
Observations	58,980	58,980	56,456	56,454	56,454
R-squared	0.071	0.071	0.168	0.221	0.222
Clustered S.E.	x	✓	✓	✓	✓
Controls	x	x	✓	✓	✓
Spatial F.E.	x	x	x	✓	✓
Year F.E.	x	x	x	x	✓

Notes: This table presents the results of OLS estimates. The dependent variable in columns (1-5) is our measure of IPV. *Ongoing10* is a dummy identifying whether woman i lives within 10 km of the location of an ongoing foreign aid project. Controls include women's household size, age, literacy, ethnicity, religion, and years of education. Column (5) also includes year and Woredas spatial fixed effects. Standard errors (in parentheses) are clustered at the DHS cluster level. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

4.2 Difference-in-difference estimates

Table 2 provides the estimates from equation 2, using the 10 km cut-off. Our preferred specification is presented in column 5, including individual level controls, spatial and year fixed effects. The coefficient of "ongoing", is slightly lower than the one reported in Table 1. As in the baseline case, women residing within 10 km of locations where aid projects are currently being implemented are less likely to accept IPV than otherwise equal women. Specifically, women residing within 10 km of an ongoing project site

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are 7.5 percentage points less likely to justify a husband beating his wife as acceptable compared to women living beyond this 10 km radius of a similar project site.

However, looking at the coefficient of $future$, it comes out as clear that foreign aid projects are dependent on pre-existing levels of IPV acceptance. The higher IPV acceptance, the more likely it is that the location is targeted for future foreign aid projects. More precisely, women residing within 10 km of a planned project location are 4.4 percentage points more likely to justify a husband beating his wife as acceptable compared to otherwise equal women. Therefore, it is crucial to rely on estimates for $\beta_1 - \beta_2$ which are reported at the bottom of Table 2 to account for the likely endogenous placement of projects. This estimate compares the acceptances with IPV in areas close to sites where an aid project was being implemented at the time of the DHS survey (ongoing) with those in areas close to sites where a project is planned but not yet implemented at the time of the DHS interview (future).

The Difference-in-Differences estimates for $\beta_1 - \beta_2$ and associated test results confirm our baseline results. Women residing within 10 km of ongoing foreign aid projects are 11.9 percentage points less likely to justify a husband beating his wife as acceptable, compared to women residing within 10 km of planned future projects. The parameter differences are significant both statistically and in magnitude (mean IPV acceptance 69 percentage points, as shown in Table A1).

4.3 Robustness

Our results are robust to different robustness tests. Table A6 presents the results of estimations using different geographical cut-offs (10, 25, 50, and 75 kilometers). Results remain strong and significant at the 1% until a threshold of 25 km (a 12 percentage points reduction in IPV acceptance), while the estimates are barely significant as we move further (at 50 km and 75 km).

Table A7 reports estimates for each of the four measures of IPV described in Section 2. Results are close to the ones reported in Table 2. Results are also robust to using more precise locations of aid projects.

The precision of aid project locations varies ranging from category 1 for coordinates to an exact location to 8 when the location is estimated to be a seat of an administrative division or the national capital (Strandow et al., 2011). Consistent with previous research (e.g., Isaksson and Kotsadam, 2018), we narrow our focus to projects where the

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Table 2: Difference-in-differences estimates

VARIABLES	(1) 10 km cutoff	(2) 10 km cutoff	(3) 10 km cutoff	(4) 10 km cutoff	(5) 10 km cutoff
ongoing10	-0.295***	-0.295***	-0.142***	-0.070***	-0.075***
	(0.004)	(0.012)	(0.010)	(0.015)	(0.015)
future10	-0.063***	-0.063***	-0.007	0.046***	0.044***
	(0.005)	(0.011)	(0.009)	(0.013)	(0.013)
Difference in difference	-0.233	-0.233	-0.134	-0.116	-0.119
F test: ongoing10-future10=0	1872	246	140.4	93.46	101.5
Observations	58,980	58,980	56,456	56,454	56,454
R-squared	0.074	0.074	0.168	0.222	0.223
Clustered S.E.	x	✓	✓	✓	✓
Controls	x	x	✓	✓	✓
Spatial F.E.	x	x	x	✓	✓
Year F.E.	x	x	x	x	✓
p-value	0.000	0.000	0.000	0.000	0.000

Notes: This table presents the results of difference-in-differences estimates. The dependent variable in columns (1-5) is our measure of IPV. *Ongoing10* is a dummy identifying whether woman i lives within 10 km of the location of an ongoing foreign aid project, while *future 10* is a dummy variable that identifies whether woman i resides within 10 km of the closest target location of a future foreign aid project. Controls include women's household size, age, literacy, ethnicity, religion, and years of education. Column (5) also includes year and Woredas spatial fixed effects. Standard errors (in parentheses) are clustered at the DHS cluster level. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

geographic coordinates precisely match the location (precision code 1) or are known to be within 25 km of the reported coordinates (precision code 2). Put differently, we exclude projects officially assigned to an entire administrative district or a higher administrative level. The results, after restricting the sample to precision 1 and 2, are presented in Table A5, and the DID estimate aligns with the benchmark estimate shown in Table 2.

Unobserved factors may exist that vary within geographic areas, potentially biasing comparability among pre-, ongoing-, and post-treatment groups with the no-treatment group. To check if this poses a threat to the results, we employ geographical matching as proposed by Isaksson and Durevall (2023). This method entails excluding all respondents in enumeration areas located more than 75 km away from aid project sites. The aim is to address unobserved factors that may vary within geographic areas, enhancing comparability among pre-, ongoing-, and post-treatment groups with the no-treatment group. As depicted in Figure 2 under the 'Geo-matched' label, the estimate remains robust to this form of geographical matching.

Figure 2, under the 'Conley standard errors' label, reports results with Conley standard errors. This specification allows for spatially correlated standard errors within a radius of 100 km around each observation. Table A8 reports results for radii of 25, 50,

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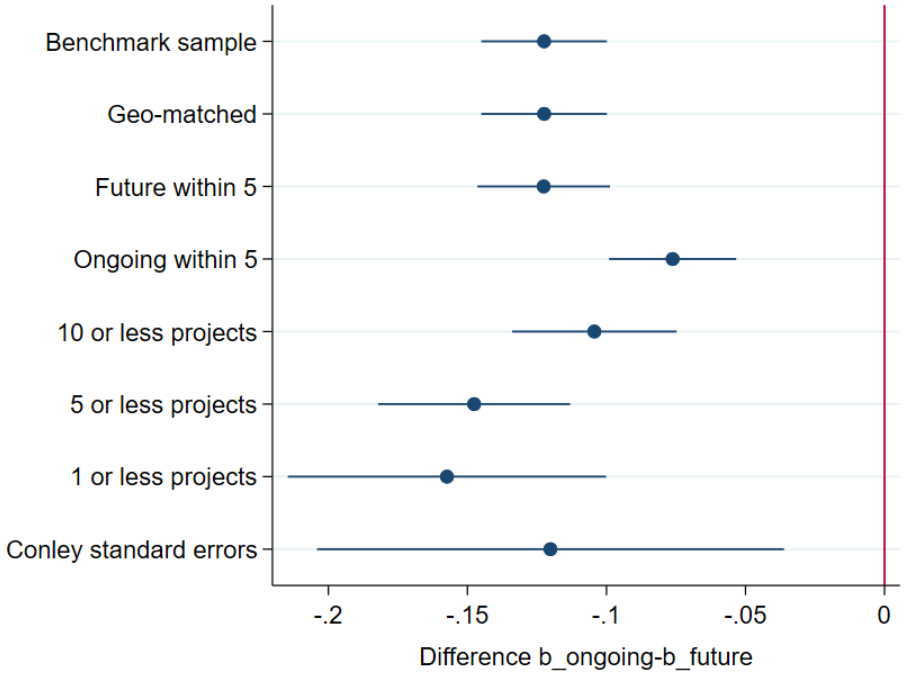
75, 100 kilometers. Results remain unaffected. [8]

The dummy *future* identifies women living within 10 km of a site where a project will be implemented at a later date, without specifying how long before the survey date project implementation may commence. A potential concern is that circumstances in planned project areas may change between the survey date and project start, affecting the comparability of the treatment and pre-treatment groups. A similar concern applies to ongoing projects, as not all projects are ongoing for the same duration, raising potential comparability issues. To address this potential bias, we replicate the benchmark results by limiting the pre-treatment group to women within 10 km of sites where projects will start within a maximum of five years of the interview date. The results of this analysis are presented in 2, under the 'Future within 5' label. We repeated the same exercise and reported it in Figure 2, under the 'Ongoing within 5' label, where we run estimations imposing a five-year time restriction on ongoing projects. In both cases, the main results remain robust.

Figure 2: Sensitivity estimations



Notes: Estimated effect with 95 % confidence intervals. The dependent variable is IPV_{any}. Treatment is based on a 10 km cut-off around project sites. The specification is equivalent to column (5) of Table 2

[8] We compute Conley standard errors using the *acreg* command for Stata by Colella et al. (2023).

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The dummies *ongoing* and $future$ do not account for the number of projects within the specified cutoff. As such, a bias may arise from comparing women receiving several aid projects with those receiving fewer projects or it is worrisome that we are simply capturing the effect of having many projects in the area. To explore if this factor influences our results, we replicate the main results where we trim the sample based on the number of projects within a 10 km cutoff distance. The results of this exercise are reported in Figure 2 under the '10 or less projects', '5 or less projects', and '1 or less projects' labels. Reassuringly, it does not seem that being located in areas traditionally attracting a lot of aid drives our results. Specifically, restricting the sample to include only respondents with at most ten or five projects within the cutoff, thus excluding the most blatant 'aid-darling' areas, does not alter the results. Even if we narrow the sample to include only respondents in areas with at most one ongoing, or future project within the 10 km cutoff, the main results are unchanged.

Finally, we consider heterogeneity by ethnicity. Ethiopia is a multi-ethnic country, with each ethnic group boasting its own unique cultural heritage and historical background. In particular, historical differences in livelihoods—farming for some and herding for others—lead to variations in societal norms and behaviors (Alesina et al., 2013; Michalopoulos et al., 2019). Thus, following McGavock (2021), Table A4 presents estimates by ethnic groups. Results suggest that women from ethnic groups with a history of plow use experience larger benefits from aid projects compared to women from ethnic groups with no historic plow use. Similarly, women from ethnicities whose ancestors derived a larger share of subsistence from agriculture experience larger benefits from aid projects compared to women from ethnic groups whose ancestors were predominantly pastoralists.

4.4 Potential mechanisms

World Bank foreign aid projects encompass a wide range of initiatives aimed at promoting economic development and reducing poverty. These projects can take various forms, including infrastructure development, education and healthcare programs, agricultural initiatives, governance and institutional reforms, environmental conservation efforts, and support for private sector development, among others. The projects aim at providing essential services, ensuring food security, and addressing the specific needs of vulnerable populations, particularly internally displaced persons (IDPs) and women, in-

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cluding survivors of gender-based violence[9]. Specifically regarding gender empowerment and addressing gender violence, World Bank foreign aid projects may include funding for programs and initiatives aimed at promoting gender equality in education and enhanced access to and the quality of telecommunications services. Within the scope of this paper, the World Bank is, thus, targeting – among the others – two sectors that are relevant to gender violence: communication infrastructures and education. As Alesina et al. (2021) show, tolerance to intimate partner violence (IPV) decreases as women's education increases. This suggests that educated families are likely to experience less stress, reducing the propensity for resorting to violence, or it may indicate a negative correlation between education and preferences for violence (Alesina et al., 2021). Moreover, investments in communication infrastructure, as highlighted by La Ferrara (2016), could lead to a reduction in IPV through increased access to information, especially via television.

Therefore, we expect foreign aid to affect IPV acceptance among women in two ways: fostering female education and increasing information access for women. Specifically, our hypotheses are:

Hypothesis 1: foreign aid targeting education will elevate women's educational attainment, thereby diminishing IPV acceptance.

Hypothesis 2: foreign aid aimed at enhancing communication infrastructure will bolster women's access to information, reducing IPV acceptance by expanding their knowledge base.

To empirically test these hypotheses, we capitalize on the purposes of aid projects. AidData provides such information. In particular, AidData provides information on projects specifically categorized under education purposes. We re-estimate the specification presented in column 5 of Table 2 by restricting the sample to projects with the purpose of enhancing (female) education. The results are presented in column 2 of Table 3. The estimated effect of foreign aid on IPV acceptance is higher in its magnitude compared to baseline estimates. Specifically, women exposed to an ongoing education aid project (residing within a 10 km distance) are 20.9 percentage points less likely to justify IPV compared to otherwise equal women. To supplement this result, column 4 of Table 3 reports estimates of the effect of foreign aid programs targeted to education on female education attained – measured in years of education completed. Foreign aid

[9]See `https://www.worldbank.org/en/country/ethiopia/overview`

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with education purposes significantly increases women's education. Our analyses thus not only confirm our *Hypothesis 1* but also contribute to corroborating existing findings in the literature. Foreign aid can reduce women's acceptance of IPV by increasing their level of education.

Table 3: Testing the mechanisms

VARIABLES	(1) Comm. projects	(2) Educ. Project	(3) Watching TV	(4) Woman's Educ.
ongoing10	-0.168***	-0.123**	0.195***	0.592***
	(0.045)	(0.049)	(0.043)	(0.265)
future10	0.046	0.087*	0.008	-0.485**
	(0.042)	(0.046)	(0.036)	(0.220)
Difference in difference	-0.214	-0.209	0.203	1.076
F test: ongoing10-future10=0	66.35	71.84	49.57	58.58
p-value	0.000	0.000	0.000	0.000
Observations	6,242	7,475	6,312	7,567
R-squared	0.286	0.283	0.443	0.770

Notes: This table presents the results of difference-in-differences estimates. The specification in columns (1) and (2) is equivalent to column (5) of Table 2, except that columns (1) and (3) and column (2) and (4) here, respectively, are restricted only to projects with communication and education purposes. The dependent variable in columns (1-2) is our measure of IPV. In column (3) the dependent is a binary variable that takes value 1 if the woman watches TV at least once a week and 0 otherwise, while in columm (4) the dependent variable is woman years of education. *Ongoing10* is a dummy identifying whether woman i lives within 10 km of the location of an ongoing foreign aid project, while *future 10* is a dummy variable that identifies whether woman i resides within 10 km of the closest target location of a future foreign aid project. Controls include women's household size, age, literacy, ethnicity, religion and years of education (except in column 4). Estimates also includes year and Woredas spatial fixed effects. Standard errors (in parentheses) are clustered at the DHS cluster level. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

We then narrow our focus to World Bank projects primarily designed for communication development, labeled as 'Radio, television and print media', and re-estimate the specification presented in column 5 of Table 2. Column 1 of Table 3 shows that women exposed to an ongoing communication aid project (residing within a 10 km distance) are 21.4 percentage points less likely to justify IPV compared to otherwise equal women. To see whether such projects aimed at improving communication and spread of information are actually effective on women, we extract information from a DHS question that queries the frequency of women's television watching, with response options including 'almost every day', 'at least once a week', 'less than once a week', or 'not at all'. Based on the responses to this question, we construct a binary variable, assigning a value of 1 if the woman watches TV at least once a week and 0 otherwise. Estimates of the effect of foreign aid projects targeted to communication infrastructure on women's probability

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of watching TV are reported in column 3 of Table 3. Women exposed to foreign aid targeted to communication infrastructure are 20 percentage points more likely to watch TV than otherwise equal women. Therefore, also our *Hypothesis 2* is empirically confirmed. Foreign aid can not only reduce women's acceptance of IPV by increasing their level of education, but also by increasing their access to information.

5 Conclusion

This paper investigates the impact of foreign aid on IPV in Ethiopia. By combining DHS data from four rounds, encompassing over 50,000 women, with information on foreign aid to Ethiopia from 1995 to 2014, we aim to identify the causal relationship through the spatio-temporal heterogeneity in treatment adoption.

Our findings provide evidence of the IPV reduction effect of foreign aid. Women who have been exposed to foreign aid projects show a decreased tendency to justify marital violence. Additionally, our research reveals that foreign aid substantially improves women's education and enhances their access to information, particularly through television. Our results highlight the importance of foreign aid as a mechanism for information dissemination, empowering women with the knowledge necessary to alter perceptions and attitudes towards gender norms, thereby diminishing the justification of marital violence.

The study reveals foreign aid's multifaceted role, extending beyond just financial support. It serves as a catalyst for positive change by addressing the economic factors and societal attitudes that contribute to IPV. These findings are crucial for policymakers and aid organizations, underscoring the importance of comprehensive strategies for developing and implementing interventions aimed at reducing intimate partner violence.

The research advocates for specific interventions targeting the socio-economic factors of IPV, highlighting foreign aid's role not merely as a financial asset but as an agent of societal change. This work lays the groundwork for future global policy initiatives against intimate partner violence, advocating for integrated strategies that combine economic empowerment with the spread of information.

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Online Appendix

A Data description

As discussed in the data section, we primarily use two datasets for our analysis. The first dataset originates from the Demographic and Health Survey conducted in Ethiopia between 1992 and 2008. The second dataset encompasses information on international aid projects funded by the World Bank. This section outlines the summary statistics for our dependent variables, project-related variables, and the controls implemented in our study.

The dependent variable in the baseline analysis concerns IPV_{Any}, i.e., a binary variable equal to one when the interviewee answers positively to any of the questions about IPV. These questions refer to the conditions under which the respondent justifies being beaten by her husband for the following reasons: a) going out without telling the husband; b) neglecting the children; c) arguing with the husband; d) refusing to have sex with the husband; e) burns the food. In Table A1, Panel A illustrates the main statistics for each question on IPV and our variable IPV_{Any}. Table A2 breaks down the summary statistics of these variables by year.

The empirical strategy outlines methods to distinguish between *ongoing* and *future* projects based on their start dates relative to the interview date. *Ongoing* projects have already started, whereas future projects are planned to begin afterwards. Panels B and C of Table A1 report the percentage of women in the sample living respectively within 10, 25, 50, and 75 kilometers of a location with an ongoing project and of a location that is targeted for future projects.

Finally, we incorporate controls for interviewee characteristics including age, household size, years of education, literacy, religion, and ethnicity. The summary statistics for these variables are presented in Panel D of Table A1.

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Table A1: Summary statistics

	VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
Panel A:						
Dependent Variables:	IPVa	59,562	0.472	0.499	0	1
	IPVb	59,618	0.528	0.499	0	1
	IPVc	59,439	0.468	0.499	0	1
	IPVd	58,232	0.388	0.487	0	1
	IPVe	59,642	0.457	0.498	0	1
	IPV_{Any}	59,402	0.690	0.462	0	1
Panel B:						
Ongoing aid projects:	ongoing10	60,183	0.271	0.444	0	1
	ongoing25	60,183	0.476	0.499	0	1
	ongoing50	60,183	0.643	0.479	0	1
	ongoing75	60,183	0.700	0.457	0	1
Panel C:						
Future aid projects:	future10	60,183	0.204	0.403	0	1
	future25	60,183	0.330	0.470	0	1
	future50	60,183	0.336	0.472	0	1
	future75	60,183	0.291	0.454	0	1
Panel D:						
Controls:	Age	60,183	27.93	9.369	15	49
	Household Size	60,183	5.688	2.539	1	22
	Education (Years)	60,183	3.005	4.300	0	22
	Religion					
	Catholic	516	0.86			
	Muslim	21,512	35.75			
	Orthodox	27,139	45.10			
	Protestant	9,865	16.39			
	Traditional	785	1.30			
	Other	355	0.59			
	Literacy					
	Able to read whole or parts of sentence	22,376	37.21			
	Cannot read at all	36,759	61.13			
	No card with required language	978	1.66			

Notes: See Table A2 for the description of the dependent variables by survey year.

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Table A2: Description of Dependent variables by survey year

	2000		2005		2011		2016	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Woman justifies beating if wife								
goes out without telling husband (IPV_a)	0.521	0.500	0.578	0.494	0.428	0.495	0.372	0.483
neglects the children (IPV_b)	0.609	0.488	0.594	0.491	0.501	0.500	0.415	0.493
argues with husband (IPV_c)	0.553	0.497	0.519	0.500	0.443	0.497	0.364	0.481
refuses to have sex with husband (IPV_d)	0.466	0.499	0.393	0.488	0.381	0.486	0.314	0.464
burns the food (IPV_e)	0.569	0.495	0.502	0.500	0.433	0.496	0.329	0.470
does any of the above (IPV_{any})	0.799	0.400	0.757	0.429	0.657	0.475	0.557	0.497

Table A3: Intervention sectors of aid

Sector	N	Freq.
Agriculture	145	12.28
Banking	7	0.59
Communication	78	6.60
Education	132	11.18
Energy generation and supply	19	1.61
Government and civil society	365	30.90
Health	10	0.85
Industry	101	8.55
Other social infrastructure and services	136	11.52
Others	52	4.40
Water supply and sanitation	136	11.52
Total	*1181*	*100.00*

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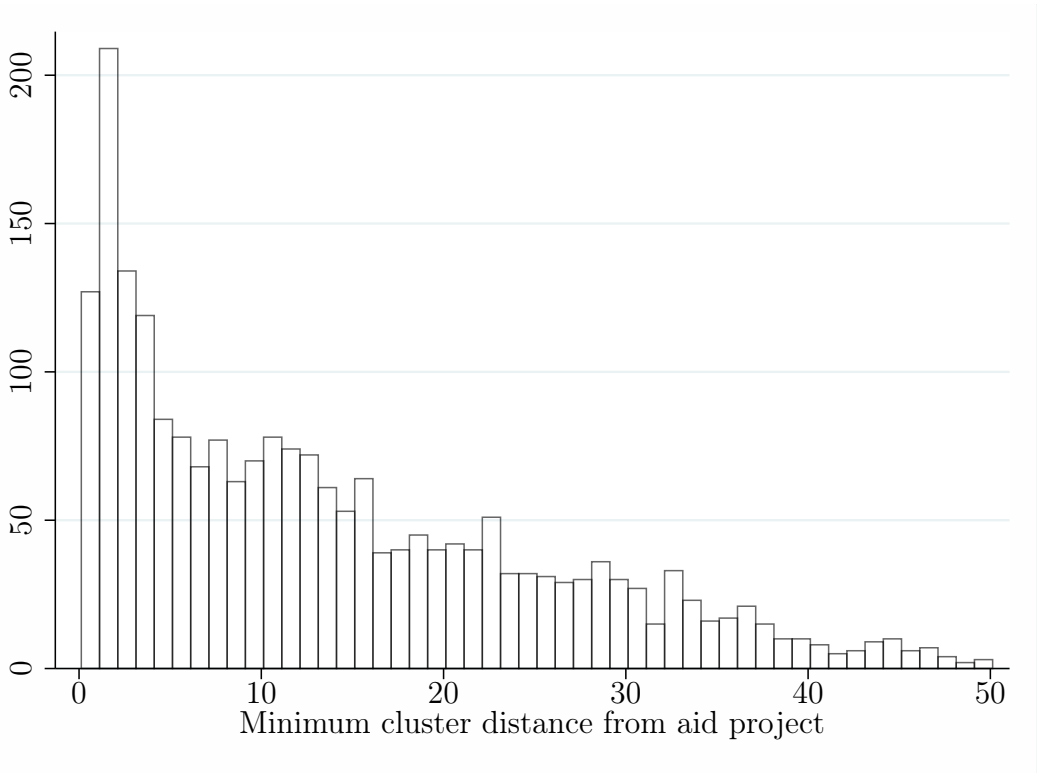
Figure A.1: Distribution of household distance from closest aid project



Notes: Counts of DHS clusters on the vertical axis. Distance in km.

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B Heterogeneity by ethnic groups

Ethiopia is a multi-ethnic country, with each ethnic group boasting its own unique cultural heritage and historical background. Among these, the Amhara and Tigray communities stand out for their deep-rooted history in plow-based agriculture. According to Alesina et al. (2013), this form of livelihood may foster less equal gender norms within these societies, attributed to its labor distribution and societal roles. In stark contrast, ethnic groups such as the Afar and Somali predominantly engage in pastoralism, a lifestyle that differs markedly from agriculture.

The divergence in livelihoods—farming for some and herding for others—naturally leads to variations in societal norms and behaviors. Michalopoulos et al. (2019) highlight that such differences extend to behavioral traits, attitudes towards violence, and perspectives on gender roles. For instance, the mobile nature of pastoralism often necessitates heightened vigilance and a readiness to resort to force as a means of protecting livestock. Conversely, agricultural communities, with their settled and long-term living arrangements, are inclined to cultivate cooperative cultures that emphasize collective well-being.

Furthermore, ethnic groups in Ethiopia tend to be spatially clustered, adding another layer to their diverse societal fabric. The Amhara and Tigray ethnic groups, for example, are predominantly concentrated in Northern Ethiopia, while the Somali and Afar communities are found in the eastern regions. This geographical clustering not only reflects cultural and historical ties but also correlates with variations in the distribution of aid projects. Our analysis reveals that the number of women living within 10 km of ongoing aid projects varies significantly among ethnic groups, with 2,775 from the Afar ethnic group, 10,879 from the Amhara ethnic group, 9,860 from the Oromo ethnic group, 2,510 from the Somali ethnic group, and 6,476 from the Tigray ethnic group.

Following McGavock (2021), to quantitatively illustrate these differences, Table A4 estimates separately for women belonging to ethnic groups that historically used the plow (Column 1), and those that did not use the plow (Column 2). This analysis offers a clearer understanding of where aid projects are most effective and which ethnic groups benefit the most. Our results suggest that women from ethnic groups with a history of plow use, such as those from Tigray and Amhara, experience larger benefits from aid projects compared to women from ethnic groups with no historic plow use, like the Afar and the Somali.

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Michalopoulos et al. (2019) documents that women from agriculturally reliant ethnic groups are less likely to accept wife beating compared to those from pastoral backgrounds. Table A4 differentiates these effects, showing that women with agriculturalist ancestors (Column 3) benefit more from aid projects than those with pastoralist ancestors (Column 4).

Table A4: Heterogeneity by Woman's ethnic ethnic group

	Woman's ethnic group			
	(Plower)	*(Non-plower)*	*(Agriculturalist)*	*(Pastoralist)*
	(1)	(2)	(3)	(4)
ongoing10	-0.065***	-0.080***	-0.078***	-0.083***
	(0.020)	(0.019)	(0.021)	(0.020)
future10	0.078***	0.025	0.051***	0.032*
	(0.018)	(0.016)	(0.019)	(0.017)
Observations	22,987	35,834	28,920	28,056
R-squared	0.281	0.186	0.252	0.198
Clustered S.E.	✓	✓	✓	✓
Controls	✓	✓	✓	✓
Geographic F.E.	✓	✓	✓	✓
Year F.E.	✓	✓	✓	✓
Difference in difference	-0.143	-0.105	-0.129	-0.115
F test: ongoing10-future10=0	116.1	44.52	82.23	45.75
p-value	0	0	0	0
Mean of IPV_{any}	0.659	0.710	0.667	0.709

Notes: This table presents the results of difference-in-differences estimates. The dependent variable in columns (1-4) is our measure of IPV. The analysis in column (1) is restricted to the subsample of women belonging to ethnic groups that historically used the plow, column (2) to those that did not use the plow, column (3) to those whose ancestors were predominantly agriculturalists, and finally column (4) to those whose ancestors were predominantly pastoralists. *Ongoing10* is a dummy identifying whether woman i lives within 10 km of the location of an ongoing foreign aid project, while *future 10* is a dummy variable that identifies whether woman i resides within 10 km of the closest target location of a future foreign aid project. Controls include women's household size, age, literacy, religion, and years of education. Estimates also includes year and Woredas spatial fixed effects. Standard errors (in parentheses) are clustered at the DHS cluster level. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

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C Tables discussed in the text

Table A5: Aid Exposure & IPV: Precision level 1 & 2

VARIABLES	(1) 10 km cutoff	(2) 10 km cutoff	(3) 10 km cutoff	(4) 10 km cutoff	(5) 10 km cutoff
ongoing10	-0.313***	-0.313***	-0.153***	-0.081***	-0.088***
	(0.004)	(0.012)	(0.011)	(0.016)	(0.016)
future10	-0.069***	-0.069***	-0.011	0.040***	0.035**
	(0.005)	(0.012)	(0.009)	(0.014)	(0.014)
Clustered S.E.	x	✓	✓	✓	✓
Controls	x	x	✓	✓	✓
Geographic F.E.	x	x	x	✓	✓
Year F.E.	x	x	x	x	✓
Difference in difference	-0.245	-0.245	-0.142	-0.120	-0.123
F test: ongoing10-future10=0	1950	261.1	145.3	95.08	100.5
p value	0.000	0.000	0.000	0.000	0.000
Observations	58,953	58,953	56,429	56,427	56,427
R-squared	0.080	0.080	0.169	0.221	0.222

Notes: This table presents the results of difference-in-differences estimates. The dependent variable in columns (1-5) is our measure of IPV. *Ongoing10* is a dummy identifying whether woman i lives within 10 km of the location of an ongoing foreign aid project, while *future 10* is a dummy variable that identifies whether woman i resides within 10 km of the closest target location of a future foreign aid project. World Bank aid are restricted to precision level 1 and 2. Controls include women's household size, age, literacy, ethnicity, religion, and years of education. Column (5) also includes year and Woredas spatial fixed effects. Standard errors (in parentheses) are clustered at the DHS cluster level. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

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Table A6: Aid Exposure & IPV: Alternative cut offs

VARIABLES	(1) 10 km cutoff	(2) 25 km cutoff	(3) 50 km cutoff	(4) 75 km cutoff
ongoing10	-0.075***			
	(0.015)			
future10	0.044***			
	(0.013)			
ongoing25		-0.038**		
		(0.015)		
future25		0.083***		
		(0.014)		
ongoing50			-0.031	
			(0.061)	
future50			0.152*	
			(0.061)	
ongoing75				-0.094
				(0.061)
future75				-0.025
				(0.061)
Difference in difference	-0.119	-0.120	-0.120	-0.119
p value	0.000	0.000	0.000	0.000
F test: ongoing10-future10=0	101.5			
F test: ongoing25-future25=0		187.9		
F test: ongoing50-future50=0			216	
F test: ongoing75-future75=0				204
Observations	56,454	56,657	56,755	56,875
R-squared	0.223	0.228	0.229	0.228

Notes: This table presents the results of difference-in-differences estimates. The dependent variable in columns (1-5) is our measure of IPV. *Ongoing 10, 25, 50 and 75* is a dummy identifying whether woman i lives within 10, 25, 50 and 75 km of the location of an ongoing foreign aid project, while *future 10, 25, 50 and 75* is a dummy variable that identifies whether woman i resides within 10, 25, 50 and 75 km of the closest target location of a future foreign aid project. Controls include women's household size, age, literacy, ethnicity, religion, and years of education. Column (5) also includes year and Woredas spatial fixed effects. Standard errors (in parentheses) are clustered at the DHS cluster level. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

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Table A7: Aid Exposure & IPV: Alternative IPVs

VARIABLES	(1) IPVa	(2) IPVb	(3) IPVc	(4) IPVd	(5) IPVe
ongoing10	-0.028*	-0.064***	-0.059***	-0.048***	-0.070***
	(0.016)	(0.017)	(0.016)	(0.016)	(0.016)
future10	0.021	0.024	0.013	0.002	0.028*
	(0.015)	(0.015)	(0.015)	(0.014)	(0.015)
Difference in difference	-0.0485	-0.0879	-0.0723	-0.0498	-0.0973
F test: ongoing10-future10=0	16.72	53.69	49.14	24.52	96.57
p value	0.000	0.000	0.000	0.000	0.000
Observations	56,607	56,660	56,487	55,357	56,674
R-squared	0.175	0.155	0.193	0.198	0.221

Notes: This table presents the results of difference-in-differences estimates. The dependent variable in columns (1-5) is our measure of IPV. In particular it refers to the conditions under which the respondent justifies being beaten by her husband for the following reason: IPVa 'going out without telling her husband'; IPVb 'neglecting children'; IPVc 'arguing with husband'; IPVd 'refusing to have sex with husband'; IPVe 'burning food'. *Ongoing10* is a dummy identifying whether woman i lives within 10 km of the location of an ongoing foreign aid project, while *Future10* is a dummy variable that identifies whether woman i resides within 10 km of the closest target location of a future foreign aid project. Controls include women's household size, age, literacy, ethnicity, religion, and years of education. Column (5) also includes year and Woredas spatial fixed effects. Standard errors (in parentheses) are clustered at the DHS cluster level. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

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Table A8: Further Robustness: Conley S.E.

VARIABLES	(1) 10km	(2) 25km	(3) 50km	(4) 75km	(5) 100km
ongoing10	-0.075***	-0.075***	-0.075***	-0.075***	-0.075***
	(0.015)	(0.025)	(0.028)	(0.027)	(0.028)
future10	0.044***	0.044*	0.044*	0.044*	0.044*
	(0.013)	(0.023)	(0.026)	(0.027)	(0.028)
Difference in difference	-0.119	-0.119	-0.119	-0.119	-0.119
F test: ongoing10-future10=0	101.5	9.19	7.77	7.75	7.27
p-value	0.000	0.002	0.004	0.005	0.007
Observations	56,454	56,454	56,454	56,454	56,454
R-squared	0.223	0.223	0.223	0.223	0.223

Notes: This table replicates column (5) of Table 2. Columns (1)-(5) report Conley standard errors corrected for arbitrary cluster correlation respectively for 10km, 25km, 50km, 75km and 100km distance cut-offs. All regressions include controls and year and Woredas spatial fixed effects. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

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