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Does War Empower Women? Evidence from Timor Leste

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Abbreviations

CAVR   Commission for Reception, Truth and Reconciliation
TLDHS   Timor-Leste Demographic and Health Survey
TLSS2 2007   Timor Leste Living Standard Measurement Survey
                (January 2007 and January 2008)
TLSS2-X 2008   Timor Leste Living Standard Measurement Survey
                (May and December 2008)
UN   United Nations
UNDP   United Nations Development Programme

Introduction

Conflicts may change the material conditions and the incentives individuals face through death, displacement and other consequences of violence. Being a victim of a war can also profoundly change individual beliefs, values and preferences (Bellows and Miguel 2009). Several counts have linked violent conflicts – including the two world wars – to changes in the roles of women, as well as social norms and beliefs towards gender roles within societies.[1] The aim of this paper is to investigate the medium- and long-term consequences of a long-lasting conflict – the Timor Leste conflict – on various dimensions of women's empowerment.

In particular, we analyse whether and how the exposure to the Timor Leste conflict affected (i) the decision-making power of women within the household and the community, (ii) the probability of a woman being a victim of domestic violence, and (iii) attitudes and perception towards domestic violence. We also explore whether exposure to the conflict influenced economic empowerment indicators, such as education and labour market outcomes, and reproductive indicators such as fertility and marriage.

A large literature has emphasised how wars and civil conflicts destroy countries and, within them, people, institutions and social capital. The legacies of wars have been deemed to be devastating.[2] However, historically wars have also promoted state formation and nation building (Tilly and Ardant 1975), as well as positive social change (Acemoglu, Autor and Lyle 2004). Recent literature has shown evidence for a positive link between conflict and social capital, social cohesion and political participation. Bellows and Miguel (2009) find that individuals who experience violence are more likely to engage in politics, attend community meetings and join social and political groups. Similarly, De Luca and Verpoorten (2011) show that political exposure to a conflict increases political participation. These findings are compatible with the psychological literature on post-traumatic behaviour, whereby individual tragedies may lead to personal growth and socio-political activism (Tedeschi and Calhoun 2004). Gilligan, Pasquale and Samii (2014) investigated the effects of war on social cohesion and found that members of communities highly exposed to the Nepalese conflict exhibit more pro-social behaviours in relation to those exposed to low levels of violence.

Prolonged conflicts have also been associated with changes in the roles of women and in social norms and beliefs towards gender roles. The death or displacement of a family member (which may change the gender composition within communities and households), for instance, or a sudden income drop caused by violence exposure may induce women to work and to assume more responsibilities within the household. Fertility and marriage behaviours may also change as a result of male shortages (or absences) or of income shocks (Calderón, Gáfaro and Ibáñez 2011). As a consequence, a conflict may change the role of women within the household and the community and in some cases also increase their economic bargaining power. Akbulut-Yuksel, Khamis and Yuksel (2011) analyse the long-term legacies of post-Second World War mobilisation on German women's labour market outcomes. Their results show that the increase in the female labour supply brought about by the war was only temporary. Once the prisoners of war came back, women could return to being housewives. Traditional gender roles were too engrained to make a permanent change possible. Another strand of studies advances the hypothesis that women who worked during wartime experienced an increase in their earning capacity or their information about available jobs, thereby inducing additional labour supply also after the war. Alternatively, the preferences of women who worked – or even those who did not – may also have been altered by widespread female labour force participation during the war. This may

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[1] See review in Justino, Cardona, Mitchell and Muller (2012).
[2] See review in Justino (2012).

have also changed the labour market participation of women in the long term (Acemoglu *et al.* 2004).

Calderón *et al.* (2011) examine the consequences of forced displacement on female labour force participation and its subsequent impact on bargaining power and domestic violence. The results suggest that, although women appear to be more actively involved in the labour market, their status within the household did not improve and women faced increases in domestic violence. This result is consistent with expressive domestic violence theories whereby an increase in women's economic bargaining power may not always be accompanied by a change in partners' violent behaviours toward them. A newly economically empowered female threatens a man's identity as the most powerful in the household: violence may increase if her status rises too high relative to her husband, and the husband feels less economically empowered and so uses violence to reassert a sense of power (Heath 2014).

A few recent studies have established causal links between exposure to conflict and the prevalence of domestic violence towards women. La Mattina (2014) finds that the exposure to higher genocide intensity in Rwanda increased domestic violence for women who married after the genocide. Other studies test this hypothesis advancing the idea that the experience of conflict may change the behaviour and attitudes of people. Notably, the victims of conflict may become themselves perpetrators of violence both in the community and within the household, and experiences of violence and conflict may lead to acceptance and tolerance of the use of violence (culture of violence). Post-traumatic stress disorder, for instance, may result in victims becoming perpetrators of domestic violence or more tolerant towards violent behaviours (both as perpetrators and victims). This could potentially lead to the transmission of a culture of violence across generations (Calderón *et al.* 2011). Gallegos and Gutierrez (2011) investigate the effect of women's exposure to civil conflict in Peru on the probability of experiencing domestic violence several years after the conflict ended. They find that women who were exposed to the conflict (mostly during childhood and teenage years) are more likely to be victims of domestic violence. A potential mechanism that is suggested is that women who were exposed to the civil conflict at a younger age are more likely to accept violent behaviours. Indeed, the paper reports that women affected by the conflict are more likely to report that it is justified for a husband to beat the wife. Similarly, Noe and Rieckmann (2013) investigate the effect of the conflict in Colombia on domestic violence and find that women in districts with high conflict intensity display a higher probability of being victims of domestic violence than women less affected by the conflict. The potential mechanism suggested is that women become more tolerant towards violence.

Conflicts therefore appear to result in changes in the beliefs and attitudes of people – women in particular – and/or in changes in the gender composition and, more generally, in the economic conditions of households and communities, which may alter the marriage market, the labour market and several other indicators – and so ultimately result in changes in gender roles and several indicators of women's empowerment. From the empirical and theoretical literature discussed above, we may expect that conflict exposure at certain stages of an individual life may result in either more or less empowerment of women. We may also expect that different dimensions of women's empowerment are affected differently depending on the characteristics of the conflict itself and on the effects that it has on communities and individuals.

This paper aims to contribute to this emerging literature by analysing the impact of conflict exposure on women's empowerment. The paper offers five innovations in relation to the existing literature. First, we are able to distinguish between different dimensions of women's empowerment, something that has not been possible in other studies. Second, we identify and discuss potential causal mechanisms that may explain the effects of conflict on women's empowerment. Third, we are able to discuss the long-term effects of conflict – again

something not done in other studies. Many of the existing studies of the effects of conflict on social capital, social cohesion and political participation are only able to assess the short-term effect of conflict (immediately after the end of a war). We are able to assess the long-term effects, and so inform better on whether a long-lasting conflict reshaped gender roles and the norms and beliefs within society. This analysis is possible because the Timor Leste conflict was a long conflict with peaks of violence at the beginning and at the end. These peaks of violence had quite different forms and we exploit this variation to investigate the long-term effects of violence exposure, as well as whether different forms of violence may generate heterogeneous impacts. This constitutes a fourth contribution of the paper. Exposure to either the early waves of violence or the last wave is very different in nature and may therefore affect exposed individuals in very different ways. In particular, exposure to the early years of the conflict has allowed us to assess the long-term consequences of conflict, while the exposure to the last wave of violence allowed us to assess earlier effects (nearly ten years after the war ended). Importantly, the exposure to the early years of the conflict ended with the continuation of Indonesian repression, while the last wave of violence was the final act of Indonesian troops as they retreated. Also, while the early years of the conflict ended with a diminished intensity of violence but a substantially unchanged social and political situation, the last wave of violence ended with a massive entry of international humanitarian assistance in the areas affected by the retreat of the Indonesian troops. These are unique features of our analysis as these two different types of conflict shocks might affect the role of women and possibly their empowerment differently, with better or worse consequences depending on the aspect of women's empowerment under analysis. Finally, by exploiting the long duration of the conflict and its variation over time, we are also able to assess the effect of the conflict at different stages of a person's life. We are specifically interested in exploring the effects of the conflict that occurred during the school years or a person's youth. These phases of life of a person are crucial as they coincide with a moment of human capital investment but also (in adolescence) with a period in which women become fertile, less dependent on their parents and have to choose between a delay in childbearing to pursue some form of career, or become dependent on men (Bandiera *et al.* 2014).

The importance of investigating the effects of violent conflict on women's empowerment, broadly relates to a growing literature on the relationship between the empowerment of women and economic development. Duflo (2012) emphasises that economic development, by reducing poverty and gender inequality, may improve conditions for women. At the same time, policy interventions devoted to empower women may accelerate development. Some empirical evidence suggests that by empowering women within the household, within a community (e.g. by increasing their role in local institutions) or on farm activities (e.g. by giving them access to land), women tend to invest disproportionately more in child-related outcomes. Hence, if empowering women improves children's outcomes (such that their human capital accumulation increases), or any other socioeconomic outcome, this would also favour economic development (Doepke and Tertilt 2014). Assessing the effect of conflict on various dimensions of women's empowerment may also shed light on the relationship between conflict and economic development, a relevant question in light of the focus of aid and development assistance to fragile and conflict-affected countries. Understanding the relationship between conflict and women's empowerment, as well as the channels through which this happens, has particularly important policy implications due to an emphasis of policy in post-conflict countries on the role of women. This is still largely under-researched but it is becoming critical for the definition of effective post-conflict reconstruction strategies.

The rest of the paper is organised as follows. Section 1 describes the Timor Leste conflict. Section 2 provides a description of the data used and a definition of the outcomes analysed. Section 3 explains the identification strategy and Section 4 discusses the results. Section 5 concludes.

1   Background: the Timor Leste conflict

Timor Leste occupies the eastern part of the island of Timor in the Indonesian archipelago. The sea surrounding Timor is rich in oil and natural gas, which largely explains the strategic interest that this small territory of just over one million people has generated in recent decades. The country was under Portuguese colonial rule from 1500 to 1974. After the Portuguese left, Indonesia perceived Timor Leste as a communist threat to their national security and occupied the territory by force. A guerrilla war started, spurred by the Revolutionary Front for an Independent East Timor and its armed wing (the Armed Forces for the National Liberation of East Timor) which tried to resist the repression imposed by the Indonesian forces. In the early occupation years, a large number of civilians abandoned the towns and moved to the interior of the country, mainly to mountainous areas, to be safe from Indonesia's military control. Several thousand individuals were forcibly displaced during the Indonesian occupation and forced to live in extreme conditions without adequate food, shelter, or health facilities (Felgueiras and Martins 2006; Gusmão 2004). Approximately 60,000 people lost their lives in the early years of the occupation. The number of deaths reached 200,000 by the end of the occupation in 1999 (UNDP 2002).

The situation in Timor Leste received little international attention until the Santa Cruz massacre in November 1991, in which Indonesian forces killed 200 protesters. The massacre was broadcast by the international media and raised considerable awareness of human rights violations during the Indonesian occupation. The independence movement received support from the Portuguese government and international organisations, including the United Nations (UN). These events, in addition to the 1997 Asian financial crisis, resulted in Indonesia agreeing to a referendum on the independence of Timor Leste. On 30 August 1999, 79 per cent of the population of Timor Leste voted in favour of independence. The aftermath of the referendum generated a wave of destruction, violence, and human rights violations by Indonesian forces and militias during their withdrawal from Timor Leste (Alonso and Brugha 2006). This 'scorched-earth' attack by the Indonesian troops and pro-Indonesia militia groups (CAVR 2006; United Nations Development Programme (UNDP) 2002) generated a massive displacement and the destruction of private dwellings and public infrastructure. Approximately 80 per cent of the country's infrastructure and buildings were destroyed (UNDP 2002). The number of killings during this last wave of violence has been estimated at between 1,000 and 2,000 people, approximately 0.2 per cent of the Timorese population (Robinson 2003; UNDP 2002). Some individuals in urban areas who were supporters of the independence movement were targeted and killed, whereas others fled from their areas of residence, fearing attacks by the Indonesian troops and militias in Dili and other urban areas (CAVR 2006; Robinson 2003). Another set of victims was mostly poor farmers who fled to safer areas or fell victim to the 'scorched-earth' tactics employed by Indonesian forces withdrawing from Timor Leste (CAVR 2006). In October 1999, a United Nations Transitional Administration was settled in Timor Leste, which established the end of the conflict.

The conflict in Timor Leste has significantly evolved over time and across space. The Timor Leste Commission for Reception, Truth and Reconciliation (CAVR), established in 2001, has identified three distinct phases of the conflict during the period between December 1975 and September 1999 (CAVR 2005). The first phase, from 1975 to 1984, was related to the initial Indonesian invasion and occupation of Timor Leste. The first few years, from 1975 to 1979, were the most intense in terms of killings and destruction. The second phase, from 1985 to 1998, was characterised by the consolidation and normalisation of the occupation. Although people were killed in this phase (for instance, during the Santa Cruz massacre), the violence during this period was of relatively low intensity. The third phase of the conflict was identified with the 1999 withdrawal of Indonesian troops and the accompanying wave of violence. Therefore, two main peaks of violence across these three periods could be identified: the

earlier years of the conflict (1975–79 and 1983) and the 1999 last wave of violence (CAVR 2005).

The conflict also varied significantly at the geographical level. The violence was primarily concentrated in specific areas, and its geographic variation generally followed the movement of the Indonesian military forces. The occupation was more intense initially in the western region of Timor Leste because of the proximity to the West Timor border. It then spread to the central and eastern regions. The last wave of violence in 1999 was particularly intense in the western region and the urban areas of the central regions (CAVR 2005). The concentration of violence in 1999 in the western districts was also due to a long-established network of pro-Indonesian groups since before 1999. In contrast, the eastern and central regions were important areas for the resistance forces (Robinson 2003). We will explore this variation in violence across time and space in the empirical analysis below.

The levels of violence experienced in Timor Leste declined considerably after independence. In 2006, Timor Leste faced renewed civil strife as a result of fighting between different factions of the independence movement (Muggah *et al.* 2010; Scambary 2009). Although fighting and violence have become less pronounced, some areas of Timor Leste continue to face serious challenges in terms of insecurity, youth unemployment and violence (Muggah *et al.* 2010).

2 Data

The analysis in this paper is based on different sources of data. First, we make use of the 2009–10 Timor-Leste Demographic and Health Survey (TLDHS 2009–10) which is the first national-level population and health survey conducted in the country. The TLDHS 2009–10 was implemented by the National Statistics Directorate of the General Directorate for Policy Analysis and Research of the Ministry of Finance, under the aegis of the Ministry of Health (NSD 2010). A total of 13,137 women aged between 15 and 49 were interviewed in selected households. Data collection took place over a six-month period, from early August 2009 to early February 2010.[3]

For a fewer number of outcomes, we make also use of the Timor Leste Living Standard Measurement Survey conducted between January 2007 and January 2008 (the TLSS2 2007 survey)[4] and its extension conducted between May and December 2008 (the TLSS2-X 2008 survey) jointly by the National Statistics Directorate in Timor Leste and the World Bank (TLSS 2007, 2008). Both surveys include a broad range of individual and household-level indicators. The TLSS2-X 2008 was designed to revisit one third of the households interviewed under the TLSS2 2007 to explore additional household welfare and behaviour outcomes.

In order to identify individuals and households exposed to the conflict, we exploit data on the number of killings and deaths from starvation across time and space collected in the Human Rights Violations Database, which identify conflict-exposed districts and years.[5]

2.1 Outcomes

We investigated a wide set of outcomes which we briefly describe here. Table 2.1 shows the summary statistics. We used information collected in the TLDHS survey to explore domestic violence, attitudes towards domestic violence, decision-making processes within the household, as well as several additional socioeconomic indicators (education, work participation, health, fertility and marriage). We exploited information contained in the TLSS2-X survey to analyse community decision-making variables.[6]

Decision-making within the household. Women were asked who in the household usually makes decisions concerning certain matters: her own health (only in the women sample), small household purchases, large household purchases and visits to the family. These questions were put to a sample of currently married women. We constructed an indicator that informs on the number of decisions (from 0 to 4) that the respondent usually takes alone. Similarly, we constructed an indicator that informs on the number of decisions that the respondent and the partner usually take jointly. We interpreted this variable as follows: the higher the number of decisions that a woman respondent takes alone, the higher her level of empowerment within the household. In contrast, the higher the number of decisions that a woman respondent takes jointly with her husband, the lower her level of empowerment. Therefore, we assumed that a woman is more empowered if she takes decisions completely alone. If she replies that she takes decisions together with the husband it is likely that her

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[3] A Men's Questionnaire was also administered to all eligible men aged 15 to 49 living in every third of selected households. In our future work we will also explore men's outcomes. This would provide additional insights on the effects of the conflict on women's empowerment.

[4] Refer to Justino, Leone and Salardi (2014) for a description of this dataset.

[5] These data were compiled by the Commission for Reception, Truth and Reconciliation from voluntary statements made by people (victims, perpetrators and others) affected by violence. See Justino, Leone and Salardi (2014) for a more detailed description of this data.

[6] In this module, interviews were conducted separately for men and women in order to determine differences across gender. More specifically, households were randomly assigned a number. For these questions, the respondent is the household head if the household number is even and is the spouse if the household number is odd. Therefore the information is at the household level but is directly related to the respondent (TLSS, 2008).

degree of participation in some types of decisions is still quite low. Table 2.1 shows that the number of decisions that the partner takes alone is quite low. Hence we deemed this assumption to be reasonable and the results indeed look consistent with it.[7]

Table 2.1   Outcome variables – Women sample

	Obs.	Mean	Std dev	Min	Max
Number of decisions in the household respondent takes alone	7877	1.195	1.066	0	4
Number of decisions in the household respondent takes jointly with partner	7877	2.390	1.301	0	4
Number of decisions in the household partner takes alone	7877	0.406	0.803	0	4
Any spousal violence since age 15	2162	0.367	0.482	0	1
Any spousal violence in past 12 months	2162	0.338	0.473	0	1
Any less severe physical violence	2162	0.311	0.463	0	1
Any severe physical violence	2162	0.075	0.264	0	1
Any emotional violence from spouse in past 12 months	2162	0.075	0.263	0	1
Any sexual violence in past 12 months	2162	0.018	0.132	0	1
Wife-beating is justified (agree with all reasons)	13137	0.212	0.409	0	1
Number of reasons in agreement with justifying wife-beating	13137	2.853	1.621	0	5
Refusing sex is justified (agree with all reasons)	13137	0.505	0.500	0	1
Number of reasons in agreement with justifying refusing sex	13137	1.988	1.189	0	3
Years of education	13137	6.715	5.706	0	20
Primary More	13137	0.707	0.455	0	1
Secondary More	13137	0.478	0.500	0	1
Respondent working in past 12 months	13131	0.395	0.489	0	1
Working for someone else	5422	0.156	0.363	0	1
Paid in cash/kind for work	5422	0.212	0.409	0	1
Respondent's height	12878	150.251	5.705	100	192
Total number of children given birth to	13137	2.732	2.972	0	15
Age at birth of first child	7969	21.308	4.237	12	42
Age at time of first marriage	8431	20.025	4.320	10	49

Notes: All outcomes (except decision-making variables within the community) are from the TLDHS 2009 survey. The decision-making outcomes within the community are from the TLSS2-X 2008 survey.

Participation in community decision-making. The first variable of interest is defined as 1 if the respondent attended a community meeting in the past 12 months, and 0 otherwise. The second variable is defined as 1 if the respondent answers that she has been involved in community decision-making and 0 otherwise.

Domestic violence. The domestic violence module was administered to women in one third of households selected for the TLDHS individual interview.[8] This module was conducted among women who have at some time been married. We defined a dummy variable equal to 1 if a woman, since the age of 15, has ever experienced violence from her partner or any

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[7] In our future work we will investigate further if this particular assumption is reasonable in our context.
[8] Only one woman in the household answered the domestic violence module in each selected household. The violence module was not administered if privacy could not be ensured. Therefore 65 of the 3,022 women eligible for the violence module had to be excluded because of lack of privacy, and six women refused to be interviewed in the domestic violence module.

form of domestic violence (emotional, physical or sexual).[9] We also considered an alternative binary variable equal to 1 if a woman has experienced any form of domestic violence in the previous 12 months. Table 2.1 shows that the most prevalent form of violence in this sample is physical violence. Therefore, in our empirical analysis we also investigated this form of violence separately (splitting between 'less severe' and 'severe' physical violence). These variables are defined as dummies equal to 1 if a woman has been a victim of, respectively, less severe or severe physical violence in the past 12 months.

Attitudes towards domestic violence. We analysed variables that inform on the attitudes of the respondents toward intimate partner violence. More specifically, women were asked whether a husband is justified in hitting or beating his wife if she burns the food, if she argues with him, if she goes out without telling him, if she neglects the children, and if she refuses to have sexual intercourse with him. The fewer situations, or reasons, that a woman agrees with the stronger the indication of a sense of entitlement, self-esteem, and status, which in turn reflects positively on her sense of empowerment (NSD 2010).

We constructed two types of variables. The first is defined as a dummy equal to 1 if women justify wife-beating for all of the five reasons asked (and 0 otherwise). We also constructed an alternative measure defined as the number of reasons (from 0 to 5) that a woman agrees with. For both outcomes, the higher the percentage of those that say yes to all of the reasons, or the higher the number of reasons women agrees with, the lower the sense of empowerment of a woman. This measure reflects attitudes toward domestic violence. Summary statistics indicate that a woman's acceptance of wife-beating from her husband is less justified if she refuses to have sexual intercourse with him.

Attitudes towards refusing sex. The TLDHS survey also collected information on attitudes towards refusing sex with a husband. This measure reflects perceptions of sexual roles and women's control and rights over their bodies. Respondents were asked whether they thought that a wife is justified in refusing to have sexual intercourse with her husband under three circumstances: if she knows that her husband has a sexually transmitted disease, if she knows that her husband has sexual intercourse with other women, or if she is tired or not in the mood. We construct two types of variables. The first variable is a dummy equal to 1 if the respondent agrees with all the three statements. The second variable is defined as the number of reasons a respondent agrees with (from 0 to 3). The higher the percentage of respondents that say 'yes' or the higher the number of reasons a respondent agrees with, the higher the sense of empowerment of women.

One important remark is that these questions on attitudes toward domestic violence were posed to the whole sample of women surveyed and not only to those selected for the domestic violence module.

Education. We investigated the number of years of education an individual attained as the highest level of schooling. We also looked at binary indicators, specifically at whether individuals completed primary or higher level of education (or not), and whether they had completed secondary or higher education levels.

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[9] Each of these types of violence are defined on the basis of the following questions: Emotional violence – (Does/did) your (last) husband ever: 1. Say or do something to humiliate you in front of others? 2. Threaten to hurt or harm you or someone close to you? 3. Insult you or make you feel bad about yourself?; Physical violence – (Does/did) your (last) husband ever: 1. Push you, shake you, or throw something at you? 2. Slap you? 3. Twist your arm or pull your hair? 4. Punch you with his fist or with something that could hurt you?; Severe physical violence: 5. Kick you, drag you, or beat you up? 6. Try to choke you or burn you on purpose? 7. Threaten or attack you with a knife, gun, or any other weapon?; Sexual violence – (does/did) your (last) husband ever: 1. Physically force you to have sexual intercourse with him even when you did not want to? 2. Force you to perform any sexual acts you did not want to? (NSD 2010).

Work participation and occupational outcomes. We looked at work participation and defined a dummy variable equal to 1 if the respondent had worked in the past 12 months.[10] We also analysed occupational outcomes among samples of individuals that worked.[11] Specifically, we looked at whether individuals worked for someone else or not (the 0 category refers to those that worked for the family or as self-employed which are mostly non-paid occupations). We also analysed whether individuals were in a paid job. This variable is defined as 1 if an individual work was paid in cash or in kind and 0 if the work was unpaid.

Health. We considered height as a long-term indicator of health.

Fertility and marriage. We analysed total fertility defined as the total number of children a woman had given birth to. We also looked at the age at which an individual had the first child and the age at which an individual first married.

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[10] Occupational outcomes are also available in the TLSS2 survey. We will use these variables in our future work.
[11] We ignore selection issues in this current work.

3   Identification strategy

The aim of this study is to investigate the effect of exposure to the earlier years of the conflict (1975–79, 1983) and to the 1999 final wave of violence at different stages of an individual life on a set of women's empowerment outcomes.

To construct a measure of exposure to the earlier years of the conflict and to the 1999 violence, we matched information on the number of conflict events to information on the year and district of birth of each individual. The information on the number of conflict events is measured by the number of killings and the number of deaths from starvation contained in the Human Rights Violations Database dataset. These figures present substantial variation across district and over time.

First, we obtained a set of variables which informed us about the number of conflict events in each year and district since the start of the conflict in 1975 up to its end, the final wave of violence in 1999. On the basis of these variables we constructed a set of binary variables that are defined as equal to 1 if in a specific year and district the number of killings or the number of deaths from starvation are above a given threshold, defined as the mean of the killings or the number of deaths from starvation plus one standard deviation.[12]

Second, we matched this information to the year and district of birth of each individual and defined our conflict exposure variables at different ages of an individual life. Because we are interested in assessing conflict exposure at different stages of a person's life, we defined binary variables equal to 1 if the district of birth of an individual was exposed to the earlier years of the conflict (1975–1979 and 1983) when she was between birth and five, six and 14, 15 and 24 years old.

We also defined separate binary variables equal to 1 if the district of birth of an individual was exposed to the 1999 violence when she was between birth and five, six and 14, 15 and 24 years old, or over 25.[13] To give an example, an individual who was born in 1969 was six years old in 1975 which is the start of the conflict. Therefore, if her district of birth is defined as a conflict district in the earlier years of the conflict, she will be assigned 1 for the exposure to the earlier years of the conflict at ages six to 14, and 0 otherwise. Similarly, a person born in 1977 was six years old in 1983 which is one of the peak years of the earlier phase of conflict. Therefore, if her district of birth is defined as a conflict district in that year she will be assigned 1 for the exposure to the earlier years of the conflict, exposure between the ages of six and 14, and 0 otherwise. In addition, a person born in 1977 was 22 years old in 1999 (the last wave of violence). Therefore if her district of birth is again defined as a conflict district in 1999, she will also be assigned 1 for the 1999 violence exposure between the ages of 15 and 24.

The district and time variation of the intensity of the conflict allow us to employ a difference-in-differences empirical strategy. The first difference compares cohorts exposed to the conflict at certain ages (separating out the exposure to the earlier years of the conflict and exposure to the 1999 violence) to those not exposed to the conflict at those ages. The second difference compares districts with conflict events (separating out the exposure to the earlier years of the conflict and exposure to the 1999 violence) to those without any conflict event.

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[12] See the discussion in Justino, Leone and Salardi (2014) on this definition.
[13] We have defined alternative age groups and our results remain consistent. We also defined the same set of variables as continuous indicating the number of conflict events in the district of birth of an individual during the earlier years of the conflict or during the 1999 violence at different ages as defined above. The main results remain mostly unchanged.

Our analysis concentrates on a sample of individuals who were aged between 15 and 49 at the time of the surveys to assess the effect of exposure to conflict on a set of outcomes observed several years after the conflict ended. More specifically, in the analysis that investigated the outcomes contained in the TLDHS survey, our sample includes individuals born between 1959 and 1995,[14] who were aged between 15 and 49 in 2009/10. The sample that we used for the analysis that draws on the TLSS2-X survey includes individuals born between 1959 and 1993, who were aged between 15 and 49 years old in 2008. These individuals could have been between nought and 24 years old during the earlier years of the conflict (1975–79 and 1983) and between four and 40 years old during the 1999 violence. Therefore, in our empirical specification we allow for exposure to both peaks of the conflict at different ages from birth to 40 years old. Our specific interest, as explained in the introduction, lies in looking at the effect of conflict exposure between the ages of six and 24 years old, breaking down the age groups between school years (six to 14) and youth (15 to 24).[15]

Our main empirical specification is the following:

$$Y_{icj} = \beta_a (exposure\ to\ earlier\ years\ of\ conflict)_{cj} + \beta_b (exposure\ to\ 1999\ violence)_{cj} + \alpha_c + \lambda_j + \gamma_{cj} + e_{icj}$$

where Y_{icj} is the outcome for individual i born in year c and in district j. The main variables of interest $(exposure\ to\ earlier\ years\ of\ conflict)_{cj}$ and $(exposure\ to\ 1999\ violence)_{cj}$ are specified as the interaction term $(conflict\ district)_j \times (conflict\ cohort)_c$ where each of these terms differ depending on the timing of the conflict (earlier years of the conflict or 1999 violence). The coefficients β_a and β_b vary with the age at which the individuals were exposed, respectively, to the earlier years of the conflict (1975–79 and 1983) and to the last wave of violence in 1999. Our main specification uses binary violence exposure terms.[16] All standard errors are clustered at the year of birth times district of birth levels. Furthermore, α_c, λ_j, and γ_{cj} are respectively year of birth and district of birth[17] fixed effects, and district time trends.

This empirical strategy is based on the identifying assumption that no systematic relationship exists between the intensity of the violence across districts and pre-conflict outcomes levels at the district level. The existence of time-varying unobservables that are correlated with both the outcome and the conflict variables would bias our results. We have discussed this issue extensively in Justino, Leone and Salardi (2014) and refer to that discussion to validate our empirical strategy.[18] The inclusion of district fixed effects accounts for time-invariant differences in outcome levels across districts. By including district-specific time trends we account for any time-varying characteristics in a given district.

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[14] For certain outcomes information is available only for individuals born up to 1990.

[15] We also investigate the effects of exposure to the conflict earlier in life, referring to the vast literature that documents how shocks that occur early in a person's life may manifest effects much later. However, for the purpose of this analysis we deem that exposure earlier in life is not central to our analysis, hence our focus on school and youth years.

[16] We have also estimated a specification that uses the continuous conflict exposure measures as explained above. Results remain mostly consistent to our main specification and are available upon request. See discussion in Justino, Leone and Salardi (2014) for the use of a binary violence measure in place of a continuous one in this context.

[17] District of residence for TLDHS 2009 data.

[18] In Justino, Leone and Salardi (2014) we discuss two of the most common unobservables in this literature (i.e. household's level of support for armed groups and the level of control of different armed factions) and how our estimates could change if we did not properly account for them. Our empirical strategy, however, controlled for most of the variation in these potentially unobserved variables.

4   Results

Each table shows the results with the age breakdown six to 14 and 15 to 24; and also results that aggregate the age groups to one group only, six to 24.[19]

Decision-making within the household. Column 1 of Table 4.1 mostly shows a positive effect of exposure to the earlier years of the conflict on the number of decisions that a woman makes alone within the household (the coefficient of exposure at six to 14 years old is only weakly significant). There does not seem to be any effect of exposure to the 1999 violence on women's decision-making within the household (though the sign is negative).

Column 2 of Table 4.1 shows that early conflict exposure decreases the number of decisions taken jointly by men and women. This is consistent with the positive sign found for the number of decisions taken by women alone.

Table 4.1   Decision-making within the household

	(1) Number of decisions taken alone	(2) Number of decisions taken jointly	(3) Number of decisions taken alone	(4) Number of decisions taken jointly
Exposure to earlier years of conflict at ages 6–14	0.084* (0.045)	–0.113** (0.047)		
Exposure to earlier years of conflict at ages 15–24	0.010 (0.067)	–0.009 (0.080)		
Exposure to 1999 violence at ages 6–14	–0.044 (0.119)	0.123 (0.139)		
Exposure to 1999 violence at ages 15–24	–0.033 (0.084)	0.046 (0.098)		
Exposure to earlier years of conflict at ages 6–24			0.079 (0.051)	–0.123** (0.052)
Exposure to 1999 violence at ages 6–24			–0.026 (0.081)	0.023 (0.097)
Year of birth fixed effects	Yes	Yes	Yes	Yes
District of birth fixed effects	Yes	Yes	Yes	Yes
District time trends	Yes	Yes	Yes	Yes
Observations	7877	7877	7877	7877
R-squared	0.212	0.198	0.212	0.198
Mean dependent variable	1.29	2.31		
Std dev dependent variable	1.09	1.28		

Notes: Robust standard errors in parenthesis, clustered at the year of birth x district of birth level. The sample includes women born 1959–1995 (aged 15–49 in 2009–10). District time trends are defined by an interaction between district dummies and birth year. *$p<0.10$,**$p<0.05$,***$p<0.01$.

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[19] In some estimates the coefficients on exposure at six to14 and 15 to 24 are not statistically different from each other. For this reason we have also estimated the model by pooling the age groups.

Participation in community decision-making. Table 4.2 shows that exposure to the earlier years of the conflict increases women's attendance at community decision-making meetings (column 1) and women's involvement in community decision-making. More specifically, a one standard deviation increase in exposure to the earlier years of the conflict between the ages of six and 14 years old increased women's attendance by 7 percentage points (which represents the 15 per cent of the mean and 0.15 standard deviations). Exposure to the 1999 violence does not seem to show any significant effect for the women's sample (though the signs are still positive).

Table 4.2   Decision-making within communities

	(1) Attended meeting in past 12 months	(2) Involved in decision-making in past 12 months	(3) Attended meeting in past 12 months	(4) Involved in decision-making in past 12 months
Exposure to earlier years of conflict at ages 6–14	0.154* (0.089)	0.134 (0.090)		
Exposure to earlier years of conflict at ages 15–24	0.139 (0.139)	0.050 (0.137)		
Exposure to 1999 violence at ages 6–14	0.109 (0.244)	0.044 (0.247)		
Exposure to 1999 violence at ages 15–24	0.142 (0.135)	0.110 (0.137)		
Exposure to earlier years of conflict at ages 6–24			0.108 (0.098)	0.105 (0.101)
Exposure to 1999 violence at ages 6–24			0.167 (0.133)	0.141 (0.134)
Year of birth fixed effects	Yes	Yes	Yes	Yes
District of birth fixed effects	Yes	Yes	Yes	Yes
District time trends	Yes	Yes	Yes	Yes
Observations	596	596	596	596
R-squared	0.111	0.112	0.107	0.110
Mean dependent variable	0.50	0.50		
Std dev dependent variable	0.50	0.50		

Notes: Robust standard errors in parenthesis, clustered at the year of birth x district of birth level. Individuals born 1959–1990 (aged 18–49 in 2007-08). District time trends are defined by an interaction between district dummies and birth year. *p<0.10,**p<0.05,***p<0.01.

Domestic violence. Column 2 of Table 4.3 shows that exposure to the earlier years of the conflict decreases the incidence of domestic violence. More specifically, a one standard deviation increase in exposure to the earlier years of the conflict aged between 15 and 24 years old results in a decrease in the probability of being a victim of domestic violence of 3 percentage points, which is 8 per cent of the mean and 0.06 standard deviations. This negative sign is mostly visible when we look at whether a woman has been a victim of physical violence (Table 4.4). This result is consistent with the fact that physical violence is the most prevalent form of domestic violence in our sample (more than 30 per cent, see Table 2.1). The signs turn positive for the 1999 violence exposure with the effect being stronger for women exposed at ages six to 14 than at 15 to 24 years old.

Table 4.3   Domestic violence

	(1) Ever been a victim of violence since age 15	(2) Any violence in past 12 months	(3) Ever been a victim of violence since age 15	(4) Any violence in past 12 months
Exposure to earlier years of conflict at ages 6–14	–0.022 (0.050)	–0.058 (0.049)		
Exposure to earlier years of conflict at ages 15–24	–0.095 (0.071)	–0.110* (0.064)		
Exposure to 1999 violence at ages 6–14	0.135 (0.116)	0.140 (0.116)		
Exposure to 1999 violence at ages 15–24	0.090 (0.073)	0.079 (0.073)		
Exposure to earlier years of conflict at ages 6–24			–0.024 (0.047)	–0.059 (0.044)
Exposure to 1999 violence at ages 6–24			0.083 (0.070)	0.067 (0.070)
Year of birth fixed effects	Yes	Yes	Yes	Yes
District of birth fixed effects	Yes	Yes	Yes	Yes
District time trends	Yes	Yes	Yes	Yes
Observations	2162	2162	2162	2162
R-squared	0.172	0.163	0.171	0.162
Mean dependent variable	0.36	0.35		
Std dev dependent variable	0.48	0.48		

Notes: Robust standard errors in parenthesis, clustered at the year of birth x district of birth level. The sample includes women born 1959–1995 (aged 15–49 in 2009–10). District time trends are defined by an interaction between district dummies and birth year. *p<0.10, **p<0.05,***p<0.01.

Table 4.4   Physical violence in the past 12 months

	(1) Any less severe physical violence in past 12 months	(2) Any severe physical violence in past 12 months	(3) Any less severe physical violence in past 12 months	(4) Any severe physical violence in past 12 months
Exposure to earlier years of conflict at ages 6–14	–0.019 (0.046)	–0.027 (0.022)		
Exposure to earlier years of conflict at ages 15–24	–0.104* (0.060)	–0.071* (0.037)		
Exposure to 1999 violence at ages 6–14	0.177* (0.106)	0.154** (0.064)		
Exposure to 1999 violence at ages 15–24	0.082 (0.065)	0.088** (0.044)		
Exposure to earlier years of conflict at ages 6–24			–0.003 (0.040)	–0.015 (0.024)
Exposure to 1999 violence at ages 6–24			0.059 (0.063)	0.072* (0.043)
Year of birth fixed effects	Yes	Yes	Yes	Yes
District of birth fixed effects	Yes	Yes	Yes	Yes
District time trends	Yes	Yes	Yes	Yes
Observations	2162	2162	2162	2162
R-squared	0.169	0.215	0.168	0.213
Mean dependent variable	0.32	0.09		
Std dev dependent variable	0.47	0.29		

Notes: Robust standard errors in parenthesis, clustered at the year of birth x district of birth level. The sample includes women born 1959–1995 (aged 15–49 in 2009–10). District time trends are defined by an interaction between district dummies and birth year. *p<0.10, **p<0.05, ***p<0.01.

Attitudes towards wife-beating. Exposure to the earlier years of the conflict is associated with increases in the probability that women justify wife-beating (column 1 of Table 4.5). These positive coefficients are also visible in column 2 of Table 4.5. The effect of the 1999 violence on attitudes towards wife-beating is not statistically significant.

Table 4.5   Attitudes toward wife-beating

	(1) Wife-beating justified	(2) Number of reasons wife-beating justified	(3) Wife-beating justified	(4) Number of reasons wife-beating justified
Exposure to earlier years of conflict at ages 6–14	0.043*** (0.016)	0.172*** (0.065)		
Exposure to earlier years of conflict at ages 15–24	0.057** (0.022)	0.203** (0.103)		
Exposure to 1999 violence at ages 6–14	–0.041 (0.043)	–0.108 (0.184)		
Exposure to 1999 violence at ages 15–24	–0.027 (0.030)	–0.071 (0.120)		
Exposure to earlier years of conflict at ages 6–24			0.031* (0.017)	0.103 (0.073)
Exposure to 1999 violence at ages 6–24			–0.021 (0.030)	–0.049 (0.113)
Year of birth fixed effects	Yes	Yes	Yes	Yes
District of birth fixed effects	Yes	Yes	Yes	Yes
District time trends	Yes	Yes	Yes	Yes
Observations	13137	13137	13137	13137
R-squared	0.213	0.157	0.212	0.157
Mean dependent variable	0.24	2.89		
Std dev dependent variable	0.43	1.67		

Notes: Robust standard errors in parenthesis, clustered at the year of birth x district of birth level. The sample includes women born 1959–1995 (aged 15–49 in 2009–10). District time trends are defined by an interaction between district dummies and birth year. *p<0.10, **p<0.05, ***p<0.01.

Attitudes towards refusing sex. Results in column 1 of Table 4.6 show that exposure to the earlier years of the conflict increases the probability of women saying that refusing sex is justified. In contrast, exposure to the 1999 violence exhibits the opposite sign. These results are supported by the results in column 2 of the same table.

Table 4.6   Attitudes toward refusing sex

	(1) Refusing sex justified	(2) Number of reasons for which refusing sex is justified	(3) Refusing sex justified	(4) Number of reasons for which refusing sex is justified
Exposure to earlier years of conflict at ages 6–14	0.066*** (0.019)	0.146*** (0.040)		
Exposure to earlier years of conflict at ages 15–24	0.052* (0.032)	0.220*** (0.070)		
Exposure to 1999 violence at ages 6–14	–0.079* (0.048)	–0.100 (0.113)		
Exposure to 1999 violence at ages 15–24	–0.087*** (0.030)	–0.201*** (0.073)		
Exposure to earlier years of conflict at ages 6–24			0.087*** (0.020)	0.168*** (0.045)
Exposure to 1999 violence at ages 6–24			–0.093*** (0.029)	–0.246*** (0.070)
Year of birth fixed effects	Yes	Yes	Yes	Yes
District of birth fixed effects	Yes	Yes	Yes	Yes
District time trends	Yes	Yes	Yes	Yes
Observations	13137	13137	13137	13137
R-squared	0.270	0.236	0.270	0.236
Mean dependent variable	0.52	2.02		
Std dev dependent variable	0.50	1.18		

Notes: Robust standard errors in parenthesis, clustered at the year of birth x district of birth level. The sample includes women born 1959–1995 (aged 15–49 in 2009–10). District time trends are defined by an interaction between district dummies and birth year. *$p<0.10$, **$p<0.05$, ***$p<0.01$.

Education outcomes. We analysed whether the conflict affected educational attainment. Column 1 of Table 4.7 does not show any effect of exposure to conflict on the years of education attained by women. However, column 2 shows that exposure to the earlier years of the conflict increased the probability that women completed at least primary education levels. There does not seem to be any effect if we look at the probability of having completed secondary education only (column 3).

Table 4.7   Education outcomes

	(1) Years of education	(2) Completed primary education (or more)	(3) Completed secondary education (or more)	(4) Years of education	(5) Completed primary education (or more)	(6) Completed secondary education (or more)
Exposure to earlier years of conflict at ages 6–14	0.114 (0.206)	0.040* (0.020)	0.014 (0.019)			
Exposure to earlier years of conflict at ages 15–24	–0.197 (0.308)	–0.028 (0.028)	–0.006 (0.027)			
Exposure to 1999 violence at ages 6–14	0.853 (0.652)	0.057 (0.055)	0.075 (0.061)			
Exposure to 1999 violence at ages 15–24	0.318 (0.411)	0.037 (0.036)	0.027 (0.038)			
Exposure to earlier years of conflict at ages 6–24				0.102 (0.230)	0.047** (0.022)	0.012 (0.022)
Exposure to 1999 violence at ages 6–24				0.111 (0.389)	0.030 (0.033)	0.008 (0.036)
Year of birth fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
District of birth fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
District time trends	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13137	13137	13137	13137	13137	13137
R-squared	0.236	0.226	0.221	0.236	0.226	0.221
Mean dependent variable	6.50	0.70	0.46			
Std dev dependent variable	5.60	0.46	0.50			

Notes: Robust standard errors in parenthesis, clustered at the year of birth x district of birth level. The sample includes women born 1959–1995 (aged 15–49 in 2009–10). District time trends are defined by an interaction between district dummies and birth year. *p<0.10, **p<0.05, ***p<0.01.

Occupation outcomes. We looked at whether the conflict affected women's level of work participation and other occupational outcomes. Table 4.8 does not show any effect on women's work participation (though signs are negative) brought about by exposure either to the earlier years of the conflict or to the 1999 violence. We note a weakly significant negative sign on the work participation of men exposed to the 1999 violence.

We then analysed whether the conflict affected the type of occupation undertaken by women. For this purpose we selected the sample of women that had worked in the past 12 months and looked at whether the conflict affected the probability of their working for someone else (as defined in section 3) and the probability of working for cash. Column 2 of Table 4.8 shows that exposure to the earlier years of the conflict between the ages of 15 and 24 years old decreases the probability that women would work for someone else. Exposure to the violence of 1999 does not seem to affect the probability of women working for someone else. Consistently we found that exposure to the earlier years of the conflict reduces the probability of women working for cash (column 3 of Table 4.8), though the coefficient is only weakly significant.

Table 4.8   Work participation outcomes

	(1) Work in past 12 months	(2) Work for someone else	(3) Work for pay (in cash or in kind)	(4) Work in past 12 months	(5) Work for someone else	(6) Work for pay (in cash or in kind)
Exposure to earlier years of conflict at ages 6–14	–0.001 (0.020)	–0.033 (0.021)	–0.045* (0.023)			
Exposure to earlier years of conflict at ages 15–24	–0.013 (0.033)	–0.073*** (0.027)	–0.030 (0.026)			
Exposure to 1999 violence at ages 6–14	–0.077 (0.055)	–0.011 (0.060)	–0.030 (0.063)			
Exposure to 1999 violence at ages 15–24	–0.007 (0.036)	–0.005 (0.037)	–0.026 (0.039)			
Exposure to earlier years of conflict at ages 6–24				–0.007 (0.022)	–0.028 (0.023)	–0.039 (0.026)
Exposure to 1999 violence at ages 6–24				0.022 (0.034)	0.000 (0.036)	–0.026 (0.036)
Year of birth fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
District of birth fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
District time trends	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13131	5422	5422	13131	5422	5422
R-squared	0.198	0.121	0.133	0.197	0.120	0.133
Mean dependent variable	0.41	0.13	0.18			
Std dev dependent variable	0.49	0.33	0.38			

Notes: Robust standard errors in parenthesis, clustered at the year of birth x district of birth level. The sample includes women born 1959–1995 (aged 15–49 in 2009–10). District time trends are defined by an interaction between district dummies and birth year. *$p<0.10$, **$p<0.05$, ***$p<0.01$.

Health. Table 4.9 shows that exposure to the earlier years of the conflict increases height, while the 1999 violence exposure decreases it.

Table 4.9   Health outcomes

	(1) Height	(2) Height
Exposure to earlier years of conflict at ages 6–14	0.211 (0.271)	
Exposure to earlier years of conflict at ages 15–24	–0.100 (0.410)	
Exposure to 1999 violence at ages 6–14	–0.374 (0.705)	
Exposure to 1999 violence at ages 15–24	–0.740 (0.488)	
Exposure to earlier years of conflict at ages 6–24		0.487* (0.290)
Exposure to 1999 violence at ages 6–24		–0.915* (0.467)
Year of birth fixed effects	Yes	Yes
District of birth fixed effects	Yes	Yes
District time trends	Yes	Yes
Observations	12878	12878
R-squared	0.082	0.082
Mean dependent variable	150.26	
Std dev dependent variable	5.61	

Notes: Robust standard errors in parenthesis, clustered at the year of birth x district of birth level. The sample includes women born 1959–1995 (aged 15–49 in 2009–10). District time trends are defined by an interaction between district dummies and birth year. *p<0.10, **p<0.05, ***p<0.01.

Fertility and marriage. Looking at the women's sample, we find that exposure to the earlier years of the conflict increases the total number of children they gave birth to (column 1 of Table 4.10). We find that exposure to the 1999 violence decreases total fertility for the sample of women (though this effect is only significant at 10 per cent). Exposure to the earlier years of the conflict or to the 1999 violence does not seem to affect the age at which the women had their first child (column 2). We also look at whether the conflict affected the age at which they first married. Column 3 of Table 4.10 shows that exposure to the earlier years of the conflict increases the age at first marriage if women were exposed to it between the ages of 15 and 24, but we do not see any significant effect caused by exposure to the 1999 violence.

Table 4.10 Fertility and marriage outcomes

	(1) Total number of children given birth to	(2) Age at birth of first child	(3) Age at first marriage	(4) Years of education	(5) Total number of children given birth to	(6) Age at birth of first child
Exposure to earlier years of conflict at ages 6–14	0.264** (0.113)	–0.235 (0.210)	0.053 (0.212)			
Exposure to earlier years of conflict at ages 15–24	0.110 (0.191)	0.505 (0.340)	0.828** (0.346)			
Exposure to 1999 violence at ages 6–14	–0.023 (0.257)	–0.238 (0.566)	–0.146 (0.550)			
Exposure to 1999 violence at ages 15–24	–0.204 (0.176)	0.145 (0.381)	0.076 (0.364)			
Exposure to earlier years of conflict at ages 6–24				0.292** (0.122)	–0.313 (0.199)	–0.098 (0.205)
Exposure to 1999 violence at ages 6–24				–0.276* (0.160)	0.190 (0.360)	0.086 (0.342)
Year of birth fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
District of birth fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
District time trends	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13137	7969	8431	13137	7969	8431
R-squared	0.606	0.127	0.115	0.606	0.126	0.114
Mean dependent variable	2.74	21.19	19.92			
Std dev dependent variable	2.99	4.20	4.28			

Notes: Robust standard errors in parenthesis, clustered at the year of birth x district of birth level. The sample includes women born 1959–1995 (aged 15–49 in 2009–10). District time trends are defined by an interaction between district dummies and birth year. $*p<0.10$, $**p<0.05$, $***p<0.01$.

5   Discussion and conclusions

This paper analysed the medium and long-term effects of the Timor Leste conflict on a set of women's empowerment indicators. More specifically, we looked at the separate effects of exposure to the earlier years of the conflict and to the 1999 violence on decision-making outcomes within the household and the community, on the incidence of domestic violence and on attitudes towards it. We also investigated the effects on additional empowerment indicators.

The results suggest that the effects of exposure to the earlier years of the conflict and to the 1999 violence differed across all dimensions analysed. This is expected given the very different nature of these two peaks of violence, as discussed in Section 2. Overall, the longer exposure to violence and protracted conflict during the earlier years of the Indonesian occupation appears to have left a long-lasting legacy among those affected. The effects of the 1999 violence are more sporadic. This may also be due to the fact that we have only been able to assess the medium-term effects of this last wave of violence (ten years after the war ended) which may eventually manifest stronger long-term consequences.

We found evidence that women exposed to the earlier years of the conflict experience less domestic violence and feel more justified to refuse sex with their partner. However, exposure to the earlier years of the conflict is also associated with women being more likely to justify wife-beating which is somehow a contradictory result. We will explore this finding further in our future work. One reason for the apparent contradiction might be that the attitudes questions have been asked to all women in the sample. On the contrary, questions on domestic violence have been asked only to the sample of women who were/had been married. In our future work we will explore whether our results change depending on women's marriage status.

In contrast to exposure to the earlier years of the conflict, exposure to the 1999 violence has resulted in an increase in domestic violence, and a reduction in the proportion of those that reply that refusing sex is justified.

Moreover, women exposed to the earlier years of the Indonesian occupation also show a higher decision-making power within the household and higher participation in community decision-making. On the contrary, we did not see any effect of the 1999 violence on women's participation in decision-making within the household and the community. The effects on other outcomes are either zero or only weakly significant (with the signs mostly opposite to those on exposure to the earlier years of the conflict). This suggests that the 1999 violence may have led to less lingering effects due to its own short-term nature.

More broadly, these results suggest that women exposed to the earlier years of the conflict exhibit a higher degree of empowerment according to some indicators but not to others. We saw women are more empowered in terms of a reduced incidence of domestic violence, a lower acceptance of it (though the contradictory results on acceptance of wife-beating will need more investigation) and greater participation in decision-making within and outside the household.

This higher level of empowerment may be driven partly by a change in attitudes and also by the higher level of education that women exposed to the earlier years of the conflict seem to manifest several years after the conflict ended. However, the results in terms of occupational outcomes and fertility are not consistent with a high women's educational attainment as, based on the latter, we would have expected that women would have shown lower fertility, higher work participation and higher participation in paid jobs. So women exposed to the earlier years of the conflict do not appear to be more economically or reproductively empowered than those not exposed to it. This may well be explained by two reasons: the

state of the economy of post-war Timor Leste, where jobs have been scarce and mainly in subsistence agriculture, and the fact that women may have decided to have more children and earlier as a compensatory mechanism. We will explore these possibilities further in future work.

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