
Measuring Violent Conflict in Micro-level Surveys: Current Practices and Methodological Challenges

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This paper reviews current practices and common challenges in the measurement of the causes, functioning, and consequences of violent conflict at the micro-level. We review existing conflict- and violence-related survey questionnaires, with a particular focus on the World Bank's Living Standard Measurement Surveys. We discuss methodological challenges associated with empirical work in conflict-affected and fragile areas—such as operationalizing a definition of conflict, using the appropriate units of analysis, deciding on the timing of the survey, dealing with data biases, and conducting surveys in an ethically sound manner under conditions of insecurity—and propose ways to improve the usefulness of existing surveys to analyze conflict processes at the micro-level. Violent conflict, households, survey methods, questionnaire design. JEL codes: C81, D74, F52, O12

Introduction

Analyzing the causes of violent conflict has preoccupied social scientists for a long time. The academic literature on conflict has traditionally had a strong macro perspective, with a focus on understanding the rise of violence against state institutions, and between different ethnic groups (Horowitz 1985; Skaperdas 1992; Collier and Hoeffler 2004; Fearon and Laitin 2003). This literature has led to considerable advances in our knowledge on the complex causes of political violence. It has, however, offered a more limited understanding of the role of the causal mechanisms and micro-level dynamics that may shape the relationship between violent conflict and social, economic, and political outcomes.

The World Bank Research Observer

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doi:10.1093/wbro/lkv011 Advance Access publication August 18, 2015 31:29–58

These concerns have resulted in a growing new research agenda on the micro-level analysis of violent conflict.¹ This emerging body of research has begun to shed light on some of the complex micro-level causes and consequences of violent conflict by generating important theoretical and empirical insights on a number of dimensions of violent conflict processes (see [Justino 2012](#) for a comprehensive review). But despite considerable progress, we still have limited rigorous and comparative evidence of how people live in contexts of violence and conflict, particularly regarding the following issues: what choices they make to secure lives and livelihoods; how institutional structures impact on and are affected by these decisions; or what policies work in establishing peace and supporting economic stability in areas and among populations affected by violent conflict.

This lack of systematic understanding is explained to a large extent by the limited amount of information we currently have on how people live and survive in areas of violent conflict. Over the last three decades The World Bank and other institutions have developed highly sophisticated surveying techniques, most notably the Living Standards Measurement Studies (LSMS), to collect socio-economic data at the micro-level. These advances in data collection have led to a wealth of knowledge on how individuals, households, and communities live and adapt to a variety of shocks and life events, including price changes, sudden climatic shocks and loss of work, or illness, among others. The impact of political shocks and events such as violent protests, communal riots, revolutions, civil wars, genocide, and international wars, is less-well understood. Several large household surveys conducted in conflict-affected countries such as Nigeria, Indonesia, Colombia, Rwanda, South Africa, Pakistan, and Liberia, only sporadically feature (a limited number of) questions that capture the effects of violence and other forms of political instability and fragility.

The absence of detailed information on how individuals, households, and communities experience violent conflict means that researchers typically rely on crude proxies of conflict (often whether dwellings have been destroyed, the number of deaths in the household and whether the households has ever been displaced), which makes it hard to build a systematic and comparable understanding of how processes of violence and insecurity have affected different people and communities, the channels through which violence may affect welfare and behavior at the micro-level, and how violent conflicts may transform societies, politics, and local economies.

The objectives of this paper are to review current empirical research on conflict processes at the micro-level, discuss the methods used to empirically capture such processes, and suggest potential advances to current survey methodologies. The paper is organized as follows. In the following section, we review current survey practices in conflict-affected contexts, paying close attention to recent academic literature that makes use of quasi-standardized institutional surveys, such as The World Bank's LSMS. In the subsequent section we discuss recent studies based on surveys purposely designed to investigate conflict processes, and reflect on

common methodological challenges related to the design, implementation, and analysis of micro survey data in conflict-affected contexts. The final section concludes by discussing ways forward to improve methodologies for data collection at the micro-level in conflict-affected contexts.

Current Empirical Approaches to Understanding Conflict at the Micro Level

Social scientists have used a variety of empirical methods to study the impact of violent conflict on human welfare and behavior. Recent advances have been possible thanks to the wider availability of rigorous evidence from conflict-affected contexts. This new empirical research has developed in two broad directions (see [Verwimp, Justino, and Brück 2009](#), and [Justino, Brück, and Verwimp 2013](#)). The most common direction has been the use of socio-economic datasets in conflict-affected regions that were not explicitly collected for the analysis of processes or consequences of violent conflict per se, but either contain a number of variables (often self-reported) that can be used as proxies for human exposure to violent conflict, or can be creatively merged with conflict event data. The second direction is based on data specifically collected to identify the causes and functions of violent conflict at the micro-level. This is the ideal approach because it allows researchers to tailor the surveys to directly address important research questions about different aspects of conflict processes, their causes, and their consequences. It is, however, a less common approach due to the high costs of these surveys, the level of resources required, and the ethical and security constraints associated with doing primary research in areas of violence. In this section we review recent studies based on existing socio-economic surveys that were not conducted to analyze conflict processes, but have been used to generate important insights on conflict processes and its welfare outcomes. We focus on studies that have used the widely available LSMS conducted by the World Bank and partners, and national census data and the Demographic and Health Surveys (DHS). We also discuss these studies' insights and propose ways in which the surveys could be improved in order to advance knowledge on conflict processes. We discuss the purposively designed survey approaches in the methodology section.

Using Living Standards Measurement Surveys to Understand Conflict Processes

The LSMS, implemented by the World Bank, aims to provide high quality data for policy makers to assess the effectiveness of interventions designed to improve the

living standards of individuals, households, and communities in countries where they are conducted. Micro-level empirical research on the effects of conflict and violence has made use of several of these surveys.

The main advantage of the LSMS is their comprehensive treatment of household welfare, and how they detail topics such as household demographics, income, health, labor, and education. However, these surveys are primarily designed to be conducted in peaceful contexts and often neglect to explicitly address violent conflict as a category in its own right, even when they are implemented in countries affected by conflict.² The LSMS are also designed to meet the needs of governments, who sometimes wish to avoid referring to the conflict in an effort to start afresh. As a result, questionnaires may focus on the experiences and the standards of living after, rather than during, the conflict. Some questions about conflict may also be politically sensitive and government officials may be apprehensive about including them in household surveys. For example, questions about the destruction or theft of assets that identify the perpetrators, especially if government forces are included in the list, may raise controversial or even legal issues for government administrations. Likewise, government-sponsored surveys may avoid addressing the conflict in formerly rebel-held territories for fear of invoking distrust or upsetting a delicate peace settlement. As a result, some questions that are relevant for researchers may be left out in government-sponsored questionnaires.

Several LSMS have nonetheless included conflict-related questions and yielded important insights for conflict research. In other cases, researchers have been able to match the information in these surveys to external conflict event datasets in order to design identification strategies that allow the causal analysis of conflict effects on individuals, households, and communities. For this paper we reviewed 24 of these surveys and analyzed their structure and content.³ In general, we found that including conflict questions in LSMS has been done in a piecemeal fashion, resulting in insights scattered across countries and categories rather than a systematic and comparative approach to measuring conflict. But we also found good examples of conflict-sensitive questions across these surveys that have resulted in important new knowledge on the impact of conflict on the lives and livelihoods of people in areas of violence. These studies have led to significant advances in our understanding of the causal impact of violent conflict on key aspects of people's lives, including dynamics of poverty and food security, education and health, livelihood choices, labor supply decisions, intra-household decisions, and individual, household, and group behavior. We provide a summary of existing socio-economic surveys with conflict related questions in Appendix I, and in Appendix II summarize studies (and their main findings) that have used LSMS (and DHS) to understand conflict processes.

Using other Standardized Household Surveys and National Census Data

In addition to the LSMS, researchers have leveraged other standardized household surveys and national census data to study conflict processes. For example, [Deininger \(2003\)](#) conducted one of the first micro-level analyses of violent conflict and its consequences using data on communities and households included in the 1999–2000 Uganda National Household Survey (UNHS) and the 1992 Uganda Integrated Household Survey (IHS). These surveys contain information on approximately 10,000 households and 1,000 communities. The surveys asked respondents questions related to the civil war, including information on victimization and motivations for participation in the war. [Czaika and Kis-Katos \(2009\)](#) have studied the determinants of displacement in Aceh, Indonesia, using the Village Potential Census (PODES), which maps conflict-affected villages across the whole of Indonesia. The census itself includes questions, posed to community leaders, on conflict events in particular communities. [Rohner, Thoenig and Zilibotti \(2012\)](#) have matched two waves of the Afrobarometer survey, a widely available socio-economic survey, to the ACLED dataset in order to investigate the effect of the conflict in Northern Uganda on social capital.^{4,5}

[Verpoorten \(2011\)](#) demonstrates how to use widely available census data to indirectly measure conflict mortality. Census data is generally quite comprehensive and includes mortality information on victims targeted by all combatant parties, those dying in both large and small events, those in both remote and accessible areas, as well as direct and indirect mortality levels. Census data has also been used in [Weidmann \(2009\)](#), who combined the Bosnian census with the ACLED conflict database to determine how conflict affects ethnic population concentration.

Some researchers have uncovered important insights into the human capital effects of violent conflict through the creative use of historical datasets. One good example is [Akbulut-Yuksel \(2009\)](#), which shows how a unique data-set on city-level destruction in Germany caused by Allied Air Forces bombing during World War II can provide far-reaching insights when combined with a socio-economic panel. This is one of the first studies to capture the long-term human capital effects of violent conflict across several generations. Historical archives and surveys of survivors have been used recently by political scientists to examine the long-term social and political legacies of the internal conflict in Greece in the 1940s ([Kalyvas 2006](#)) and the Spanish Civil War ([Balcells 2012](#)).

Using Demographic and Health Surveys (DHS) to Identify the Human Capital Effects of Violent Conflict

Demographic and Health Surveys (DHS) are specialized surveys designed to monitor health, fertility, and mortality outcomes in several developing countries. Although

these surveys often lack information on conflict and violence—even when conducted in conflict-affected countries—several studies have leveraged them to analyze the demographic, health, and education effects of violent conflict. The methodologies followed are similar to those used with the LSMS. For instance, [Bundervoet \(2009\)](#) investigated the profile of victims of the 1993 killings in Burundi using the United Nations Population Fund (UNFPA) demographic survey conducted in Burundi in 2002. [Verwimp and Van Bavel \(2014\)](#) have used the same survey to study the effect of conflict in Burundi on the gender-gap in primary school completion. [De Walque and Verwimp \(2010\)](#) used Rwandan DHS data from 2000 and 1992 to estimate excess mortality in the 1994 genocide. [De Walque \(2004\)](#) made use of the DHS to assess the long-term impacts of the Cambodian genocide during the Khmer Rouge period. [Schindler and Brück \(2011\)](#) used DHS data to assess the effects of the genocide on (replacement) fertility in Rwanda. The potential of DHS in conflict research remains, however, largely underexploited.

Responding to Challenges in the Use and Design of Standard Surveys

Researchers have made use of existing socio-economic datasets collected for purposes other than conflict research by creatively using occasional questions related to conflict or by merging them with conflict event data. This approach makes good use of existing data and has provided valuable insights on the effect of conflict on socio-economic outcomes at the micro level. However, these studies face important shortcomings. Most notably, studies that rely on existing surveys that were not purposively designed to understand conflict processes—as is the case with most of the current literature—are generally based on an ad-hoc treatment of conflict, typically based on a limited number of self-reported indicators of household exposure to violence.

These shortcomings can be mitigated through the use of high-quality event datasets, as demonstrated in several studies discussed above. The main downside of this approach is that matching datasets may be difficult, either because names of locations or identities of respondents cannot be reconstructed, or because researchers are not able to access that information for confidentiality reasons. However, given the many security, financial, and human resources trade-offs faced by researchers working on violent conflict at the micro-level, large institutionalized socio-economic surveys will often be the best option for gathering conflict research information. A question remains: Can these surveys be improved in ways that will advance research and knowledge on conflict processes at the micro-level?

Below we suggest a number of guidelines to improve the sensitivity of future standard socio-economic surveys conducted in conflict-affected contexts. We propose four ways in which these surveys could be adapted to capture more accurately

conflict-related events: (i) allow respondents to self-report on conflict events more comprehensively by including conflict-related scenarios in answer categories; (ii) record the timing of events; (iii) be sensitive to the type and intensity of violence; and (iv) include conflict questions across several survey sections and include a range of conflict-related choices in answer categories. We have used these guidelines elsewhere to construct the “Conflict Exposure Module” to be inserted in existing socio-economic surveys conducted in conflict-affected countries.⁶

Respondent Self-reporting

Asking respondents to self-report on how conflict has affected them is a straightforward way to learn more about conflict dynamics. Too few existing socio-economic surveys extend answer choices to give respondents the opportunity to explain how different dimensions of the conflict may have affected them. For example, the LSMS conducted in Tajikistan 2007 asked respondents why they did not work in the past 14 and 30 days. This question could be modified to provide a better understanding of conflict effects by including answer options such as “lack of security” or “disability due to violence”. The 2006 Iraq LSMS is one example where the effect of conflict on income is addressed by including answer options that point to “security” and “handicaps” as reasons for inability to work. These categories could be made more comprehensive by including a broader range of conflict-related scenarios, such as discrimination, crime, destruction of assets, disappearance of key markets, or military service.

The use of self-reported information has experienced setbacks. Self-reported answers are highly subjective and may introduce biases because respondents may erroneously recall the reasons why they made certain decisions. In situations as intense as conflict, respondents may construct a narrative that gives disproportionate weight to extraordinary and memorable experiences. Respondents may also be unable to distinguish between ultimate and proximate causes. Despite these potential limitations, including conflict-related scenarios in the answer categories of questions routinely asked in large socio-economic surveys would be a cost-efficient way of adapting existing surveys to better understanding conflict contexts. Some of these issues may be solved through econometric techniques such as the use of instrumental variables.

Sensitivity to the Timing of Events

In several of the studies we reviewed for this paper, carefully recorded information on when events occurred has allowed researchers to match socio-economic outcomes to conflict events. However, few socio-economic surveys in conflict-affected areas record time information systematically. Detailed time information would allow researchers to know whether events occurred before, after, or during a

conflict, and therefore capitalize on conflict event databases that provide a localized history of conflict events. Examples include time information on when household members left or joined their families, when income, asset, and food consumption losses occurred, when coping measures were introduced, when harm was inflicted, and when people were displaced or migrated.

Researchers may also be able to construct localized conflict timelines by recording dates of major conflict events and allowing respondents to describe when an event occurred in reference to these timelines. This usually requires researchers to establish a local conflict event timeline beforehand, preferably with the aid of an initial community questionnaire. Respondents would then be able to remember whether specific events in their lives may have occurred in relation to, for instance, major attacks or other easily recalled events. The overarching goal of being time sensitive is to align respondents' answers to major changes in the conflict's dynamics, rather than produce a precise chronology. Existing socio-economic surveys can be adapted without adding substantial extra costs by introducing questions that capture the timing of events.

Sensitivity to the Type and Intensity of Violence

Micro-level surveys in conflict-affected areas could be more sensitive to different modalities of violence that take place during violent conflicts. Each conflict creates its own hardships, which local populations feel acutely. Measuring how much people suffer is important for determining the sources of acute hardship and the type of violence borne by the population. For example, respondents in Angola suffered physical injuries from the widespread use of land mines, while Palestinians have suffered losses of income from the difficulty of moving through checkpoints. Further, Congolese families are ripped apart because of the widespread use of rape and sexual violence. Sensitivity to the type and intensity of violence requires answer categories to go beyond simple binary variables by including a range of responses at different levels of intensity.

Comprehensiveness

Overall, surveys could be more comprehensive in relation to conflict-related events by covering a broad range of channels whereby conflict may affect both lives and livelihoods. While LSMS are by their nature very comprehensive, conflict-sensitive questions are often left out of many modules. Surveys that focus too narrowly on select categories may fail to account for the multi-dimensional impact of violent conflicts. In order to address this issue, socio-economic surveys could include conflict-related questions across their various sections on demographics, economic welfare, coping

activities, health, migration, education, perceptions of security, life satisfaction, and expectations.⁷

Not all existing socio-economic surveys will be able to follow these guidelines at all times given the number of financial, political, and logistical tradeoffs they may entail. However, more investment in the development of appropriate methodological systems may lead to considerable advances in gathering rigorous, systematic, and comparable evidence across different conflict-affected contexts. Better knowledge will, in turn, result in better and more effective policy interventions to provide physical and economic security to the millions of men, women, and children that continue to live in persistent cycles of violence and conflict.

Recent Methodological Advances for Surveying in Conflict-affected Areas

Purposely designed studies make up an emerging body of research on the causes and impacts of conflict at the micro level. These studies' great advantage is that they identify and measure conflict directly within the survey questionnaire, allowing researchers to identify more precisely the complex causal mechanisms that shape the relationship between violent conflict and individual, household, and community welfare and behavior. We review here examples from five types of purposely built surveys used in the literature: (i) ex-combatant surveys; (ii) genocide and atrocities surveys; (iii) surveys of displaced populations; (iv) post-conflict reconstruction surveys; and (v) conflict surveys conducted among civilian populations.

Ex-combatant Surveys

Several surveys have been conducted to analyze the experiences of specific population groups living through violent conflict, notably former soldiers and members of rebel movements. Below we discuss four surveys that have developed novel and creative instruments to capture processes of recruitment, armed group support, and combatant-civilian relations.

The Surveys of War Affected Youth (SWAY) in Northern Uganda, conducted by Chris Blattman and Jeannie Annan in 2005 and 2006, have made an important contribution to research on the micro-level effects of violent conflict.⁸ The surveys implemented a novel sampling methodology—employing a technique which the authors define as “retrospective sampling”—that attempted to reconstruct the sample before the conflict took place. This helped the researchers correct for attrition bias resulting from conflict-related deaths or migration. The study also

creatively used culturally specific indicators to measure psychosocial well-being, such as “nightmares and insomnia” or “perceptions of haunting by spirits”. Although culturally-specific, introducing these questions has provided important directions for the collection of hard-to-quantify indicators in survey instruments.

[Humphreys and Weinstein \(2004; 2008\)](#) conducted a novel survey on the motivations of Sierra Leonean ex-combatants for joining and staying with armed groups, and their attitudes towards disarmament, demobilization, and reintegration. In particular, the authors were able to reconstruct time periods within the conflict by asking respondents to recall their geographic location during active participation in armed groups at specific periods during the war. This allowed them to analyze both processes and motivations of recruitment across time. In order to assist recall, the authors constructed a timeline of well-known events and dates and placed individual answers within these different time periods. Another innovative aspect of this survey is the way in which sensitive questions were phrased. In order to avoid respondents feeling compromised by their answers, the survey focused on asking whether respondents observed potentially incriminating events (such as theft, rape, and assault), rather than asking whether respondents perpetrated them personally.⁹ Overall, contrary to established wisdom that portrays ex-combatants in Sierra Leone as motivated by greed and the gains of looting, the survey finds evidence for an array of motivations for joining and staying in armed groups, ranging from fear and forced recruitment, to access to protection and the provision of basic needs.

[Arjona and Kalyvas \(2008\)](#) also studied individual motivations for joining armed groups in Colombia; their survey was conducted among 732 ex-combatants of a leftist guerrilla group and a right-wing paramilitary group. The sampling approach followed in this survey is more challenging than the survey conducted in Sierra Leone due to security concerns in various sampling areas, and the reliance on sample frames drawn exclusively from a national demobilization and reintegration program. These factors have prevented the authors from constructing a representative sample. However, the survey is unique in that it offers extensive information on individual motivations for joining armed groups, as well as on how different armed groups are organized and their relationship with civilian populations, which has allowed a better understanding of how armed groups exercise control of different populations, and how local populations adjust their behavior in the presence of armed groups (see [Arjona 2010](#)).¹⁰

Mvukiyehe, Samii, and Taylor conducted over 3,000 interviews in 2007 among ex-combatants in Burundi, primarily focusing on armed group recruitment. This survey was implemented among combatants and non-combatants in order to identify how experiences of violence differed between the two groups. The survey covers personal experiences of violence, which have not been captured elsewhere, such as physical mistreatment, sexual abuse, or forced labor. This information is important for the design of policy interventions that consider the specific war experiences of combatants.

Genocide and Atrocities Surveys

Genocides are extreme violent events that produce enormous welfare impacts and pose unique challenges for researchers. In this section, we discuss two studies: the Genocide Transition Survey (2000) and the Darfur Refugee Questionnaire (2006).

The Genocide Transition Survey (2000), conducted in Rwanda by Verwimp, is one of the first examples of the potential for panel survey-based research in conflict-affected areas.¹¹ Verwimp tracked the fate of household members who had been interviewed in a nationwide agricultural survey prior to the 1994 genocide. In addition to important insights into the profiles of perpetrators (Verwimp 2005) and victims (Verwimp 2003b) of the 1994 genocide in Rwanda, this survey has demonstrated that tracking households and individuals is possible even under the difficult circumstances of such extreme violent events. By creating a systematic profile of genocide perpetrators, the survey presented a more nuanced portrayal of the genocide in Rwanda beyond the simple discourse about ethnic rivalry between Hutu and Tutsi. The study particularly showed how economic considerations and issues around land distribution may have affected the outbreak of the violence as much as pre-existing ethnic rivalries.

The Darfur Refugee Questionnaire (DRQ) laid the foundations for the U.S. State Department to declare the killings in Darfur as genocide. The survey solicited a description of violent acts from the victims surviving in refugee camps and linked them to their perpetrators. Details on this complex survey are provided in Totten and Markusen (2006). This survey has been critical in policy interventions aimed at the return and reintegration of displaced populations, and the design of political settlements that may avoid the re-ignition of the conflict.

Surveys of Displaced Populations

The welfare losses suffered by displaced persons are an important area of research in conflict studies. Two of the most prominent surveys of displaced populations are the Northern Uganda Livelihood Survey (NULS; 2007) and the Deininger, Ibáñez, and Querubin (2004) study in Colombia.

The NULS was conducted in 2007 (see Bjørkhaug et al. 2008). The survey is a follow-up of the 2005 Northern Uganda Internally Displaced Persons Profiling Study and the 2006 Lira District Early Recovery Needs Assessments conducted by Fafo in Norway. The carefully phrased questions in NULS are specific enough to capture important changes in people's lives due to violent conflict, including motivations for migration, experience of violent crime and abduction, other forms of victimization and causes of health problems, as well as expectations of the future. Additionally, the survey identifies whether the person was a combatant, thus providing important

information on how combatants and displaced civilians may experience violence. Studies using the NULS 2007 include [Bozzoli, Brück, and Muhumuza \(2011 and 2012\)](#).

[Deininger, Ibáñez, and Querubin \(2004\)](#) use an unusually large survey conducted among 32,093 households applying for assistance from the Catholic Church in Colombia to investigate the decision to return after displacement. The survey contains unique information on the causes of displacement, household demographics, access to land, and labor market and education outcomes. This is one of the few surveys available that trace the movements of displaced people. Information was collected only if people requested assistance from the church, which may lead to some selection biases. However, this information has been used insightfully to examine the extent of asset losses and labor market prospects of displaced people ([Ibáñez and Moya 2009](#)), the determinants of displacement ([Engel and Ibáñez 2007](#)), and labor supply outcomes and wage changes for displaced people ([Calderón and Ibáñez 2009](#)).

These two surveys have also been paramount in questioning some of the assumptions underlying return policies for refugee and displaced populations. Notably, the two surveys have highlighted the fact that many population groups may not desire to return to original locations for a variety of reasons ranging from fear of violence, to the fact that they have, over the course of displacement, built new lives in their new locations that they do not want to abandon ([Bozzoli et al. 2013](#)). These findings are at odds with international efforts to relocate displaced and refugee people, and raise important implications in terms of reconciling the needs of displaced and host communities.

Post-conflict Reconstruction Surveys

Some surveys have been developed by international institutions operating in conflict zones to assess the sustainability of post-conflict reconstruction. One example is the Standardized Monitoring and Assessment of Relief and Transitions (SMART) surveys, which provide a standardized methodology for measuring key statistics in the wake of complex emergencies (including conflict). The method focuses on basic indicators such as the nutritional status of children under 5 and mortality rates.¹²

The International Committee of the Red Cross (ICRC) and the Greenberg Research team conduct the “People on War Surveys” in a variety of conflict-affected countries ([ICRC 2009](#)).¹³ The ICRC funds the surveys in part to assess the perception of its own interventions. The surveys are standardized so that results can be compared across all participating countries. To account for country-specific contexts, the wording of some questions is modified where necessary.

[Mvukiyehe and Samii \(2008 and 2009\)](#) have conducted a survey to evaluate peacekeeping operations in the Cote d’Ivoire. This survey captures the potential for

conflict re-escalation by reporting on events and circumstances that might warn of renewed conflict. The survey also investigates perceptions of security amongst populations and repeated violence against civilians in different locations. Similar to the Humphreys and Weinstein ex-combatant survey discussed above, respondents were asked whether or not they witnessed or suspected “inter-ethnic fighting, presence of armed groups, or recruitment by armed groups in their localities” in relation to time periods constructed between well-known events, which has allowed researchers to assess how early conflict signs have evolved across time.

Conflict Surveys Conducted among Civilian Populations

Several socio-economic household surveys have incorporated comprehensive components that capture the effect of various forms of violent conflict on civilian respondents. The Burundi Priority Household Panel (1998, 2007, and 2012) was designed to provide detailed information on the welfare effects of the civil war in Burundi by comparing households in villages affected by the war with households in non-affected areas (see [Bundervoet et al. 2009](#)). The survey features questions on violence and conflict at the individual, household, and community levels. The panel design, collected in three waves in 1998, 2007, and 2012, captures comparable data on welfare before and after incidences of violence. Special attention was given to tracking individuals who left the household since the first wave of the survey ([Verwimp and Bundervoet 2009](#)). The same team followed up the results of this survey with experimental behavioral games in conflict-affected and non-affected areas in 2009 ([Voors et al. 2012](#)). This unique setup has allowed the researchers to link outcomes measured in the survey with behavioral data, thereby proving important insights into how exposure to violent conflict may affect people’s fundamental preferences and pro-social behavior.

The Life in Kyrgyzstan Survey (LIK) interviewed 3,000 households annually over 3 years (2010 to 2012) to create a nationally representative panel ([Brück et al. 2014](#)). The LIK surveys cover a comprehensive list of topics, following similar protocols to the LSMS, with the additional inclusion of modules designed to elicit information about local tensions and conflicts, which has allowed researchers to better understand how local conflicts may affect development outcomes.

The Maharashtra Household Longitudinal Survey (MHLS) was conducted in 2010 by the Institute of Development Studies (UK) among 1,089 households living in violence-affected areas in the Indian state of Maharashtra (see [Gupte, Justino, and Tranchant 2012](#)). The same households were surveyed again in 2012. This unique panel study was designed to capture how individuals and households live in areas characterized by persistence communal violence in India. This survey has allowed

researchers to understand for the first time the intersection between economic vulnerabilities and exposure to persistent forms of urban violence in slum areas in India.

The Colombian Longitudinal Survey of Wealth, Income, Labor, and Land (ELCA) interviewed 10,000 households in rural and urban areas affected by conflict in Colombia. The first wave was conducted in 2010 and the second wave took place in 2013. This is the most comprehensive longitudinal survey ever conducted among conflict-affected populations. A novel aspect of the survey is the questionnaire modules on activities of armed groups in different neighborhoods (see Gafaro, Ibanez, and Justino, forthcoming), as well as detailed information on migration, recruitment, and local cooperation with armed groups. These surveys allow for the first time a comprehensive understanding of how violent conflict in its various modalities may lead to specific changes in institutional arrangements and individual and group behavior that may explain the persistence of violence in some areas of Colombia, but not others, with profound implications for the ongoing peace process in Colombia, as well as conflict resolution interventions elsewhere in the world.

Responding to Challenges in Purposely Designed Surveys

Purposely designed surveys conducted in conflict-affected areas are the state-of-the-art of empirical conflict research at the micro-level. There are, however, only a limited number of these surveys due to a number of challenges. First, primary fieldwork research in conflict-affected countries is quite expensive due to a lack of infrastructure and difficulties in engaging with suitably qualified local field researchers. Second, security concerns can also pose difficulties to the research team and their respondents. In addition, researchers face a series of methodological challenges. Some of the most prevalent challenges include the following: (i) defining conflict at the micro-level; (ii) choosing the appropriate unit of analysis; (iii) identifying time dimensions in survey questionnaires; (iv) dealing with data biases (such as selection bias and recall error); and (v) addressing ethical and security issues associated with doing primary research in conflict-affected contexts. We discuss these common challenges below.

Defining Conflict at the Micro-level

One of the most important challenges to designing surveys in conflict-affected contexts is to create and operationalize a definition of conflict that captures the complex impact of conflict on the lives of individuals, households, and communities. Several authors have proposed more or less overlapping typologies of violent conflict (Gupta 1990; Singer and Small 1994; Sambanis 2001). These definitions are useful for understanding conflict as a macro-phenomenon, but are difficult to

uphold at the micro level because they are too far removed from the everyday disturbances experienced by local populations (Justino, Brück, and Verwimp 2013).

An additional difficulty in defining violent conflict from a micro-level perspective is to determine when a violent conflict starts and ends. In particular, lulls or spikes in violence may make the conflict feel as if it starts and stops rather than persists at a continuous intensity. Even after a conflict has subsided at the national level, the persistence of lower levels of violence and instability may continue to affect households and their members. Likewise, as conflicts draw to a close, changes in the identity of the belligerents may create new coping dilemmas for the population. Many individuals and groups living in conflict-affected areas find themselves, therefore, responding, acting, and being affected by stages in between conflict and peace. Macro-level concepts of time periods may miss these nuanced variations at the micro-level. As conflicts change frequently over place, time, and context, it is necessary to have a broad definition of conflict while also establishing observable characteristics that can be easily captured through empirical data collection.

The Unit of Analysis

The second methodological point in the design of surveys in conflict-affected contexts is the choice of the appropriate unit of analysis for different types of questions.¹⁴ Depending on the type of information sought, survey questions typically target individuals, household heads, or central figures in the community. The individual is the lowest level of analysis. The objective of using individual-level questions is to determine how individual decision-making—across gender, age and different socio-economic backgrounds—may respond to the impact of violence on livelihoods, well-being, and security. Individual-level surveys may also be able to capture specific individuals that may have been directly involved in the conflict, such as soldiers, refugees, and displaced people.

In household-level surveys, the head or another member of household responds on behalf of the household. Household-level questions allow the assessment of the impact of shocks on households and their reactions as collective decision makers. Questions can target changes in access to services, markets, investments, and land, which may affect the entire household even if only a few members are directly involved. Household-level questions can, in addition, be used to draw a broader picture about social relations and networks.

Community-level questions may also be useful for uncovering the extent of the impact of violent conflict, especially when violent conflict events are concentrated in time and space. Community-level survey components may be able to generate a conflict history that records the overall characteristics of localized events. This information can be used as a starting point for designing household and individual-level surveys and, crucially, to provide context when gathering time information. Community-level

analysis may also allow for a more accurate determination of deaths across the community, for instance by examining listings of names in local administrative records. Moreover, knowledgeable members of communities often provide important qualitative and quantitative insights. Community-level questions are also useful for assessing migration flows, urgent needs of the community, and the impact of policy interventions, particularly reconstruction interventions in the post-conflict period.

Time Dimension

The timing of surveys is decisive for the quality of subsequent analysis. As with most socio-economic data, the quality of people's responses about conflict processes tends to diminish as the time between the conflict and survey widens. Yet in many instances, the intensity of conflict experiences may facilitate memory, and data collection in conflict-affected areas may be done well after a conflict has ended. However, much depends on the circumstances of the conflict and its long-term legacies. Researchers have used three main approaches to survey timing, including administering the survey while the conflict is ongoing, administering the survey *ex post* by asking respondents to assess before and after conditions, and making use of panel data.

If the violent conflict is still ongoing at the time of the survey, researchers tend to use a 12-month reference period to elicit information on the short-term effects of violent conflict on individuals and households. This reference period has a number of advantages. First, its frequent use in other socio-economic surveys may allow for comparability. Second, this time period is useful for gathering economic data that may contain seasonal effects, such as any indicator linked to agricultural or climatic cycles. However, before employing a 12-month reference period, researchers should ensure that this is appropriate given the dynamics of the conflict. It may be that in the last 12 months, or in the period immediately before, a major conflict event significantly affected the respondents. In these cases, it may be better to refer to the conflict event specifically in the reference period. Researchers may employ variants of prompting devices such as "since your village was attacked," "since the beginning of the conflict," or "since armed fighting ceased in your area."

Surveys cannot always be conducted very close to conflict events. When conducting a survey some time after a conflict, researchers have addressed the issue of temporal comparison by asking respondents to recall aspects of their lives before and after the conflict. Many questions asked in existing surveys address the problems of missing *ex ante* data by regularly using phrases such as "before the conflict" or "since the start of the conflict". These types of questions can create further time variation by asking respondents to recall living standards at specific points during the conflict, usually demarcated by well-known events. [Humphrey and Weinstein's \(2008\)](#) work in Sierra Leone provides a good example of this technique. Such *ex post* surveys may, however, introduce potentially severe biases, as respondents

may erroneously recall events, overestimate their levels of welfare before the conflict, or samples may exclude important sub-groups. These surveys must therefore pay particular attention to the design of reliable timelines of events and other mechanisms to elicit accurate information from respondents' memories.

Researchers may be able to collect longitudinal data if they are fortunate enough to have access to a survey that was done before, and reasonably close to, the onset of conflict. Panel datasets offer rich time variation and minimize many of the concerns about biases prevalent in other methods. However, follow-up surveys must be especially careful to control for attrition. People in conflict-affected areas tend to be highly mobile and subject to a high degree of mortality, making them difficult or impossible to include in the follow-up survey. When these groups systematically differ from the overall population, excluding them will bias the sample. However, recent work discussed above in Burundi, Rwanda, Indonesia, India, and Colombia, among others, has shown that reliable longitudinal data can be effectively collected in conflict-affected countries.

Data-related Biases

Research in conflict-affected areas takes place under unusual and often insecure circumstances, adding extra difficulties for researchers attempting to create a representative sample. This may even continue into the post-conflict period as governments may exclude researchers from sensitive areas, such as recently in Sri Lanka, Egypt, Syria, or Mali. Entire areas may be inaccessible, forcing researchers to rely on *ex post* surveys. Respondents may also self-censor answers to avoid any risk of retribution from insecure political authorities. Conflict researchers have employed several strategies to minimize such biases. Below we discuss some of the most prevalent biases in conflict contexts: selection biases and recall or response errors.

Selection Biases

Selection biases occur when individuals, households, or groups of households with particular characteristics cannot be sampled or interviewed. For example, declining economic activity during a conflict may result in entrepreneurial individuals migrating out, changing the characteristics of the population left behind. Or combatants may target specific ethnic and social groups during the conflict, forcing targeted populations to migrate or leading to a large number of deaths among specific population groups. In addition, panel datasets may suffer from attrition bias, as discussed above. The SWAY surveys addressed this issue by asking close family members to respond to an "absentee survey" on behalf of the respondent when tracking was impossible. This and other methods can be employed to help researchers generate a sample that has an equal likelihood of including individuals or households who have died or

migrated out of a conflict-affected area. If respondents have died, tracking becomes impossible. Even in these circumstances researchers must take account of the potential biases created by attrition (see [Justino and Verwimp 2012](#)).

Recall and Response Errors

The length of recall periods has been a topic of discussion in socio-economic, demographic, and epidemiological surveys for a long time ([Deaton 2001](#)). Exposure to conflict may sometimes aid recall due the intensity of the event. However, the reverse scenario is also possible when respondents may repress traumatic memories or even refuse to talk about them. Training and sensitization of survey enumerators can alert them to the potential for these biases. As discussed above, recall can be aided by using event timelines that stimulate the respondent's memory and accurately situate personal events in time. Other forms of response errors may take place in surveys conducted in conflict-affected contexts. For instance, if the survey sponsor is viewed with distrust or suspicion, respondents may provide misleading answers to questions or even refuse to cooperate entirely. In some post-conflict situations, government-sponsored surveys may run this risk, especially in formerly rebel-held territories. This may create biases if questions about conflict are included, as responses from those most affected may be inaccurate or absent. In the extreme, lingering animosity towards the government might be so strong that discussing conflict could unsettle the fragile peace and put the security of survey workers into jeopardy. For example, in the LSMS survey in Guatemala in 2000, the authorities asked relatively few conflict questions, though the conflict had only recently ended, because they feared that the population in formal rebel territories would refuse to participate. In post-genocide Rwanda, the government does not allow researchers to ask questions about ethnicity in surveys, thus limiting the capacity of researchers to link ethnicity with other variables of interest such as poverty, displacement, or gender.

Ethical and Security Considerations

Conflict surveys risk asking questions that may do harm to respondents. Researchers have a duty to weigh important ethical considerations while designing and implementing surveys. Sensitive questions may evoke traumatic memories about suffering, remorse, victimization, or guilt, potentially “re-traumatizing” respondents and harming them psychologically. Some questions may also risk incriminating or inviting retribution upon a respondent. If answers inadvertently become public, responses that identify perpetrators, victims, or actions taken by former combatants are particularly susceptible to this risk. Several mechanisms have proven useful to address and minimize potential ethical risks. The first and simplest way is to avoid asking some of

these questions. Researchers should be self-critical about whether their questions are strictly necessary, potentially harmful, or if there are less risky ways of obtaining the same information. To limit the risk of harm, it is also generally good practice to ask about group behavior rather than asking for specific names of perpetrators.

The training of enumerators and a local research team is a crucial aspect of doing high-quality surveys in sensitive and insecure areas. Ethics training should also provide comprehensive information about the risks that respondents face, and on adequate security responses.¹⁵ Proper training should also make enumerators aware of the emotional stresses associated with addressing sensitive issues surrounding conflict. A well-designed consent script is also important. Researchers should also be ready to respond should a harmful event occur, or should respondents become unduly distressed.

Final Remarks and Further Advances in Conflict Data Collection

We discussed in this paper how empirical research on conflict processes at the micro-level has flourished over the last few years due to the wider availability of good quality surveys conducted in conflict-affected countries. Some of the most comprehensive insights into the causes and consequences of violent conflict at the micro-level have been generated through purposely designed surveys. These surveys have been used to uncover unfolding process of conflict, rather than assessing conflict as a one-off shock, because they are able to collect systematic information on the various channels whereby different forms of violence may affect individuals and households. Well-designed surveys also provide valuable disaggregated information on conflict processes across time and place. However, these surveys require a lot of resources: sample sizes are large, interviews sometimes last several hours, transportation costs are high, and local expertise is crucial. Insecurity may also still be high in many of the areas being surveyed.

One way of minimizing these costs is to rely on existing large socio-economic surveys conducted by The World Bank and other international institutions, which may either contain self-reported information on conflict exposure, or can be matched to conflict-event datasets. This approach is less ideal due to the lack of precise information on the complex facets of conflict in each case study, as well as difficulties in comparing information across countries. Empirical work based on existing socio-economic surveys has nonetheless resulted in considerable advances in our current knowledge on violent conflict at the micro-level due to the development of a wealth of creative research methods to analyze conflict processes among violence-affected populations and across time. Although information on conflict is sometimes limited, the use of existing socio-economic surveys has many advantages over the use of purposely designed surveys, notably its costs and ease of availability. We suggested potential solutions for how these surveys can be made more

comprehensive in a conflict-sensitive manner. We hope that these suggestions and the wide discussion on various survey methods offered by this paper will lead to further and better efforts to collect much needed information on the lives of individuals, households, and communities affected by violent conflicts across the world.

Notes

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1. See www.microconflict.eu and www.hicn.org.
2. For example, the LSMS conducted in Timor-Leste in 2001 (after the country had experienced intense violent events in 1999) asks only two questions on war damage, focusing almost exclusively on damage to dwellings. The LSMS conducted in Tajikistan in 2003 shortly after the Tajik civil war asks only one question about war damage.
3. These include Azerbaijan (1995), four waves in Bosnia & Herzegovina (2001–2004), Guatemala (2000), Iraq (2006), Kosovo (2000), Nepal (1995/96, 2003/4, 2010), two waves in Peru (1991, 1994), Serbia (2002, 2003, 2007), Tajikistan (1999, 2003, 2007, 2009), Timor-Leste (2001, 2007), and Malawi (2004, 2010). For an excellent description of the design and use of the LSMS, refer to Deaton (2000).
4. The Armed Conflict Location and Event Dataset (ACLED), is a comprehensive dataset on political violence, including information on specific dates and locations of political violence, types of event, groups involved, fatalities, and changes in territorial control.
5. De Luca and Verpoorten (2011) have conducted a related study using the same datasets.
6. See http://www.ids.ac.uk/files/dmfile/Measuring_Conflict_in_Micro_Level_Surveys.pdf.
7. Concrete examples are provided in: http://www.ids.ac.uk/files/dmfile/Measuring_Conflict_in_Micro_Level_Surveys.pdf.
8. See <http://chrisblattman.com/projects/sway/> for a description of the project.
9. See also Fearon, Humphreys and Weinstein (2009), and the Sierra Leone PRIDE/JCTJ (2002). A useful website for the collection of information on different surveys is the Post-Conflict and Ex-Combatant Surveys, <http://www.columbia.edu/~mh2245/XCSURVEYS/>.
10. A similar methodology has been adopted by Guichaoua (2007) to examine motivations to join insurgent and incumbent groups in Nigeria.
11. See Verwimp (2003a) for a description of the survey.
12. The Centre for Research on the Epidemiology of Disasters compiles the Complex Emergencies Database (CE-DAT), which includes SMART survey data.
13. Afghanistan, Colombia, Democratic Republic of the Congo, Georgia, Haiti, Lebanon, Liberia, and the Philippines.
14. For a discussion of methodology in practice, see Green and Tony (2008), Verwimp and Bundervoet (2009), and Bundervoet et al. (2009).
15. Two American IRB-approved ethics training exercises can be found at <https://www.citiprogram.org> and <http://phrp.nihtraining.com/>. MICROCON, a large integrated program on conflict research funded under the EU's 6th Framework, developed guidelines for the ethical review of all data collection efforts prior to field work. See www.microconflict.eu.

Appendix I: Surveys with Conflict-related Questions by Regions

Angola	“Demographic and Health Survey (DHS).” 2006/7, 2011.
Azerbaijan	World Bank. 1995. “The Living Standards Measurement Study (LSMS) Azerbaijan, Household Survey.” Demographic and Health Survey (DHS), 2006.
Bosnia & Herzegovina	World Bank. 2001–2004. “LSMS Bosnia & Herzegovina, Household Survey.”
Burundi	Burundi Institute of Statistics. 1999. “The Burundi Priority Survey, October 1998 and March 1999.” Demographic and Health Survey. 2010. Samii, C., E. Mvukiyehe, and G. Taylor. 2007. “2007 National Survey Instruments, Burundi. Civilian Questionnaire – English Translation.” https://files.nyu.edu/cds2083/public/burundisurvey/ . Bundervoet, T., E. Nillesen, P. Verwimp, and M. Voors. 2009. “Integrating Conflict Questions in a Household Survey: An Example from Burundi.” HiCN Research Design Note 12. Households in Conflict Network.
Chad	Demographic and Health Survey. 2004.
Colombia	PROFAMILIA, Asociación Pro-Bienestar de la Familia Colombiana and Macro International. 1995, 2000, 2005, 2010. Demographic and Health Survey (DHS) Colombia. Arjona, A.M., and S.N. Kalyvas. 2008. “Rebelling Against Rebellion: Comparing Insurgent and Counter-insurgent Recruitment.” http://www.crise.ox.ac.uk/copy/mobilisation%20conference/arjona_kalyvas.pdf . See also https://www.kent.ac.uk/politics/carc/reading%20group/Arjona%20Kalyvas%20Mobilisation%20for%20Political%20Violence.pdf . Unpublished manuscript.
Cote d’Ivoire	Mvukiyehe, E., and C. Samii. 2008. “Laying a Foundation for Peace? A Quantitative Impact Evaluation of the United Nations Operation in Cote d’Ivoire.” http://www.columbia.edu/~cds81/docs/unoci/ics2008_report081218.pdf .
Darfur	The “Darfur Refugee Questionnaire” (DRQ) is published as Appendix I in: S. Totten and E. Markusen, eds. 2006. <i>Genocide in Darfur: Investigating the Atrocities in the Sudan</i> . Routledge, Taylor & Francis Group, New York.
Democratic Republic of Congo	Humphreys, M. 2007. “Democratic Republic of Congo,” (in French). http://www.columbia.edu/~mh2245/DRC/survey.pdf . Demographic and Health Survey (DHS), 2007.
Eritrea	Demographic and Health Survey (DHS). 2002.
Gaza	EAO survey, conducted in February-March 2009. http://www.apis.ps/documents.php?page=fs_reports .
Guatemala	World Bank. 2000. “LSMS Guatemala, Community Survey.” Demographic and Health Survey (DHS). 1995–1999 (3 surveys).
Indonesia	Barron, P., M. Humphreys, Y. Tajima, and J. Weinstein. “World Bank Aceh household and XC survey.” (ARLS) Household and XC Survey. World Bank. 2005. “GAM Reintegration Needs Assessment 2005. Survey Documentation.” See also: International Organization for Migration (IOM) prisoner survey. http://www.columbia.edu/~mh2245/XCSURVEYS/ACEH_METHOD.pdf .

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Appendix I: Continued

Iraq	World Bank. 2006. "LSMS Iraq, Household Survey—Individual Survey." Fafo-Ais. 2004. "Iraq Living Conditions Survey 2004." http://www.fafo.no/ais/middeast/iraq/imira/Tabulation%20reports/english%20atlas.pdf . Fafo-Ais. "Iraqis in Jordan 2007, survey." http://www.fafoarkiv.no/ais/middeast/jordan/Iraqis_in_Jordan.htm , report: http://www.fafoarkiv.no/ais/middeast/jordan/IJ.pdf .
Kosovo	World Bank. 2000. "LSMS Kosovo, Household Survey."
Liberia	Taylor, G. 2007. "CHF International 2007. Ex-combatant Economic Reintegration Survey (Lofa County)." http://www.usip.org/sites/default/files/sr2111.pdf . Pugel, J. 2006. "UNDP Liberia Ex-Combatant Survey Nr. 1. Field Guide for Enumerators and Supervisors. February-March 2006." http://www.columbia.edu/~mh2245/XCSURVEYS/LIBERIA_FEBO6_METHOD.pdf ; survey accessible at: http://www.columbia.edu/~mh2245/XCSURVEYS/LIBERIA_FEBO6.pdf (23/04/2010). (Results published in: Pugel, J. 2006: "What the Fighters Say: A Survey of Ex-combatants in Liberia." UNDP Liberia.) Mvukiyehe, E., and C. Samii. 2008. Laying a Foundation for Peace in Liberia. December 23, 2008. Fearon, J.D., M. Humphreys, and J.M. Weinstein. 2009. "Can Development Aid Contribute to Social Cohesion after Civil War? Evidence from a Field Experiment in Post-Conflict Liberia." <i>American Economic Review: Papers & Proceedings</i> 99 (2): 287–91. Data and Codebook available at Macartan Humphreys' personal website. http://www.columbia.edu/~mh2245/ . Demographic and Health Survey (DHS), 2007–2011 (3 surveys).
Malawi	World Bank. 2004, 2010. "LSMS Malawi, Community Survey - Household Survey." AfroBarometer 2005. "Attitudes to Democracy and Market in Malawi." http://www.afrobarometer.org . Specifically, see http://afrobarometer.org/data/malawi-round-3-codebook-2005 . Demographic and Health Survey (DHS), 1996–2010 (4 surveys).
Mali	AfroBarometer 2001. "Attitudes to Democracy and Market in Mali." http://afrobarometer.org/data/mali-round-1-codebook-2001 .
Mozambique	Republic of Mozambique, Ministry of Agriculture. 2005. "National Agricultural Survey 2005, Small- and Medium-Sized Farms-Panel." http://www.aec.msu.edu/fs2/mozambique/survey/index.htm . (Though not directly related to conflict, this survey has a good section on "coping strategies".)
Nepal	World Bank. 1996, 2003, 2005/6, 2010. "LSMS Nepal, Household Survey." Samii, C., M. Gilligan, and K. Eck. 2009. Nepal Peacebuilding Survey: Study Design, December 10, 2009. http://microdata.worldbank.org/index.php/citations/2205 .
Nigeria	Guichaoua, Y. 2007. "Who joins ethnic militias? A survey of the Oodua People's Congress in South-western Nigeria." CRISE Working Paper. See http://www.qeh.ox.ac.uk/publications/wps/crisewps .

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Appendix I: Continued

Papua New Guinea	Household Income and Expenditure Survey 2008.
Peru	World Bank. 1991, 1994. "LSMS Peru, Household Survey."
Rwanda	Rwandan Rural Labour and Death Survey, 2002. http://www.aec.msu.edu/fs2/Rwanda/deathhistory_eng.pdf . Institut National de la Statistique, Ministère des Finances et de la Planification Économique, Kigali, Rwanda, 2006: Rwanda Demographic and Health Survey 2005. Calverton: ORC Macro. Rwanda Prisoner Questionnaire. Discussed in: Straus, Scott (2007) "The Order of Genocide : The Dynamics of Genocide in Rwanda." <i>Genocide Studies and Prevention</i> 2 (3): Article 6. Available at: http://scholarcommons.usf.edu/gsp/vol2/iss3/6 . Davenport, C., and A. Stam. "Butare Survey." http://www.columbia.edu/~mh2245/XCSURVEYS/BUTARE.pdf .
Serbia	World Bank. 2002, 2003, 2007. "LSMS Serbia, Household Survey (individual)."
Sierra Leone	Humphreys, M., and J. Weinstein. 2003. "Sierra Leone Ex-Combatant Survey #1." http://www.columbia.edu/~mh2245/Survey.pdf . PRIDE/ International Center for Transitional Justice. 2002. "Ex-Combatant Views of the Truth and Reconciliation Commission and the Special Court in Sierra Leone." http://www.ictj.org/images/content/0/9/090.pdf . Demographic and Health Survey (DHS), 2008.
Sri Lanka	Demographic and Health Survey (DHS), 2006/7.
Tajikistan	World Bank. 1999, 2007, 2009. LSMS Tajikistan, Household Survey (pop. point).
Timor-Leste	World Bank. 2001. "LSMS Timor-Leste, Household Survey (individual), Timor-Leste- Survey of Living Standards 2007 and Extension 2008." Demographic and Health Survey (DHS), 2009/10.
Uganda	Blattman, C. 2005. "Uganda: Survey of War-affected Youth (SWAY), Household-Survey." http://chrisblattman.com/data/sway/ . Blattman, C. 2005/6. "Uganda: Survey of War-affected Youth (SWAY), Phase 1 (Males) Individual survey." http://chrisblattman.com/data/sway/ . Blattman, C. 2007. "Uganda: Survey of War-affected Youth (SWAY), Phase 2 (Females) Individual survey." http://chrisblattman.com/data/sway/ . Fafo AIS. 2007. "Northern Uganda Livelihood Survey." 2005 Northern Uganda Internally Displaced Persons Profiling Study 2006 Lira District Early Recovery Needs Assessments. Demographic and Health Survey (DHS), 1995–2011 (7 surveys).
Vietnam	Kalyvas, S.N., and M.A. Kocher. 2009. "The Dynamics of Violence in Vietnam: An Analysis of the Hamlet Evaluation System (HES)." <i>Journal of Peace Research</i> 46: 335–55. www.prio.no/misc/Download.aspx?file...Data%2FFKK_appendix.doc .

Note: Further information on DHS and LSMS can be found online at <http://www.dhsprogram.com> and <http://go.worldbank.org/IFS9WG7E00>, respectively.

Appendix II: Studies using LSMS and DHS in conflict-affected countries

LSMS or DHS survey	Academic work	Selected Results
DHS Liberia 1986	Hegre, H., G. Østby and C. Raleigh. 2009.	<ul style="list-style-type: none">• Shows how pre-existing absolute and relative welfare influence conflict events in the Liberian civil war.
DHS Rwanda 1992 and 2000	De Walque, D. and P. Verwimp. 2010.	<ul style="list-style-type: none">• Finds that genocide-related mortality was highest among educated and urban families.
DHS Rwanda 1992 and 2010.	Schindler, K. and T. Brück. 2011.	<ul style="list-style-type: none">• Observes an impact of the genocide on marital status, the marriage market, and, consequently, on fertility.
LSMS Nepal 1995/6 and 2003/4	Pivovarova, M and E. L. Swee. 2012.	<ul style="list-style-type: none">• Shows how endogeneity and self-selection issues create biases in estimating the micro effects of conflict in Nepal.• Demonstrates that “low ability” individuals are most likely to be displaced, suffering from the direct effects of conflict and the adjustment costs of displacement.
LSMS Tajikistan 1999 & 2003	Shemyakina, O. 2006.	<ul style="list-style-type: none">• Finds that exposure to conflict has a significant effect on female enrollment and schooling attainment, but no effect on males.
LSMS Tajikistan 1999 & 2003	Shemyakina, O. 2009.	<ul style="list-style-type: none">• Studies the effect of conflict on marriage and reproductive behavior, finding that conflict postpones marriage among women of marriageable age.
LSMS Tajikistan 1999 & 2003	Justino, P. and O. Shemyakina. 2008.	<ul style="list-style-type: none">• Studies the effect of remittances on the labor supply, finding that remittances decrease labor participation rates, especially in conflict areas.
DHS Cambodia 2000	De Walque, D. 2004.	<ul style="list-style-type: none">• Finds that excess mortality during the Khmer Rouge period was especially likely among adult males, especially with urban or educated backgrounds.
LSMS Kosovo 2000	Bhaumik, G., I. Gang, and M. S. Yun. 2005.	<ul style="list-style-type: none">• Studies the relationship between ethnic conflict and economic disparity, showing that, despite an advantageous economic position, Serb rates of poverty were higher than Albanians.
LSMS Kosovo 2000	Alva, M., E. Murrugarra, and P. Paci. 2002.	<ul style="list-style-type: none">• Examines the costs of conflict in education, showing that ethnic tension has harmed Albanian male youth educational attainment.

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Appendix II: Continued

LSMS Kosovo 2000	Douarin, L., J. Litchfield, and R. Sabates-Wheeler. 2010.	<ul style="list-style-type: none">• Finds that exposure to conflict predicts the livelihood choices of households, such as the take up of wage labor, reliance on remittances or social assistance, or entrepreneurial activities.
LSMS Bosnia Herzegovina 2001–4 (4 surveys)	E. Kondylis. 2007.	<ul style="list-style-type: none">• Investigates conflict's effects on the labor market and finds that "able" workers are more likely to be displaced and unemployed after conflict.
LSMS Bosnia Herzegovina 2001	E. L. Swee. 2009.	<ul style="list-style-type: none">• Finds that war intensity, particularly the military draft, adversely affects secondary, but not primary, schooling attainment.
LSMS Bosnia Herzegovina 2001	Do, Q. T. and L. Iyer. 2009.	<ul style="list-style-type: none">• Finds no significant differences on mental health from people who experienced different levels of conflict intensity.
LSMS Timor-Leste 2001 & 2007	Justino, P., M. Leone and P. Salardi. 2014.	<ul style="list-style-type: none">• Studies impact of conflict on the level and access to education of children and finds a substantial loss of human capital accumulation among boys.
LSMS Nepal 2003/4	M. Hatlebakk. 2007.	<ul style="list-style-type: none">• Studies the effects of Maoist influence on data collection quality, finding only minor impacts such as the need for approval.
LSMS Nepal 2003/4 DHS Nepal 1996–2006 (3 surveys)	C. Valente. 2011.	<ul style="list-style-type: none">• Finds that abductions by Maoists and conflict intensity increased the probability of early marriage but that only abductions by Maoists had a negative effect on school attainment.
LSMS Nepal 2003/4	Menon, N. and Y. van der Meulen Rodgers. 2011.	<ul style="list-style-type: none">• Finds that women's likelihood of employment increased because of conflict.
UNFPA- Burundi 2002	Bundervoet, T. 2009.	<ul style="list-style-type: none">• Finds that older, wealthier and better-educated males were more likely to be killed in the 1993 Burundi massacres.• Finds that communal pressure for land increased the likelihood of killings.
36 DHS surveys	Østby, G. 2008.	<ul style="list-style-type: none">• Finds evidence that "horizontal inequalities" that coincide with identity divisions aggravate grievance and promote social cohesion, facilitating mobilization for conflict.

Note: World Bank Living Standards Measurement Studies are available at the following website: http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTLSMS/0_contentMDK:21588800~menuPK:4196952~pagePK:64168445~piPK:64168309~theSitePK:3358997,00.html.

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